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THE WATER WITCH.

LA PLATA,

THE

ARGENTINE CONFEDERATION,

AND

PARAGUAY.

BEING A NARRATIVE OF THE EXPLORATION OF THE TRIBUTARIES OF THE RIVER LA PLATA AND ADJACENT COUNTRIES DURING THE YEARS

1853, '54, '55, AND '56,

UNDER THE ORDERS OF THE UNITED STATES GOVERNMENT.

BY THOMAS J. PAGE, U. S. N.,

COMMANDER OF THE EXPEDITION.

With Map and Numerous Engravings.

NEW YORK:

HARPER & BROTHERS, PUBLISHERS,

FRANKLIN SQUARE.

1859.

Entered, according to Act of Congress, in the year one thousand eight hundred and fifty-nine, by

HARPER & BROTHERS,

in the Clerk's Office of the District Court of the Southern District of New York.

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INTRODUCTION.

THERE are circumstances connected with the origin and organization of the "La Plata Expedition" which may be interesting to the reader, as an Introduction to the Narrative of the Expedition.

In the year 1851 I returned from a cruise on the East India Station, having spent the greater portion of three years in the Chinese waters. While in the neighborhood of Canton I often enjoyed the society and conversation of my friend, Mr. R. B. FORBES, at that time the head of the house of Russell and Company, whose experience in the navigation of the Chinese seas had made him aware of the great defects of our best charts of those waters. One day, while seated in his veranda at Macao, indulging in a Manilla cheroot, and admiring the scenery around the harbor, he remarked that, considering the importance and value of our trade with China, we needed more accurate surveys to point out the dangers that beset the navigator at every league in those waters.

I was impressed by the suggestion, and replied that I would gladly undertake the work, under the orders of government. It was agreed that, upon our return home, we should make a joint effort to induce the government to carry our views into effect. The importance of the subject was perceived by Congress and the Navy Department; and when it became evident that the project was to be carried out, I was informed by Mr. GRAHAM, then Secretary of the Navy, that I was to be intrusted with the execution of the survey.

I thereupon, after consultation with Mr. FORBES, presented to Congress a statement as to the number and kind of vessels required, and the amount needed for their construction. A propeller and two schooners were recommended, and the appropriation was made, in accordance with my estimates.

A change took place in the Navy Department. Mr. GRAHAM resigned, and Mr. KENNEDY was appointed Secretary of the Navy.

Meanwhile the "China Sea and Behring's Strait Survey"* was expanded from its original unpretending design into an expedition upon a large scale for the investigation of every branch of natural science, involving the employment of a squadron of five vessels, with a sloop of war as "flag-ship," and a corps of scientific persons.

My position on the Naval Register was that of lieutenant. This was urged as a bar against my appointment to this important command, which was accordingly assigned to one of higher rank—a commander. I was somewhat annoyed that my bantling had grown entirely beyond my control, and asked to be excused from occupying the position of second in command, which was tendered to me by the Secretary. In doing this, I made known my agency in originating and prosecuting the measure.

A few days after, I was offered the command of an expedition for the exploration and survey of the Rio de la Plata and its tributaries. The same day's mail brought me another offer of service, made through the influence of friends, and highly flattering to me personally and professionally. I accepted the former.

Congress made no special appropriation for this work. To Mr. FILLMORE, then President, and to Mr. KENNEDY, the Secretary of the Navy, belongs the credit of assigning this particular duty to the Water Witch, as one of the vessels of the squadron on the coast of Brazil. She was officered, manned, and equipped in the usual manner of vessels of her class, with the exception that her armament was changed to three bronze howitzers. She was also furnished with a few astronomical instruments, and a small provision of materials for the collection and preservation of specimens in Natural History.

The explorations, a narrative of which is contained in the following pages, embraced an extent of about three thousand six hundred miles by water, and of four thousand four hundred miles by land through Paraguay and the Argentine Confederation. In connection with the other duties assigned to me by my instructions, I was intrusted with diplomatic powers to negotiate a treaty of friendship and commerce with the government of Paraguay. Although no naturalist accompanied the expedition, the letters

* The Behring's Strait clause was an addition suggested by the intelligent Superintendent of the National Observatory, whose investigations into the various whaling regions of the globe had led him to see the defects of our charts of that region.

and reports of scientific men, to whose inspection some of the collections have been submitted, will show to what extent my instructions in this respect have been carried out.

When I presented to the Secretary of the Navy my "Report of the Exploration and Survey of the River La Plata and its Tributaries," I anticipated making one more full and copious at a subsequent period. The Secretary, however, expressed himself satsfied with that document; but I was not. I found that a desire had been awakened for a knowledge of that country which could not be comprised within the limits of a preliminary report. This having been published in some of the leading journals of this country and of Europe, I received many letters asking "for more detailed information respecting that section of South America." But for these inquiries, I believe I should have shrunk from the task of preparing a work for publication during my only hours of leisure after discharging the duties of "an office for the construction of charts of the La Plata Expedition," and amid other interruptions of an official character. But my journals contained ample materials for a book, and it seemed more easy to arrange this material into a narrative of the expedition, than to answer the numerous letters which continued to pour in upon me. Accompanying the narrative are a few chapters giving an outline sketch of the history of La Plata, and an account of the Jesuit missions in the country.

In presenting this volume to the public, I can claim for it no special consideration on the ground of artistic arrangement or literary merit. For its favorable reception I rely mainly upon the importance of the matters of which it treats.

To the Smithsonian Institute I am indebted for aid in providing the means necessary for the collection and preservation of specimens in Natural History, and for valuable information as to their application. Also to M. F. MAURY, U. S. N., Superintendent of the Naval Observatory, for the selection of instruments, and for valuable suggestions in the prosecution of several important portions of our work. Special thanks are also due to Mr. GEORGE W. BLUNT, of New York, and Mr. R. B. FORBES, of Boston, men who are always prompt in the advocacy and support of all measures having for their object the extension of the bounds of science and of commerce; to the officers attached to the expedition, who labored with intelligence and energy until its results were embodied in well-executed charts; and to Lieutenant H. N. HARRISON,

who, in connection with other office duties, reduced the meteorological observations presented in the Appendix. The American Geographical and Statistical Society took an early interest in the exploration of the River La Plata. At a meeting held May 11th, 1852, a memorial upon this subject, prepared by S. De Witt Bloodgood, Esq., was adopted, and ordered to be transmitted to the Secretary of the Navy. This will be found in the Appendix.*

Fully impressed with the importance, commercially as well as scientifically, of extending the examination, already so successfully carried on, into the principal tributaries of the central waters of La Plata, which neither time nor events permitted during the late exploration, I set to work, after my return home, immediately on the meeting of Congress, and, through the interest taken in the matter by the able Senator from Louisiana, Mr. Benjamin, procured the passage of an act appropriating a small sum for the farther prosecution of my late work. Under a contract with the Navy Department, a suitable iron steamer was built by Mr. R. B. Forbes of Boston, and chartered to the government. Although of small dimensions—length 98 feet, beam 16, and draught 4—she was taken out to Monte Video under sail, rigged as a "three-masted schooner," and arrived safely early in the month of March of the present year (1858), after a passage of about 70 days. The officers associated with me in this expedition sailed in February, and arrived out in time to receive the little steamer, which I have named *Argentina.*

My duties in connection with the construction of the charts of the previous expedition claimed my attention at this time, and, before their completion, my services having been required by the Navy Department in the organization of the force designed to operate against Paraguay in the demand for redress against that government, I was detained by order of the Secretary for this duty.

The position assigned me—under the gallant senior officer of the navy, Wm. B. Shubrick, flag-officer—as Captain of the Fleet of the Brazil Squadron and Paraguay Expedition, will enable me to apply my best energies to the accomplishment of the great objects in view; and when these shall have been obtained, I look with sanguine hope to the final completion of that not less important work, the continuation of the exploration of the tributaries of La Plata.

Washington, October, 1858.

* See Appendix I.

LA PLATA,

THE

ARGENTINE CONFEDERATION,

AND

PARAGUAY.

LA PLATA.

CHAPTER I.

Urquiza's Decree, opening the Waters of La Plata.—The Expedition.—Its Objects.—The Water Witch.—Her Sea Qualities.—The Voyage.—Arrival at Rio de Janeiro.—Correspondence with the Government.—Permission granted to ascend to Albuquerque.—Further Extension of this Privilege.—Pamperos.—The Morgan Wheel.—French Charts.—Arrival at Montevideo.—Quarantine.—Yellow Fever.—Montevideo.—Its Trade and Population.—Colonel Paunero.

THE historical chapters appended to this narrative will present a detailed account of the political affairs of the countries adjacent to the River La Plata. At present it is only necessary to premise that in the movement against Oribe, Urquiza and the Emperor of Brazil had in view one great object—the opening of the river communications of La Plata to commerce. After the defeat and flight of Rosas, and the election of Urquiza as Provisional Director of the Argentine Confederation, one of the first measures of his administration was a decree, issued August 28th, 1852, declaring the navigation of the rivers of the Confederation free to all flags, the decree to take effect the 1st of October of the same year. The seal of many navigable waters, offering communication with the Atlantic to a region of country embracing not less than 800,000 square miles, was thus broken. A vast territory was not only opened to commerce, but the most liberal inducements were given to immigration. Results, even at this early period, attest the sagacity of Urquiza, and foreshadow the prosperity to which that portion of South America will attain under his enlightened administration.

The government of the United States was the first to avail itself of the opportunity thus offered to all maritime nations to obtain a more extended knowledge of La Plata. An expedition charged to explore its rivers, and to report upon the extent of their navigability and adaptation to commerce, was placed under my command in February, 1853.

These were its first objects; but my instructions covered a much wider field. I was ordered to penetrate into the interior of the countries of La Plata, to examine their agricultural resources, and to make such collections in Natural History as the means at my disposal would permit.* In addition to this service, I was honored by the President, Mr. Fillmore, with a commission to negotiate individually, or jointly with Messrs. Schenck and Pendleton, our ministers to Brazil and the Argentine Confederation, a treaty of commerce and navigation with the Republic of Paraguay: an honor I highly appreciated, for it was entirely unsolicited.

The Water Witch, a steamer of four hundred tons and nine feet draught, was placed under my command to carry out these instructions. She was not altogether adapted to the work of the expedition, but was better suited to it than any other vessel then at the disposal of the Navy Department. She was, in some measure, an experiment ship, to test the adaptation of the "Morgan wheel" to steamers, an experiment which caused delay and embarrassment throughout the prosecution of the work. The operations of the expedition were circumscribed by graver obstacles, to which I shall allude in the course of my narrative. It nevertheless embraced a river and land exploration of a little more than nine thousand miles in a country almost unknown, and established the navigability of waters of which the natives themselves were ignorant.

Owing to the peculiar construction of the wheels of the Water Witch, we found it impracticable, even with the most favorable wind, to dispense with steam; consequently, our course was so shaped as to render accessible, at short intervals, those ports known to be depositories of coal. We touched at the island of St. Thomas, at Demarara, English Guiana, Cayenne, French Guiana, Maranham, Pernambuco, and Rio de Janeiro.

At Maranham it became necessary to raise the shaft "into line," it having sunk to such a degree as to affect the movements of the engine very sensibly. The weight of the wheels, twenty-four tons, added to that of the shaft, rendered this a somewhat difficult operation with the limited means to be found on board a vessel of the size of the Water Witch. Necessity seldom fails to quicken one's ingenuity, and, fortunately, we discovered a way of repairing the defect.

* See Appendix A.

A large lighter—an open, flat-bottomed boat of the capacity of twenty-five tons—was secured abreast of one of the wheels, and filled with water. Two pieces of hard, strong timber, laid transversely across the lighter, passing under the centres and between the arms of the wheel, and resting on the "outboard sheer plank" of the steamer, were there lashed. They were secured in the same manner to the centres and arms, and the intermediate spaces filled in with hard wood, thus forming a solid mass of timber. The water was then pumped out of the lighter, which, naturally rising from its almost submerged state, raised the wheel and shaft sufficiently to admit the insertion beneath the "outer pillar block" of a plate of sheet iron, by which it was brought in place. The same means were used in raising the opposite end of the shaft.

Having remedied this derangement, and received on board a supply of coal, we sailed for Rio Janeiro, touching at Pernambuco on our way.

For a successful and complete exploration of the Paraguay and Parana Rivers, it was necessary to obtain from the Emperor of Brazil permission to enter that part of his empire bordering on these waters. In the absence of our minister, Mr. Schenck, I addressed a note to Mr. Ferdinand Coxe, Secretary of Legation, requesting him to present the subject to the Emperor, and solicit his favorable consideration of the work, so far, at least, as to insure to it the exploration of those tributaries of the River La Plata over which the imperial government exercised exclusive jurisdiction. The following correspondence between our minister, his secretary of legation, and the minister of foreign affairs, will show the grounds upon which this request was made, and those which influenced the Brazilian government in declining to accede to it.

"United States Steamer Water Witch,
Rio de Janeiro, April 26th, 1853.

"Sir,—The expedition on which the Water Witch has been ordered by the President of the United States, having purely for its object the advancement of commerce and promotion of science—objects interesting to all civilized nations, but more especially to those on whose borders or in whose territories its operations may extend, I wish, through the legation of the United States, to call the attention of the Brazilian government to this expedition, with the hope that, through its enlightened policy, it may be disposed to forward the work with which I am intrusted, whensoever its operations may border upon or extend into the territory of Brazil.

"Facilities might be afforded and difficulties removed by the simple act of approval and commendation on the part of Brazil, of which her frontier and inland posts could be notified in advance of the expedition.

"You are too well aware of the good likely to result from the work we have in hand to require any argument from me. I therefore leave the matter in your keeping, with the hope that your efforts to advance the aim and object I have in view may succeed to our entire satisfaction.

"THOMAS J. PAGE, *Lieutenant Commanding.*

"Mr. FERDINAND COPE, *Secretary of Legation.*"

"Legation of the United States,
Rio de Janeiro, April 26th, 1853.

"SIR,—In the absence of Mr. Schenck, I have the honor to inclose to your excellency a copy of a letter just received from Lieutenant Thomas J. Page, commanding the United States Steamer Water Witch now in this port. This officer has been ordered by the President of the United States upon the highly interesting and important duty of exploring and surveying all the rivers running into the River La Plata, and it is not doubted that the results of the expedition will be of the highest importance to the commercial and scientific world, and that Brazil, as bordering upon, and at some points entirely inclosing the rivers it is proposed to ascend, will not be the nation least benefited by the operations of the expedition.

"Your excellency will perceive, from Lieutenant Page's letter, that he asks from the imperial government such assistance in the object he has in view as may be given by orders of friendly co-operation to the imperial officers and agents he may meet when his operations may border upon or extend into the territory of Brazil.

"Your excellency knows too well what these orders should be, and to whom they should be given, for me to do more than communicate Lieutenant Page's request, as I am confident that the enlightened views of your excellency will lead you to further the aim and object of the expedition by all the means in your excellency's power.

"The Water Witch will leave here for Montevideo and Buenos Ayres on the 30th instant, and I will have much pleasure in forwarding any communication which your excellency may desire to send to those points; and I avail myself of the occasion to renew to your excellency the assurance of my high respect and distinguished consideration.

"FERDINAND COXE, *Secretary of Legation.*

"To H. E. PAULINO JOSÉ SOARES DE SOUZA, of the Council of H. M. the Emperor, Minister and Secretary of State for Foreign Affairs.

[TRANSLATION.]

"Foreign Office, Rio de Janeiro, May 4th, 1853.

"I received, after some delay, the note which, in the absence of Mr. Schenck, was addressed me by Mr. Ferdinand Coxe, Secretary of Legation,

under date of the 26th of April last, inclosing a copy of a letter he had received from Lieutenant Thomas J. Page, who, having been charged with the duty of exploring the different rivers, affluents to 'La Plata,' asked from the imperial government all the assistance in its power, by means of orders and recommendations for a friendly co-operation on the part of the respective authorities of the empire. In reply, I have to say to Mr. Coxe that the imperial government, having opened to foreign commerce, in the River Paraguay, the port of Albuquerque, it makes no objection to Lieutenant Page carrying his explorations to that point, and will send the necessary orders to the President of Matto Grosso, and other imperial agents, that they may give to Lieutenant Page all co-operation in their power; but the imperial government, not having yet opened to foreign nations other ports above Albuquerque, and not having yet agreed as to the navigation of these interior rivers with the nations on their banks [*nacoes riberinhas*], it can not permit foreign vessels to enter them, and thus establish an example and precedent which might be prejudicial to the empire, as the right to the navigation of these rivers has not been settled.

"I avail myself of this occasion to offer to Mr. Coxe the assurance of my esteem and consideration.

"PAULINO JOSÉ SOARES DE SOUZA.

"Mr. FERDINAND COXE, *Secretary of Legation.*"

It will be observed that this refusal was not absolute, but that permission was given for the Water Witch to ascend the Paraguay as high as Albuquerque, a town some distance within the territorial limit claimed by Brazil. On our arrival at Coimbra, the first imperial military post on the Paraguay, I was informed that the privilege of ascending the river had been extended to Corumba, a small post about sixty miles above Albuquerque.

Permission was, however, subsequently granted to extend the work throughout the Paraguay, and to any of its tributaries within the empire. It is a source of deep regret that this was received when circumstances beyond my control rendered it entirely impossible for me to act upon it. An arbitrary decree of the President of Paraguay forced me to abandon the exploration of the higher waters of the Parana and Paraguay, with their western and eastern tributaries, at the moment that our labors had reached the most interesting point. The events which led to this decree will be given in another chapter of this work.

The able advocacy of our minister to Brazil, Mr. Schenck, followed by that of Mr. Trousdale, doubtless brought about this change in the policy of the imperial government.* I was unwill-

* See Appendix B.

ing to believe that it was the fixed determination of Brazil to keep closed water-courses whose navigability, once established, would bring into easy communication with the Atlantic some of the richest of her northwestern provinces. I had confidence, too, in the reputation for learning and appreciation of science which distinguished his imperial majesty, and therefore sought the earliest opportunity, by correspondence with our minister at Rio de Janeiro, to bring the subject before him again.

An appropriate occasion seemed to offer itself in the change of our representation at that court. Mr. Trousdale, who succeeded Mr. Schenck, renewed the application, urging the same arguments that had been set forth by his predecessor. The request was granted; and although, as I have stated, I was unable to avail myself of it, the concession proves the enlightened views of the emperor for the promotion of science.

We remained in the harbor of Rio long enough to receive on board such quantities of coal and provisions as the capacity of our steamer would allow. It was important to enter the Parana with as full a supply as possible; and with the hope of slipping into "La Plata" in the interval of those prevailing gales called "pamperos," which blow at times with great violence, I had burdened the little craft somewhat beyond the draught designed in her construction. This brought her rail nearer the water's edge than would be desirable, should she have to contend with a "pampero." As we approached the latitude of those winds, her qualities as a "sea-boat" were fully tested; for she encountered one of these gales, as if it had been intended that she should prove false the various knowing predictions made previously to her sailing from the United States, that she would "never reach her destination."

These winds, coming from the Andes, sweep over the pampas unobstructed, and break upon the coasts with the terrific force of hurricanes.

The waves broke over the Water Witch like a cataract, first over the bows, then over the stern, the water finding an outlet through the ports; she, notwithstanding, struggled through them with an even movement of the engine, which made evident the superiority of the Morgan "action" over that of the common "radial wheel" for sea-steamers. Although at times nearly submerged to its centre, the vertical entry of its buckets into the water enabled it to move with uniformity, and without derangement or strain to

the machinery. The principle is undoubtedly a good one; and, with some few changes in its application (as made to the Water Witch) which experience pointed out as important, it could be made much more effective.

The question may nevertheless be asked, Are not the advantages of the vertical over the diagonal action counterbalanced by the liability of the former to derangement in the constant abrasion of the bushings and casings peculiar to its eccentric arrangement? As it was an experiment in our service, we were not provided with the means of immediate remedy for every case, which caused, as I have before stated, delay and embarrassment. Experience proved that the abrasion was tenfold greater in rivers than in the ocean, caused doubtless by the earthy matter afloat in fresh water. With a change of the eccentric from the guard (the position of it on board the Water Witch) to the shaft,* where any irregular movement in the latter would be common to both, and a substitution of steel for the composition bushings,† the disadvantages we experienced would be much diminished. It should never, I think, be applied to steamers designed for river navigation unless wooden bushings be used. But its advantages at sea and in stormy weather were fully demonstrated in this pampero, where the movements of the engine, though slow, were as uniform as they would have been in a placid river.

Running along the southern coast of Brazil near enough to shore to render objects on land well defined, we had an opportunity of testing the accuracy of our charts. Some proved to be greatly in error. I have seen no English surveys of this coast, but I must avail myself of this opportunity to express my high appreciation of the French charts over all others that have come under my observation. I can not give a better evidence of my confidence in them than to state that, though no one on board the Water Witch had ever before entered the estuary of St. Catharine, yet, guided solely by one of them, we ran in through the southern entrance and anchored, on a very dark night. We had "made the headlands" before the closing in of day, and while "standing into" the harbor, the roar of the breakers on either side warned us of the

* Since writing the above, Mr. Brown exhibited to me, December 15, 1857, in Washington, a patented invention of his, made in 1853, with the eccentric applied to the shaft inside of the wheel.

† It has been satisfactorily determined that wooden bushings of lignum-vitæ, locust, or any such woods, are preferable to either brass or steel.

narrowness of the pass. On the following day we passed up the estuary, the harbor chart being our only pilot through the windings of the channel, the depth of which in many parts was only from one to two feet greater than the draught of the steamer.

A few days after the gale which tested so fully the powers of our little craft, we bade adieu for a time to old ocean, and, under the cheering influence of a bright morning sun, passed Santa Maria, the northern cape of the mouth of "La Plata." Our feelings may be imagined on entering this vast reservoir of great rivers and a multitude of smaller waters, which coursed through lands so invested with the interest of the unknown that, in contemplating them as the scene of our labors for some years to come, we felt all the enthusiasm of explorers, hoping to add largely to geographical knowledge. The River "La Plata" should be called an estuary, being 170 miles wide at its mouth, and 180 in length.

We continued our course, and toward midnight, guided by the revolving light of the "Mount" (from which the city derives its name) and the lights of the town, we reached the anchorage safely. Rounding close under the stern of a large ship, though it was very dark, I became satisfied of her identity, reported the arrival of the steamer Water Witch, and asked, "Is that the frigate Congress?" The reply from the officer of the deck was in the affirmative. We exchanged the usual compliments, and soon the little craft was at anchor "alongside the flag-ship" of one of the most gallant officers of the navy, the late Commodore Isaac M'Keever.

We had sailed from an infected district (Rio Janeiro), where the yellow fever was raging, and had escaped without a single case; but there is no appeal from the laws of quarantine, and, notwithstanding the perfect health of officers and crew, we were subjected to the usual imprisonment. Few so well as sailors know the pleasure and eagerness with which ships from "home" are greeted by those on foreign stations; but we could not communicate with our friends on board the "frigate" without subjecting them to the detention which awaited us; therefore, after the lapse of a few hours, we entered the harbor, and anchored in that quarter assigned to vessels in quarantine.

Until within a few years, the health of Rio de Janeiro, next to the security and magnificence of its harbor, had formed its greatest attraction to vessels trading or cruising on the Brazilian coast; but in 1849 the yellow fever was brought to this



MONTEVIDEO, FROM THE FORT ON THE MOUNT.

beautiful region from the coast of Africa, and it has increased vastly the mortality. It is said, however, now to be on the decrease. Perhaps I am hasty in adopting the most generally received opinion of its origin by ships from the African coast, for medical men are by no means agreed on this point, some attributing it to local influences, there having been, during the prevalence of this fever, not only a cessation of storms, great stagnation in the atmosphere, and other meteorological changes, but, of late years, an increased malignancy in the types of fever prevalent. Again, it is worthy of note, that from Rio it has extended in a northerly direction, visiting all the cities of the coast of Brazil. "La Plata," so far, has been exempt. Montevideo and Buenos Ayres, with a population, the former of one hundred and twenty, the latter of forty thousand souls, have never been troubled by this scourge.*

Montevideo, the chief town and capital of Uruguay, is the first consider-

* The above had scarcely been written when the intelligence arrived that the fever had reached Montevideo in the spring of 1857.

able port on "La Plata," on entering from sea, though a portion of the trade is shared by Maldonado, about 70 miles east of it, and on the same side of the river. It is situated on a peninsula, rising gradually to a level, with a gently rolling country, which extends to the "sierras" on the confines of Brazil. The extremity of this peninsula forms the southern point to the entrance of the harbor. On the opposite side stands "the Mount," rising from the water's edge to a height of about 490 feet, and crowned by a small fortress, now in ruins, in the centre of which is the revolving light to which I have alluded. The harbor, although not very spacious, is protected from all winds save those from the southwest, the quarter whence come the "pamperos." Although they burst over "La Plata" at this point with great violence, grave marine disasters seldom occur, for the "holding-ground" is good, and the "under tow" enables vessels to resist the force of the wind and ride easily at their anchors. From the mouth of the harbor to the inner anchorage, the depth varies from 12 to 18 feet.

Notwithstanding the depressed state of trade, in consequence of the nine years' siege of Oribe, its occupation by foreign troops, and the destruction of the cattle—one great source of wealth to the province—Montevideo has increased in population, and in its domestic architecture there has been great improvement. Formerly the buildings were uniformly of one story, with "azoteas;" now they are of two and three, and finished in the handsomest modern style. The usual materials for building are brick and stone. The latter is generally covered with stucco, which the equable climate preserves in perfection. The city has extended far beyond its original limits defined by the old wall and ditch; and when civil and foreign wars shall cease to distract this country, I can well imagine that it will offer many attractions as a residence, both socially and commercially.

Before sailing from Montevideo I called on Colonel Wincheslao Paunero, an officer of the War Department, and brother-in-law of the late President Bolivian of Bolivia, and obtained from him the loan of a very handsomely executed map of that state, from which I took a tracing, as it seemed to be authentic, and of more recent date than any I had seen. This map was executed under the administration of General Bolivian. Colonel Paunero remarked that he would take much pleasure in presenting it to me for the benefit of the expedition; but as it was left to him as a legacy by his

deceased friend and relative, he must forego the gratification of doing so. He seemed greatly interested in our work, and sent me a letter of introduction to the Bolivian chargé at Buenos Ayres, Señor Don Juan de la Cruz Bennavento, whom I found enthusiastic on the subject of our expedition, hoping that it might be the means of establishing the practicability of some outlet for the products of his isolated country through the waters of "La Plata."

CHAPTER II.

Arrival at Buenos Ayres.—Its Site.—Winds.—Higueritas.—Trade.—Buildings.—Fruits and Flowers.—Landing at Buenos Ayres.—Besiegers and Besieged.—Our Ministers.—Treaty with President Lopez.—Urquiza's Army.—Visit at Headquarters.—Personal Appearance of the General.—He interests himself in the Expedition.—Detention at Buenos Ayres.—Letter from Mr. Pendleton.—Treachery in the Squadron.—Joint Treaty of Navigation.—Martin Garcia Channel.—New Channel discovered.—Letter from Messrs. Schenck and Pendleton.—Breaking up of the Siege.—Senor Urquiza and Staff on board the Water Witch.—Palermo, the former Residence of Rosas.—The Dictator and his Daughter Manuelita.—Urquiza's Dog.—The Director's Demeanor.—The Voyage.—Ladies on board.—Temperance of Urquiza.—He leaves the Water Witch.—Return to Buenos Ayres.—Tribute to British Officers.

On the afternoon of the 24th of May we sailed from Montevideo, and arrived the following morning at Buenos Ayres. We had gained time, and, from the width of the river, and the unattractive character of its shores, had lost nothing by passing this distance—one hundred miles—in the night. Admirable surveys of this part of "La Plata" have been made by the English, and the navigation between the two cities is attended with no difficulties, provided due attention be paid to the tides and the lead. Vessels of eighteen feet draught may with safety reach the outer roads of Buenos Ayres—the anchorage of all men-of-war, and merchantmen drawing more than twelve feet. However, the distance of this anchorage from the city (four miles) renders the labor and expense of discharging cargo very great. Sometimes a detention of months at a time is caused by wind and weather.

The trade of Buenos Ayres should be confined to vessels not exceeding a draught of twelve feet, for such could enter the inner roads at ordinary high water, and no danger need be apprehended even should they take the bottom. The southeast winds,

which alone produce a sea at all to be apprehended, cause a rise of the water which increases its depth some six or eight feet; and the north wind, which diminishes the depth, will not produce a sea sufficient to cause a vessel to thump, although she may be resting on the bottom.

The explorations of the first settlers of La Plata were to the west, seeking the auriferous lands which the Indians described as in that direction, or to open a communication with the conquests of Pizarro and Almagro. The hope of ultimately effecting this great object undoubtedly influenced Mendoza, and subsequently De Garay, in selecting the site of Buenos Ayres. They were certainly not wholly influenced by considerations of its advantageous position as the great commercial city of the country, for a more thorough examination would have revealed to them a point on the Uruguay, about fifty miles distant, in every way adapted to the wants of an extended commerce; a port (Higueritas) at which vessels could ride safely at anchor, discharge and receive cargo at all times. We must, however, remember that in their wildest dreams of the future, even to the close of the eighteenth century, the colonists of La Plata could not have foreseen the trade of the world as it is now carried on, in ships and steamers of ten and twenty times greater tonnage than the small craft in which the Spanish mariners so boldly launched forth in unknown seas. To reach Higueritas, vessels must first pass the bar of San Juan, over which there will not be found more than fifteen feet water, unless when the southeast winds are blowing.

Notwithstanding the unfavorable position of Buenos Ayres as a commercial town—which, to some extent, would have been remedied by a more enterprising people—as the port of entry for the exports and imports of the whole Argentine Confederation, it has steadily progressed in population and commerce. Its importing and exporting trade is chiefly in the hands of foreigners, English, Americans, and French; and though the civil wars which have distracted the provinces since their independence have diminished the number of horned cattle, and the frequent blockades to which it has been subjected have equally interrupted all foreign importations, the resources of the interior provinces are so exhaustless, the foreign population of the city so large, that it seems only destined to encounter these disasters to recover from them with renewed energy. The rearing of sheep has vastly increased

the trade in wool, and the cultivation of wheat now falls little short of the home demand.

A minute description of Buenos Ayres would be a twice-told tale, but it is rapidly passing through changes which will in a few years make it one of the finest cities of the continent.

In extending it, successive generations have followed the plan prescribed by the laws of the Indies to all the first cities of Spanish America, and the Buenos Ayres of 1857 is only the city of De Garay embellished and extended; its rectangular streets command in every direction long vistas, and now embrace within their limits dwellings possessing all the elegancies and comforts that Europeans and Americans have made essentials in domestic architecture.

Few or no structures of great architectural merit strike the eye. unless we may except the churches and convents; the former, built principally by the Jesuits, though massive, add nothing by exterior decoration to the beauty of the city. The streets are well paved with granite, and the environs are pleasantly dotted with the *quintas* (country-houses) of the native and foreign merchants. The Porteños are extravagantly fond of flowers, and at these country residences indulge their taste by cultivating in perfection the gorgeous flora of tropical and temperate regions.

We also find many of the fruits and vegetables known to our horticulture, such as peaches, melons, tomatoes, asparagus, etc., grown with great success. The apples and pears of Montevideo are superior to those of Buenos Ayres, which must arise more from difference of soil than climatic influence, the regions in which these fruits are cultivated being very much in the same latitude; but the Banda Oriental is more rolling in its surface, and thus, having a drier soil, is of course better adapted to such cultivation.

The visitor of former years, who made his first appearance before the gay crowds of the Playa in a wagon of rough boards open at each end, driven by a half-naked native belaboring the poor beasts attached to the pole by a ring, which enabled him to literally put the "cart before the horse," can now reach the new mole in a boat, and ascend by flights of steps.

The old mode of landing arose from the formation of the shore in front of the city, a flat tufa bottom, which extends far out, and renders it at low water even impossible for boats to approach within a quarter of a mile of the Playa. Before the mole was constructed hundreds of carts might have been seen waiting out

in the waters of La Plata to convey passengers and freight on shore, and the shouts—indeed yells of the drivers, the plunging of the beasts up to their bellies in the water as each boat would approach, made a din and confusion to which the noisy rivalry of hackmen at our railway stations or wharves would be comparative quiet.

On entering the "outer roads" our attention was drawn to the blockading squadron, under the "Argentine" flag, composed of three steamers, a brig, a three-masted schooner, and several smaller vessels, co-operating with the besieging army of Urquiza.

As our steamer had only a draught of nine feet, we passed on, and rounding the northern end of the shoal which separates the "outer" from the "inner" roads, entered the latter, where lay the squadron of the "inside" party. This was inferior to that of the "outside" party, and found its protection more in the presence of foreign men-of-war and merchantmen than from the water-battery which guarded the inner anchorage. A marked consideration for the lives and property of foreigners characterized the course of Urquiza throughout this siege. His great object seemed to be to reduce the city by cutting off supplies, and thus avoid the fearful loss of life and destruction of property which a bombardment or assault would have caused.

Arrived at Buenos Ayres, I felt that we had reached the initial point of our work. My first duty was to visit Mr. Pendleton, of Virginia, the representative of our government near the Argentine Confederation, and the public authorities of the place. In co-operation with Mr. Schenck, of Ohio, our minister to Brazil (who had visited Buenos Ayres for the purpose), Mr. Pendleton was engaged in negotiating a treaty with the "Provisional Director." I informed them of my letters of credence to the President of Paraguay, and my joint commission from the President of the United States, wherein Mr. Pendleton, Mr. Schenck, and myself were authorized and empowered to conclude a "treaty of commerce" with that republic.

My letters of instructions invested me with full powers to act individually, should it not be proper or convenient for these gentlemen to absent themselves from Buenos Ayres, the scene, as we have shown, of important events at this time. Mr. Pendleton informed me that, having been invited by Sir Charles Hotham, the British minister at Buenos Ayres, to accompany him to Para-

guay, he had accepted the invitation, and availed himself of the opportunity, at the same time, with the ministers of England, France, and Sardinia, to negotiate and sign a treaty of navigation and commerce with President Lopez.

I was naturally anxious to see the distinguished author of a decree which had opened, for the first time, the valuable resources of so fruitful a region to the commerce of the world. Regarded only as a political move, it gave evidence of forecast and sagacity far in advance of the age of "his people;" added to this, it was a very essential point to obtain his good-will and favorable consideration for the objects of the expedition, so that no impediments should embarrass its progress while operating within the territory of the Argentine Confederation.

I expressed this wish to Mr. Pendleton, who immediately offered to call with me at San José de Flores, a quinta but a short distance beyond the suburbs of the city, where General Urquiza held his head-quarters.

Having obtained the necessary permission, granted only to the representatives of foreign powers, we started for San José, accompanied by Mr. Schenck. After riding through many barricaded streets, a ponderous gate swung back to give us egress; in going through which, we passed over a subterranean mine with train laid. The marks of war were upon the deserted and battered houses, which, standing between the line of the besieging army and city, had suffered in the skirmishing that occasionally took place. After riding a mile and a half in the country, we observed a group of officers lounging before a quinta. There was little of the pomp and circumstance of war about the quarters of Urquiza, and yet he commanded an effective army of gauchos. Climate and the habits of these soldiers rendered an elaborate commissariat entirely unnecessary; their food was beef, and beef only, without bread or vegetables; the forage of their horses the grass of the pampas. From the spirit with which many groups seemed to be amusing themselves, and the careless indifference of others lounging and sleeping on the ground, one might have supposed it the bivouac of a victorious army.

As we approached the quinta, several officers came forward to meet us, and said that our visit would be immediately announced to the general, who had not yet risen, having the night before given a ball, at which the dancing was kept up until daylight. While waiting for him, we sauntered through the grounds, where

we were joined by four other gentlemen, introduced as deputies from the Congress of Santa Fé, who had brought to the Provisional Director the Constitution which was to be submitted to the provinces for their adoption. It was modeled, they told us, upon that of the United States, save in a few points, where it would have been totally inoperative.

We were soon summoned to the presence of Urquiza, a stout, well-formed person, of medium height, with fine, piercing eyes, and frank countenance. His dignified but highly courteous manners at once impressed me favorably. If "without education," "a mere gaucho," as I was told by many, he has a natural intelligence and bold capacity which will enable him to administer with ability the responsible duties imposed on him by the people of the Argentine Confederation.

Our minister was unbounded in his expressions of admiration for this "man of the times;" an opinion which impressed me favorably, knowing his familiarity with the political events which had brought Urquiza into so distinguished a position before the world.

After some general conversation upon local questions, the subject of the expedition was introduced, and I was exceedingly gratified at the interest he expressed for its success. He seemed readily to comprehend the benefit which La Plata would derive from my anticipated surveys; and, as an evidence of his approval of the work, and of his good wishes for its success while operating within the jurisdiction of the Argentine states, he sent for his secretary, and directed him to make out the following instructions to the authorities of the Riverine Provinces:

[Translation.]

"Long live the Argentine Confederation."

"The Provisional Director of the Argentine Confederation."

"The American steamer of war Water Witch, from the United States of North America, having arrived in the River La Plata, and her captain, Thomas J. Page, having expressed his desire to navigate the rivers of the Argentine Confederation for scientific purposes, I enjoin and command the authorities of the Riverine Provinces that they will not present any impediments to his exploration, but afford him all the assistance he may need or require.

"JUSTO J. URQUIZA.

"*San José de Flores*, May 27, 1853."

The promptness with which this order was issued gave me an



JUSTO J. URQUIZA, PRESIDENT OF THE ARGENTINE CONFEDERATION.

insight into his quick and decisive manner of transacting business. In returning to the city, though no danger could be apprehended, as an act of courtesy he ordered an escort, commanded by one of his favorite officers, to accompany us beyond the lines of the besieging army.

I anticipated no detention in Buenos Ayres beyond what might be necessary in examining and procuring papers and documents which I deemed of importance toward facilitating our progress in the exploration of rivers over which, at different points, the neighboring nations—Brazil, the Argentine Confederation, Paraguay, Bolivia, and Uruguay—claimed jurisdiction, some concurrent, others exclusive; but an unbroken chain of circumstances

occurred to keep us for some months, during which the Water Witch was entirely diverted from the original objects of the expedition.

I appointed, at different times, a day for sailing, supposing her services would no longer be required; but before that day would arrive, unlooked-for emergencies arose, causing a still longer detention. I consoled myself with the reflection that she was engaged in important public service in facilitating treaty negotiations, which, as represented by Mr. Schenck to the State Department, "could not have been concluded without her."* There was no other vessel of war in port, and, from the state of contending parties, the services of one might be required at any time, to afford protection to American citizens.

At last an early day in July was fixed upon to begin our work, and, on informing General Urquiza of this determination, and offering to take charge of any communications he might desire to have delivered in our route, I received from him a letter of introduction to President Lopez, in which he alluded to the expedition as a work designed for scientific purposes, and commended it to his favorable consideration.

The officers looked forward with impatience to the commencement of the legitimate work of the expedition, and I had completed every arrangement for leaving Buenos Ayres, when I received the following letter from Mr. Pendleton:

"Legation of the United States,
Buenos Ayres, July 3d, 1853.

"My dear Sir,—I am aware of your great anxiety to proceed up the river in pursuance of the objects of the expedition under your command, and it is therefore with very great reluctance that I take leave to suggest to you

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* Extract of a dispatch from R. C. Schenck, Esq., to the Secretary of State:

"Legation of the United States,
Rio de Janeiro, August 23d, 1853.

"I desire also to express to you a very high sense of the important services rendered to us by Lieutenant Thomas J. Page, commanding the U. S. steamer 'Water Witch.' Without his various services and assistance in carrying General Urquiza and his staff, when they retired from Buenos Ayres; in conveying Mr. Pendleton and myself afterward to Entre Rios, and in other duties which he, with his ship, was able to perform, I hardly know how we could have succeeded in bringing our negotiations to so successful a conclusion. The presence of the 'Water Witch' for several weeks, at that particular juncture, was invaluable, and all her movements strikingly exemplified the necessity of having a vessel of her kind and class, on almost all occasions, in the River Plate."

that it is very desirable you should remain a few days longer in the port of Buenos Ayres.

"Events of importance, and of a decisive character, in respect to the condition of this city and province, are, in my opinion, at hand. No American man-of-war is in the river; Captain Downing, with the Jamestown, having suddenly, and without any correspondence or consultation with me on the subject, cleared out, as I have informally learned, to proceed to Rio Janeiro for the alleged purpose of having his ship caulked.

"I would not make this request but for the strongest conviction on my own part that the events referred to are almost certain, and for the farther fact that I am urged to do so by many American citizens resident in Buenos Ayres, and that I have also the concurrence of Mr. Schenck, who desires me to say so to you. JOHN S. PENDLETON.

"Capt. THOMAS J. PAGE, *commanding U. S. steamer Water Witch.*"

I felt it my duty to accede to this request, as the event alluded to in the letter of our Chargé was that some movement of the besieging army against the city was imminent; that foreigners, and all neutral persons, would be informed, in a day or two, of the intention of Urquiza to bombard the town; but an extraordinary occurrence saved Buenos Ayres from this infliction.

Our greatest amusement, after this new and unlooked-for aspect of affairs, was to watch the movements of the blockading squadron, and those of merchantmen seemingly running the blockade. Very perplexing were the efforts of the first in pursuing and never overtaking vessels deeply laden with flour and many other creature comforts, which would undoubtedly enrich the lucky merchant to whom they were consigned, and feed the hungry population whom Urquiza hoped to starve into terms. The skill was wonderful with which this squadron fired only to miss those running storehouses; and its manœuvres *not* to intercept ships—to which, for an ample "quid pro quo," permission had been already given to enter—most amusing.

There was treachery somewhere, but, before Urquiza was aware of it, all was consummated by the commander-in-chief; and in full view of the foreign, national, and commercial ships in the inner and outer roads, and an immense concourse of people evidently gathered on the Plaza to witness the scene, the squadron was delivered up to the "inside" party.

We at first watched the movements of these vessels with interest and excitement as they came in one after the other, expecting to witness a fair fight; but, as we saw the rigging manned, and

listened to the hearty cheers of both sides, as each steamer and vessel entered and anchored; when we had seen the officers go deliberately on shore, where they were received with the most enthusiastic demonstrations of joy, our contemptuous indignation may be imagined.

Public rumor pronounced this act the consummation of a bargain, and even went so far as to specify the sum of 13,000 ounces as the share of the commanding officer, with an equal amount divided among the officers and crews. For the truth of this I do not pretend to vouch. I give it as a rumor of the time, generally credited. "The game was well worth the candle." The players knew well that, without the co-operation of the blockading squadron, there could be no reduction of the city. By its defection, a wide gate was opened for the introduction of supplies.

Though a bombardment of Buenos Ayres had been considered imminent, it seems never to have been the intention of Urquiza to resort to so desperate a measure. By interrupting trade and cutting off supplies he had hoped to bring the authorities to terms.

A fair opportunity was now presented for the mediation of the representatives of foreign powers. It was offered and accepted by the belligerent parties, and ended by the withdrawal of the besieging army. Messrs. Pendleton and Schenck took an active part in the negotiations, thus terminating a civil contest which, to one side or the other, must ultimately have been highly disastrous.

A little before the cessation of hostilities, our representatives, at the same time with those of England and France, concluded a treaty relating especially to the navigation of the Martin Garcia Channel, through which the Uruguay and main branches of the Parana empty into La Plata. It was supposed to command effectually the entrance of the upper waters, all vessels of more than eight feet draught being obliged to pass within pistol-shot of its shore.*

This treaty guaranteed the free navigation of the channel to all foreign flags, the governments who were parties to it agreeing to use their influence to prevent the occupation or possession of this

* Article 5 of treaty for the free navigation of the Rivers Parana and Uruguay, concluded on the 13th July, 1853:

"The high contracting parties, considering that the island of Martin Garcia may, from its position, embarrass and impede the free navigation of the confluents of the River Plate, agree to use their influence to prevent the possession of the said island from being retained or held by any state of the River Plate or its confluents which shall not have given its adhesion to the principle of their free navigation.

island by any nation that should attempt to close the navigation. At the time of this treaty it was in possession of the Argentine forces, but, by the defection of their squadron, jurisdiction over it passed into the hands of Buenos Ayres. The surveys of the Water Witch subsequently disclosed a channel on the other side of a greater depth by two feet, and so distant as to lessen its importance as a military position. The new channel will also divide the jurisdiction over the passage between Uruguay and Buenos Ayres so long as the island shall be retained by the latter: a possession acquiesced in by the former, but never conceded as a right.

The entire trade of those countries, save that which might be carried on in vessels of small draught by Las Palmas, must pass through one or the other, either or both of which might easily be blockaded by a very small naval force in co-operation with batteries on the island. The importance of this new channel was strikingly exemplified in a correspondence between the ministers of Brazil and the government of Buenos Ayres a short time before its discovery.

In February, 1855, a large Brazilian squadron passed through the channel of Martin Garcia on its way to Paraguay. Buenos Ayres complained of this as an infringement of her sovereignty, permission not having been obtained for the passage of these ships; for, upon the ground of holding territory on both sides of the channel, Martin Garcia being on the east, she based her right to prohibit the passage of a foreign fleet. Whether, under existing treaties, she possessed this right, is a question to be settled by diplomatists; but by the discovery of the new channel, even should the justice of her jurisdiction over Martin Garcia be fully recognized, it would avail her nothing more than closing the old highway, leaving a better passage, over which, at most, she could exercise but a concurrent power.

An acquaintance with the unbounded resources of the basin of La Plata can alone impress us with the importance of maintaining the free navigation of its interior waters to all flags, and the treaties between Urquiza, England, France, and the United States were only a consummation of the decree of August, 1852, declaratory of this fact.

Buenos Ayres will scarcely be permitted by the upper republics to renew the old exploded system of closing the rivers; but she is doubtless annoyed that so enlightened an act should have

been among the first of Urquiza's administration, and is consequently disposed to regard it as one of usurpation. She surely can not be so blind to her own interests as not to discover that it is freighted with immense benefits to herself. Her geographical position at the very portal of these tributaries will enable her, with her present population and capital, not only to maintain the ascendency she has always held as the emporium of La Plata, but to become one of the greatest cities of the American continent.

The detention of the Water Witch was not at an end with the siege of Buenos Ayres; her presence was deemed essential in facilitating and carrying out some diplomatic movements to which the new aspect of political affairs had given rise; and though the connection between these duties and those prescribed by my letter of instructions from the Secretary of the Navy may not appear at first sight, the sequel will show that the service was not only one of deep interest to our government and people, by aiding in establishing a foundation on which individual rights in connection with commercial enterprises might be maintained, but at the moment and for all time to come it created a deep feeling of respect on the part of the people of the Argentine Confederation for the flag borne by the Water Witch. It subsequently facilitated the work of the expedition, and caused the officers to be received within the Confederation with special marks of respect and hospitality whenever they were brought in contact with the authorities or people of the country.

Before the close of the negotiations which resulted in an adjustment of the difficulties between the contending parties, besiegers and besieged, I received the subjoined note from Messrs. Pendleton and Schenck:

"Legation of the United States,
Buenos Ayres, July 10th, 1853.

"SIR,—We are engaged in some confidential negotiations at present which are likely to result in an accommodation of the difficulties existing at Buenos Ayres between the parties to the civil war. There is no absolute certainty as to the event, but there is a sufficient probability of success to justify us in requesting that you will not leave the place for a few days. We make this request because it is a part of the present plan that the foreign men-of-war in port may convey the Provisional Director and his escort to the neighboring town of Gualaguaychu.

"As important objects connected with our duty here are likely to be attained more readily by the participation of the United States flag in this

transaction, we think it very important you should remain, there being no other United States vessel in port.

"ROBERT C. SCHENCK,
"JOHN S. PENDLETON.

"Capt. THOMAS J. PAGE, *United States Steamer Water Witch.*"

I assented to this request, and the Water Witch participated with two of her Britannic majesty's steamers in the conveyance of the Provisional Director and his suite to the province of Entre Rios.

The representative of France likewise offered the "Provisional Director" the use of a national vessel, but, on repairing with the others to Palermo, the point of embarkation, the French steamer, being totally unprepared for the service, did not join the escort. The duty consequently devolved on H. B. M. steamers Trident, Lieutenant Commanding Harvey, Locust, Lieutenant Day, and the U. S. steamer Water Witch. Only the staff, a few civil officers who were with General Urquiza, and such of the forces as had formed his escort, in all four hundred persons, were conveyed by these vessels, while the main body of the army marched by land to their respective destinations.

The "Provisional Director" selected the Water Witch for the passage of himself and suite.

We repaired at the appointed time to the anchorage off Palermo, the celebrated and once beautiful residence of the Dictator Rosas and his fair daughter "Manuelita." It is about two miles north of the city, and is now occupied as a barrack for soldiers. Slightly elevated above the river, nature had done nothing for Palermo, but the taste and wealth of Rosas had made it a paradise. The dictator was capable of one tender emotion, love for his fair and only child, and in seeking to manifest this affection, a sense of the beautiful in art and nature seems to have been awakened in the breast of this *hard man.* Nothing was spared that could adorn either dwelling or grounds. There were extensive groves of orange-trees, and some idea of the labor and expense bestowed on this domain may be gathered from the fact that hundreds of soldiers cleaned their foliage leaf by leaf. The road leading to the city was made with care, and being adorned and shaded by large trees, had become the fashionable afternoon drive. Some of the former visitors to Palermo assured me that the graceful manners of the Señorita Manuelita lent a charm to this residence which neither art nor the lavished money of Rosas could ever bestow.

Not only the gay and fashionable claimed her society as that of an accomplished and elegant person, but some of the broken-hearted victims of Rosas' policy sought her protection and intercession, as one endowed with all the tenderest and noblest impulses of a woman's character.

On the 13th of July the Water Witch anchored off Palermo, and on the same day Urquiza, accompanied by Mr. Pendleton, came on board. He had with him a noble dog, and I was amused at his solicitude for the safe embarkation of this animal, which he saw in the boat before he would himself leave the shore. He had been his constant companion for many years, and the stories of his sagacity and fidelity were really marvelous.

Immediately preceding the arrival of the general, under a salute from the English and French ships, his suite, composed of military and civil officers, in all forty-five persons, with thirty-three soldiers, had embarked on board the Water Witch. The following day the remainder of the party was conveyed on board the English steamers.

Intending to land Mr. Pendleton and receive Sir Charles Hotham, the British minister, who desired to visit General Urquiza, I got under way, and stood for the inner anchorage off the city, as the speediest means of accomplishing both objects. The "Provisional Director" sat on the quarter-deck, immovable as a statue: he surveyed with impassible countenance the people, who, having followed the movements of the Water Witch, crowded the Playa, house-tops, and the shores of the river, to obtain a glimpse of him. In "rounding to" for the purpose of standing out of the "Roads," we passed in full view of the "naval" force which had distinguished itself in so extraordinary a manner. We can not but suppose that his breast was full of honest indignation, but not the movement of a muscle betrayed it.

The English steamers had stood on their way from Palermo to the entrance of the Martin Garcia Channel, but ere they reached it the Water Witch came up with them, and led the way into the Uruguay. We were bound for the port of Gualaguaychu, or the nearest landing we could make on the river to General Urquiza's "estancia."

I can well imagine that the deck of the Water Witch presented the appearance of a California steamer when the gold fever was at its height. Before we had become "shaken down," it seemed impossible that her expansive power could meet the requirements

of her human freight. My little cabin had been arranged for the "Provisional Director," but, with becoming gallantry, he took a berth in the ward-room, yielding the claim of rank to the prerogative of "woman's rights." The wife of one of his generals, with her daughter, had for some months shared the dangers and discomforts of the besieging army, and they now sought the protection of our flag. The cabin was a wee bit of a "sailor's snug harbor." No crinolined lady could have found room in it for the amplitude of her skirts, but Senora ——— and her daughter, during the five days they were with us, made themselves comfortable within its narrow limits. The officers cordially united with me in yielding their berths to our guests; but so limited were the accommodations of the Water Witch, that the mess-table presented a continuous scene of "fire and fall back," and, though somewhat worsted in the attack, maintained its ground, and stood ready to meet each charge.

I was much struck with General Urquiza's extreme temperance in eating and drinking, a habit acquired probably in his military career. At an early hour a negro servant* took him his *mate*, and at noon he dined, using water as his only beverage. The remainder of the day he ate nothing. Our guests, notwithstanding the crowded state of the boat, seemed to enjoy themselves, and on the fifth day from their reception on board we reached the anchorage for Gualaguaychu, the pilot assuring us that beyond this we could not pass. Subsequently, when our surveys extended to this river, I discovered that we could have ascended to Concepcion del Uruguay, where General Urquiza wished to land.

With several of the officers I accompanied him on shore, his suite and escort having been landed the day before. On leaving the steamer, under a salute from the Locust, we were joined by Captain Day, and the Argentine flag was hauled down from the mast-head of the Water Witch. I explained to the "Provisional Director" my reason for not saluting—the fear of injury to the chronometers, upon which the success of our future work depended.

The whole party were safely landed, and the general, in true Spanish style, embraced me in saying farewell, and begged that I would always consider him my friend. His officers also left us with many expressions of gratitude, and I had the satisfaction to

* This man had for many years been the body-servant of Urquiza, and at the battle of Monte Caseros came well-nigh capturing Rosas.

know that every effort had been made for their comfort while the recipients of our country's hospitalities.

The steamer Trident had not arrived, which (anticipating no difficulty) we attributed to her being a "slow craft." By the time we returned to the Water Witch it was quite dark, and as our pilot was rather inexperienced, and the navigation of this part of the Uruguay intricate, I determined to remain at anchor until daylight; however, about ten o'clock, I had a visit from Captain Day, who had heard from the "Trident:" she was "hard and fast" aground, and he requested me to accompany him, and give her immediate assistance. My pilot was unwilling to take the responsibility of running the steamer at night; but, as Captain Day expressed confidence in his man, I told him to take the lead, and I would follow.

We agreed upon a signal — a gun — should the Locust run aground; and, with this understanding, we moved on swimmingly for some time, congratulating ourselves that the worst had been passed, when the concerted signal was made. On slowly coming up to the Locust, we discovered that she was aground.

A hawser was made fast to her, taken on board the Water Witch, and with a few revolutions of the engine she was again afloat, when we proceeded on our way with the same arrangement of signals.

A very few minutes elapsed when the gun warned us that she was again aground. An effort similar to the first was made to give her relief, but to no purpose; under a full pressure of steam, she had driven her bows on a sand-bank. We came to anchor, and our men turned in for a few hours' rest.

In the morning we left the "Locust" to wait for a rise of the tide, and proceeded to the relief of the "Trident." After making an ineffectual pull, we relieved her of as many of the Argentine soldiers as could be received on the deck of the Water Witch, and landed them at the same point where General Urquiza disembarked.

Again we returned to the relief of the two steamers. Finding the tide rising, we went first to the "Trident," and commenced the process of tugging; in a short time she was afloat, and proceeded on her course to land the remainder of the troops. The Locust was now free; and, congratulating our friends upon their release, we made all speed on our return to Buenos Ayres.

It gave me pleasure to be able to render even these small offices

to our brother sailors of Old England; for, in the various parts of the world where my professional duties have called me, her representatives, whether diplomatic, naval, or military, have uniformly manifested respect for our flag, and extended to myself personally every courtesy as an officer of the United States Navy.

CHAPTER III.

Letter from Mr. Schenck.—Visit to the Estancia of General Urquiza.—Framing of the Treaty.—Marking Cattle.—Farm and Residence of the Director.—Ostriches, Partridges, and Deer: Mode of hunting them.—Horses.—Return to Buenos Ayres.—The Galera.—Reception at Concepcion.—The College.—The Ball.—Native Grace of Spanish American Women.—Leave Concepcion.—The Water Witch.—Coaling at Buenos Ayres.—Final Departure for the Ascent of the River.

UPON our arrival at Buenos Ayres I found another letter awaiting me from Messrs. Pendleton and Schenck. It ran as follows:

"Legation of the United States,
Buenos Ayres, July 22d, 1853.

"To Captain THOMAS J. PAGE, *U. S. Steamer Water Witch.*

"DEAR SIR,—We wish very much that you would take us to-morrow to Gualaguaychu, or 'Concepcion del Uruguay.' There is no other mode of conveyance by which it is possible for us to accomplish a highly important public object, no less than the making of a treaty of friendship and commerce, which, if made, will fully accomplish the purposes of the special mission to the Argentine States.

"It is indispensable that one of us—Mr. Schenck—leave for Rio in the packet to sail ten days hence. With the aid of the Water Witch, we think the business may be done. Without it, there is no possibility of our co-operation in this work. Very respectfully, &c.,

"ROBERT C. SCHENCK,
"JOHN S. PENDLETON."

I could not hesitate as to the response, and early the following morning we were steaming for Gualaguaychu. In two days we reached the nearest point to which the Water Witch could approach, and anchored off the mouth of a river of the same name. I accompanied the ministers in a boat to the town, a distance of eighteen miles.

Señores Carill and Gorostiaga, appointed by General Urquiza as negotiators on his part, were awaiting the arrival of our ministers. Under instructions from the Provisional Director, handsome

preparations had been made for their reception and entertainment at the government house.

Accompanied by the Argentine ministers, we started the following morning for the *estancia** of Urquiza. Our conveyance was a *galera*, a vehicle not unlike an omnibus, and capable of holding comfortably ten or twelve persons; the door behind; it was drawn by four horses, each mounted by a gaucho, and at a gallop we passed through a gently undulating country, clear of wood save on the margin of the river, but covered with a luxuriant growth of grass. After traveling about fifty miles, the dwelling of Urquiza appeared in sight.

Throughout the whole distance since leaving Gualaguaychu we had been driving through his estancia, which extended some ten miles farther, embracing in one unbroken section of Entre Rios several hundred square miles. The soil is highly fertile, and the cattle, horses, mules, and sheep are superior to those of any other province in the Confederation. A part of this estate was tenanted out, and is appropriated almost exclusively to grazing; but a fine field of wheat and thriving nursery of fruit-trees proved its equal adaptation to agriculture.

On reaching the house, a cordial reception awaited us from the general, who came forward as we descended from the galera, and received our party with many kind and courteous expressions of welcome. He knew that our time was limited, and instructed his ministers to use all possible dispatch. The work was conducted in good faith, with an eye to the benefit of both countries, and ended in the conclusion of a "treaty of friendship and commerce," signed immediately by the "Provisional Director," and since ratified by our government.

While the treaty was being copied, we were much amused and interested by visits to various departments of this great estate. The day after our arrival, the general proposed that we should ride out and see the process of marking cattle.

Mounted on beautiful horses, a gallop of a few miles brought us in sight of a large herd, around which were stationed mounted gauchos, each equipped with lasso and bolas.† The marking was

* A cattle-farm, but not exclusively so, where there is some cultivation of the soil.

† The *lasso* is of platted hide-rope, about sixty feet in length, and three quarters of an inch in diameter, attached to the *cincha*, or surcingle of the *recado* or saddle at one end, and has an iron ring in the other, through which a noose is formed when it is to be thrown.

The "*bolas*" is of two kinds: that used for catching cattle consists of three



MARKING CATTLE.

effected by branding with a hot iron upon the rump of an animal a letter or character, which made it the indisputable property of a certain estanciero. These are registered in each district, with the names of the owners attached.

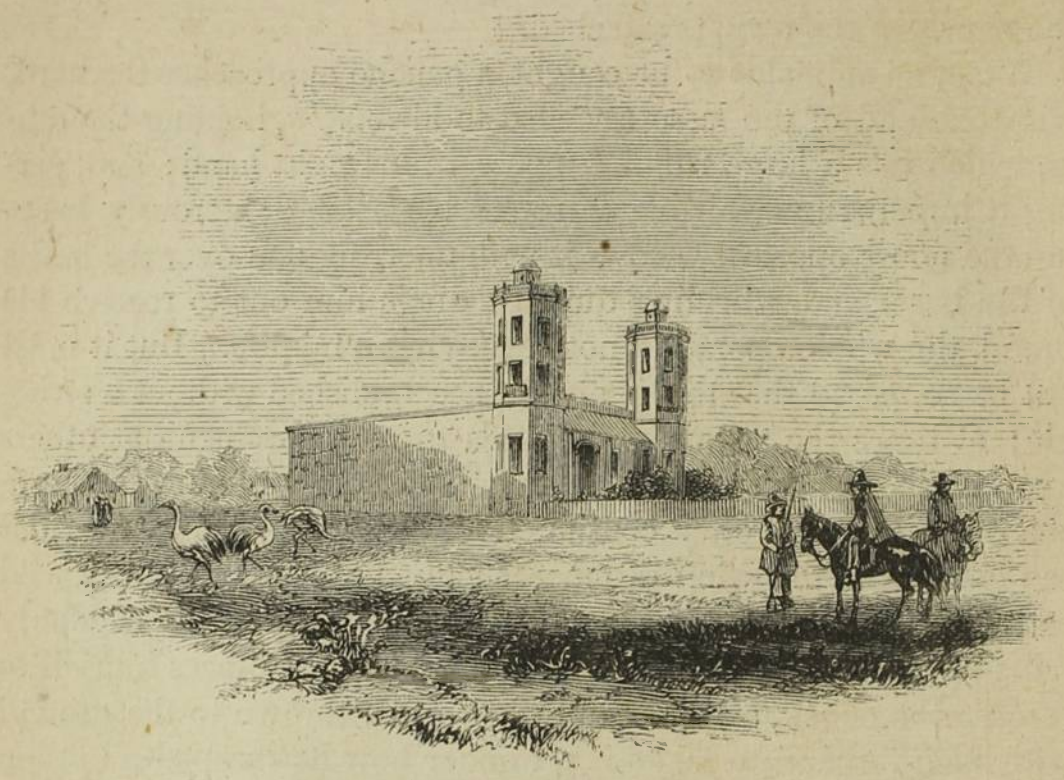
When an animal is to be caught, a gaucho approaches the herd, with one end of the lasso attached to his *cincha*, holding the other, which has a large running noose, in his right hand; and, giving it impetus by whirling it round his head, dexterously keeping the noose open, he throws it with unerring aim over the horns of the beast, and, wheeling quickly, drags him out to receive his brand, the whole operation not occupying a minute. But it must not be supposed that this is always accomplished without a struggle; at times the "marking" affords great amusement, at others excitement and even danger. A bullock escapes from the herd, chase is given, and often continued for some time before the rider can get within throwing distance, such is the fleetness of the wild cattle of the country. As the gaucho casts the lasso, he suddenly reins up his horse, while the animal instinctively braces himself to receive the shock, and the bullock is often thrown to the ground with such force as to make it a wonder how he escaped a broken neck. Then, again, on finding himself a prisoner, he will run round and round, dash first to one side, then to the other, plow up the ground, or turn and furiously attack the pursuer, who, on such occasions, never parts with his lasso, which he would inevitably lose if detached from his cincha; and as he can not disengage it from the horns of the animal, he manœuvres his horse with inconceivable skill, watching, following, and anticipating every movement of his prisoner with the rapidity of lightning, until relieved from his perilous position by a brother gaucho, who throws the lasso round the hind legs of the beast.

After being greatly amused with the "marking," we rode over to see the general's field of luxuriant wheat, then visited his nursery of choice fruits, and a garden where many vegetables known to our markets were growing in perfection.

His dwelling is built of stone, and in the massive style of the

wooden balls, or stones, about three inches in diameter, covered with raw hide, each joined to the other in a common centre by a thong of the same of about three feet in length. The other is of two balls, smaller, and is used to catch ostriches. The gaucho holds the smallest ball in his right hand, and, giving the other two a rapidly whirling movement, throws them with great velocity and unerring aim at the legs of the animal; and the more he struggles to extricate himself, the more he becomes entangled.

houses of Buenos Ayres. It is of one story, forms a quadrangle of about eighty feet, and contains eight or ten spacious and lofty



SAN JOSÉ, THE ESTANCIA OF URQUIZA.

rooms: from the roof rose two handsome turrets, commanding extensive views of his estancia. In every direction, his own lands extended far beyond the horizon; and this was only one of several estates. Within a few miles of his house he had forbidden his grounds to all sportsmen; consequently, herds of deer, ostriches, and innumerable partridges, large and small, were seen in every direction. I counted as many as fifty ostriches in a flock, some of them in the court of the dwelling, and as tame as barn-door fowls. They are caught in great numbers; the ostrich with the bolas, the small partridge with the noose, and the larger species with dogs. The small partridge crouches close to the ground; a man on horseback, with a long stick, at the end of which is a noose, approaches, and rides in a circle round the frightened bird. As if under the influence of a spell, or charmed by the man's eye, it sits quietly while the rider gradually contracts the circle, until near enough to slip the noose over its head.

The large partridge usually makes two, but occasionally three flights. On first rising it is pursued at full speed by the mounted gaucho and his dog; for, while on the wing, there is nothing to hide it from the eye of the sportsman; and scarcely has it touched



THE GALERA.

the earth, when again it is "put up," and, flying until exhausted, it conceals itself in the long grass, where it is ferreted out by the dog.

Some idea of the income of such an estancia as Urquiza's may be formed when I state that upon this of San José there were 70,000 sheep, 40,000 head of cattle, and 2000 horses. Among the latter were several *Manadas*, of a beautiful mouse color, called *Lobunos*, or "otter-like;" others of *Overas*, or "piebald." These studs were carefully kept apart, to avoid any mingling of color or characteristic. I can not imagine a more beautiful sight than the herds of these fine animals coursing over the rich lands of San José. The value of each in the United States would reach some hundreds of dollars; here one could be bought for sixteen.

On the third day after our arrival at San José, the treaty having been concluded and signed by the "Provisional Director," we prepared for our return to Buenos Ayres. The promptness and good faith shown in this negotiation are worthy of praise, when we remember that diplomacy is the forte of the Spanish American, and that one of their marked characteristics is to postpone for the morrow that which should be done to-day.*

General Urquiza earnestly desired that in our return route we would stop a night at Concepcion del Uruguay, the place of his birth and early life, assuring us that, though the distance was greater, we could spend a night at Concepcion, and yet reach Gualaguaychu at the time appointed for our embarkation. He had well calculated the speed of his own horses, and his assurance was realized in our arrival at the appointed time.

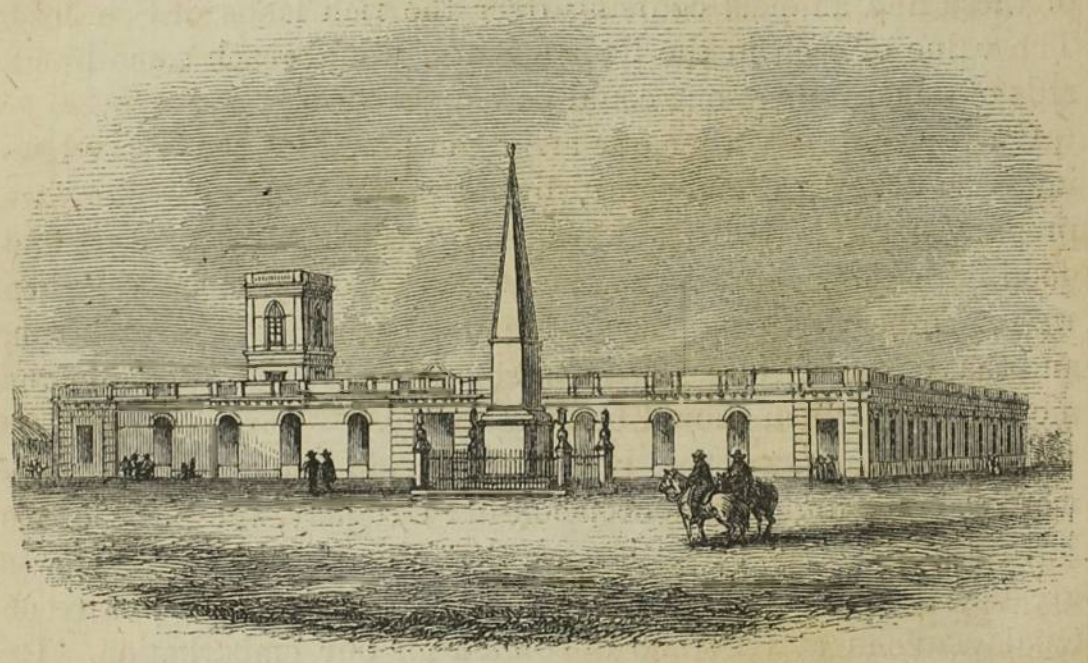
A *galera*, drawn by four beautiful mouse-colored horses, each mounted by a gaucho in full costume, was brought to the door, its lockers abundantly supplied with wines and other creature comforts. With mingled feelings of respect and esteem, we bade adieu to our distinguished host, and, accompanied by Señores Carill and Grostiaga, and escorted by a son of General Urquiza on horseback, we moved rapidly over the undulating pampa, stopping only to change horses from the herd of "lobunos" driven for this purpose ahead of us.

On our arrival at Concepcion, a pretty town of about 4000 inhabitants, on the Uruguay River, and distant about eighteen miles from San José, we were met by the municipal authorities and principal inhabitants, and conducted to a spacious house prepared

* See Appendix C and D.

for our reception, over which was immediately hoisted the American flag. As we entered, a band of music in the court played our national air, and continued afterward with operatic pieces in admirable style. In short, every preparation had been made to give us a distinguished reception. We accepted these honors in the spirit that dictated them, as a tribute of respect and amity for the United States.

Our first visit was to the College, established by Urquiza, where youths are educated at the expense of the province. The build-



COLLEGE OF CONCEPCION.

ing is handsome and commodious, and the benefits of this institution are shared without partiality by rich and poor; indeed, the latter are more highly its recipients, for, in addition to a liberal education, they receive gratis both food and clothing. The president of the institution is Mr. La Roque, a Parisian, and the Professor of English Mr. Clark, a graduate of an English college. These gentlemen, with ability, perseverance, and untiring zeal, give their best energies to the work, and would, from their personal standing alone, offer a guarantee for its success, did we not know that their exertions are seconded by other professors, well qualified for their respective posts. It is now considered the first institution of the Confederation, that of Cordova, formerly so celebrated, having dwindled to a mere provincial school.

We were conducted through the buildings, and saw enough to convince us that the arrangements and system were as admirable

for the moral and physical as for the mental training of the youth —indeed, quite equal to some of the institutions of our own country. The philosophical and mathematical apparatus seemed full and complete, and the illustrations of the various mechanical powers excellent. The higher branches of mathematics are carefully taught, together with the classics, English and French, and all those branches with us comprehended in the expression "good English education." Attached to the college is a primary school.

The Secretary of the Navy had permitted my second son, a youth twelve years old, to accompany the expedition. I afterward placed him at this college, and was gratified with his progress.

The benefits of a liberal education are now eagerly sought by all classes, and so numerous are the applications for admission to this establishment, which has ample accommodations for 160 pupils, that large additions will probably be made to its buildings, or similar institutions may be opened in other provinces. Music is one of the branches taught, and we were both surprised and delighted with the performances of a band of forty boys. Among them was a youth whose genius was extraordinary. He composed with great facility, played upon sixteen instruments, and yet he had never been out of the province of Entre Rios.

This institution will ever remain a noble monument of the enlightened views of Urquiza. In educating its youth, he is giving stability to the government of a country hitherto at the mercy of each military chieftain who in turn aspired to rule. I must not omit to mention one fact communicated to me by the president of the college, which reflects high honor on its founder. Occasionally the funds of the institution are not adequate to its demands; and when its wants have been made known to General Urquiza, he has invariably, from his private resources, made ample provision to meet them.

On returning to the house arranged for our reception, we found a sumptuous dinner, with abundance of fine wines and cigars, awaiting us. This was followed by a ball, at which was assembled all the beauty of the place. The dress of the fair señoritas showed that the prohibitory edicts of Rosas, however severely they may have operated upon commerce, had availed nothing in secluding them from a knowledge of the fashions.

The Spanish American women have little knowledge of the conventionalities of other countries, but they are well bred and handsome. With indescribable grace and precision, these ladies

of Concepcion (many of whom had never been out of Entre Rios) went through all the fashionable dances of the day, varying them two or three times in the course of the evening by the Spanish contra-dance.

It was expected that we should be not only spectators, but active participators in the festivities of the evening. Not to dance, and dance well, would expose us to the suspicion of neglected education. As the diplomatic and naval representatives of the great republic of the North, it was necessary to avoid such an imputation. We made the effort, though we feared in doing so that what might have been a conjecture would remain among the fair women of Entre Rios "a fixed fact."

We left Concepcion del Uruguay at an early hour the following morning, and, at full gallop, continued our journey in the galera. Our way still lay through the estancia of General Urquiza, but in a different direction from that by which we entered. The character of the country was materially the same, herds of deer, flocks of ostriches, and innumerable partridges alone breaking the monotony of the pampa scenery.

Arrived at Gualaguaychu, we lost no time in procuring a sail-boat, hoping to reach the Water Witch that night; but, on getting to the mouth of the river, we found the wind too high to attempt a "dead beat," our steamer being near the opposite shore of the Banda Oriental,* distant about six miles.

It was the last of July, the second winter month of this latitude; strong south winds made the night really cold, and our situation in the open boat for many hours was not only one of discomfort, but positive suffering. On reaching the Water Witch the next morning, and finding all ready, we weighed anchor for Buenos Ayres, with the earnest hope that nothing would again occur to divert us from the objects of the expedition.

The Water Witch was nominally one of the vessels of the squadron on the Brazil station, and, though really detached for specific purposes, it has been shown that circumstances made it imperative that she should perform the duties of one in the absence of all other vessels, and in cases where public interests were deeply involved. Mr. Kennedy, then Secretary of the Navy, with enlightened views, and a liberal exercise of the authority vested in him, detailed her for the scientific work on which she

* The East Side, another name for the State of Uruguay.

was about to enter with simply such additions to her ordinary outfit as a few books, instruments, and materials for the preservation of specimens of natural history, which could be supplied from the contingent fund of the department, in the absence of any appropriation by Congress. With no scientific corps on board, and only one or two officers over and above her ordinary complement, in a few weeks after she was launched from the navy yard of Washington we were steaming for La Plata.

On reaching Buenos Ayres, I learned from the "consul" the arrival at Montevideo of a cargo of coal, sent out by the government for the use of the expedition, and at once proceeded to that place. We entered the harbor in the midst of a violent pampero, which continued for some days. After the storm, we took on board as much coal as the steamer could carry, deposited a small quantity on shore, and made arrangements for the transportation of the remainder to some point on the Parana. The freight demanded for this latter service was so exorbitant—$12 per ton—that I found it cheaper to purchase a hulk of sufficient capacity to receive it all. Taking this in tow, I afterward established it as a depôt at the town of La Paz, in Entre Rios, distant about four hundred miles above Martin Garcia. This we found to be a convenient point for coaling, either in ascending or descending the river.

After a diversion of nearly four months from the legitimate work of the expedition, I now, for the first time, realized that we were fairly under way for the scene of our labors. I had the satisfaction of knowing that the time had been usefully spent in forwarding the diplomatic aims of the government, and in protecting the interests of American citizens.

CHAPTER IV.

Chronometers.—Determinations of Latitude and Longitude.—Construction of Charts.—Delta of the Parana.—Diamante.—Fruits.—Oranges.—Peaches.—Beautiful Scenery.—Mouths of the Parana.—The Parbon.—The Gualaguay.—The Repunte.—Periodical Risings of Water.—Islands.—The Seibo and Sause.—San Pedro.—Obligardo.—Passage forced by the English and French.—Island Formations.—Variations of Channel.—Pilots.—Estancieros.—San Nicholas.—Rosario.—Its commercial Importance.—Advantages over Buenos Ayres.—Winds.—Letter of R. B. Forbes, Esq.—Banks of the River.—Convent of San Lorenzo.—The Tercero.—Mr. Campbell's Survey.—The Chaco Hills.—Scenery.—Diamante.—Ferries.—Trees.—The Algarroba and Espinilla.

TAKING our departure from Buenos Ayres, the point to which all determinations of longitude were to be referred, we passed the island of Martin Garcia September 1st, 1853. The rates of the chronometers had been repeatedly verified, and they were found to be uniform in every instance. The work was consequently begun with every confidence in the excellence of the instruments. These chronometers, five in number, had been selected by the Superintendent of the Naval Observatory for this special service.

That the character of the work in its explorations and surveys may be fully understood, even by those unpracticed in such operations, it may be proper to explain somewhat in detail the manner in which it was conducted.

That portion of it under the head of "Surveys," which may be seen on the map, is established on points of latitude and longitude determined with care by officers who were competent observers, and with nicely-adjusted instruments. The latitude of these points is derived from observations of north and south stars on the meridian, their longitude by chronometer from stars east and west of the meridian and from the altitude of the sun, and the variation of the compass from observations of the sun. These were made with the sextant and artificial horizon. Those made during the day were always taken on shore; but at night, so perfectly motionless was the steamer that no difficulty was experienced in observing the stars with the artificial horizon on the hurricane-deck. The place of anchorage was thus determined every night, whensoever the weather would allow; and none of the principal points were passed without coming to anchor, and obtaining satisfactory re-

sults for the establishment of their geographical position and variation of the compass. We arrived at the distances between the points thus determined by reference to a uniform number of revolutions of the engine, which, in a given time, had been ascertained to be equal, or nearly so, to a certain distance. Any erroneous estimate that had been made could not extend beyond the point of observation, so that there was at all times a check upon any error of judgment or irregularity in the speed of the steamer.

That the charts should give as faithful a representation of the rivers and adjacent country as the character of the work would admit of, there were at all times, when the steamer was under way, two officers engaged in it exclusive of myself.

An elevated position on the hurricane-deck, which gave an unobstructed view, was selected for this purpose. One of the observers, with the chart-paper before him, projected the course and distance, the width and depth of the river, delineating the topography on either bank, while the other recorded the same in his note-book, together with all such remarks as would illustrate more clearly any peculiar characteristic, such as the growth on the banks, whether suitable for steamers or for other purposes. The soundings were made at intervals of five minutes when in deep water, but when in shoal as often as they could be had. The velocity of the current, which varied with the locality, was repeatedly ascertained.

I have before alluded to the island of Martin Garcia as a military position of some importance, from its commanding what was supposed to be the most considerable channel of communication between the waters of the Parana and La Plata. It is of granitic formation, and occupies a position at the head of "La Plata" where this river is twenty-five miles wide, and yet at its narrowest point. Here also it receives its two great affluents, the Parana and Uruguay, their waters uniting about twenty-four miles above this island, and retaining the name of the latter until lost in that of "La Plata."

The Parana is the more important of the two, and possesses already a far more extended navigation, and affluents that present a vast field for exploration. We first entered its waters through the main branch, "Parana Guazu."

All vessels "bound up" either the Parana or Uruguay by this channel must pass within range of "Martin Garcia." Exclusive of this and the one of greater depth subsequently revealed by the

surveys of the Water Witch, there are two other branches, the "Brasso Bravo" and "Brasso Largo," farther north, through which this river flows into the Uruguay, and others of less importance to navigation, through which it communicates directly with La Plata. The principal, and only one of these latter worthy of note, and which will become, when its entrance shall be better known, generally used by vessels of six and seven feet draught, is the passage of Las Palmas, the branch through which Sebastian Cabot entered the waters of the Parana, and to which he gave the name it now bears.

A delta of vast extent is formed by the various branches of this river. Its apex, at the town of Diamante in Entre Rios, is distant from its base in a right line one hundred and seventy-eight miles, while its base, the line on which these branches empty into the River La Plata and Uruguay, is about forty miles in extent.

Diamante is assumed as the apex of this delta, because at that point, in ascending, we find, for the first time, by the approach of the firm, elevated lands, the width of the river contracted to one mile. To give a minute description of the innumerable small branches up to this apex, to follow them through their windings, would tend only to perplex the reader. They nevertheless serve a useful purpose by giving access to a labyrinth of islands, the wild fruits and charcoal of which lead to quite an extensive trade with Buenos Ayres.

During the season, the fruiterers lay their barks against the banks, and load from the overhanging peach and orange trees. This latter fruit is bitter, and used only for preserving, or making a very popular drink, which, in the course of time, becomes pleasantly acidulated.

The peaches are of excellent quality, and constitute a large portion of the supply of the Buenos Ayrean market. These fruits are not found on the low and frequently submerged islands which border the main channel-way—the Parana Guazu—but grow abundantly upon those in the vicinity of the pass of Las Palmas, and near the various other branches used only by small vessels.

In the province of Buenos Ayres the peach is much cultivated for fire-wood, and a tree of three years yields no indifferent supply of both fruit and fuel. Its growth in the wild and free islands of the Parana, and the perfection of its fruit without culture, are facts too extraordinary not to impress a stranger, who naturally asks the origin of trees well known not to be indigenous. My inquiries

on this point were invariably answered by *Quien sabe?*—"Who knows?" Some of the more intelligent natives trace them to the forecast of the Jesuits; others to the boatmen who, prior to the Jesuits, frequented these islands, and may, without purpose, have cast around the seeds. Again, their propagation is ascribed to the migration of birds and beasts from the main land. This we doubt, for among the many isles of the Parana delta there are others of the same formation and age—judging from their strata—on which no fruits are to be found. So vast is the yield of these trees, that Buenos Ayres is not only supplied with fresh fruit during the season, but quantities are dried. Some enterprising citizens have also manufactured from them brandy of excellent quality; but this, like many other industrial projects in that country, has not been continued with perseverance or energy. When improved by grafting, inoculation, or the smallest degree of culture, the fruit matures to very great perfection.

Toward the close of our work, these branches of the Parana became the scene of operations during fruit season. A more enchanting spectacle than was presented at that time by these islands can scarcely be imagined. Poets would have reveled in it as a scene of paradisiacal beauty. The lower banks were fringed with aquatic plants; the little channels were shaded by the willow, whose long, drooping branches dipped gracefully into the waters, and formed archways, under which the boatmen moored their craft for the convenience of the siesta. On all sides the vegetation was tropical in its luxuriance, and the air was laden with delicate odors. The eye would have been fatigued by the gorgeous mingling of colors presented by the rich foliage of the "seibo," the flower and fruit of the orange-tree, the ripe tints of the peach, the brilliant bloom of various shrubs and parasitical plants, had it not been relieved by a verdure as refreshing as it was varied in its shades.

The general course of the Parana from its mouth to the town of Rosario in Santa Fé—one hundred and eighty-eight miles—is northwest; thence, up to its confluence with the Paraguay—six hundred and ninety miles—north, and a little easterly.

We began our work, as before stated, by ascertaining its main channel, the Guazu, which, at its confluence with the Uruguay, may be said to bisect the base of the Delta, there being north of it the Brasso Largo and Brasso Bravo, and south of it the pass of Las Palmas and Arroyo Capitan. This last branch, though nar-

row and shallow, is important as offering a water-communication to the main or firm lands of the State of Buenos Ayres, which it skirts for some distance northward, enters the pass of Las Palmas, and thence becomes the most southern branch for miles. A narrow canal-like stream sets off from it, under the name of the Baradero, and, washing the firm lands, joins the main river a mile or two below the town of San Pedro, distant from Martin Garcia about one hundred and two miles.

From this point to the apex of the Delta the main river becomes its southern and western boundary. The most northern branches, forming at different distances the northern side, which is bounded in that direction by the province of Entre Rios, are, beginning from the River Uruguay, the Brasso Largo and the Brasso Bravo; the main river to the distance of twenty-five miles is the "Parbon," and the "Parana Cito." This last, though tortuous, narrow, and shallow, possesses advantages similar to those of the Arroya Capitan and Baradero, and branches off from the main river at the point we have assumed as the apex of the Delta, a few miles below Diamante.

The Parbon is of great importance, being of sufficient depth for any class of vessels that could possibly enter the river, and skirts throughout its extent the firm lands of Entre Rios.

The River Gualaguay, which takes its rise in the interior of the province, and empties into the Parbon, affords navigation for vessels of six feet draught up to the port of entry of the town of Gualaguay, which is about thirty-five miles from its mouth. It passes through a portion of the province particularly rich in pasture-lands and stocked with fine breeds of cattle.

We entered the Parana at the season of *low water;* and throughout the distance known as the Delta, which by the course of the river is two hundred and forty-five miles from its mouth, the least depth of water was sixteen feet, from which it varied to one hundred and five feet; the width is from one half to two and a half miles, exclusive of its various branches, which at some points extend it, from firm land to firm land, twelve miles. The character of the bottom is sandy, save where the current is too weak to retain its detritus in a floating state. The velocity of the current is two and a half miles the hour. The rise begins in December, and continues at the daily rate of two inches until about the middle of February, when it will have attained its maximum, remaining, with a little variation, at this state for a month

or more, when it begins to fall, and descends to its minimum point in June or July, at which it remains until the month of October.

During this month there is a partial rise of about six feet, called the "Repunte;" this continues about a month, when the river subsides again to its lowest state. These periodical changes are caused by the tropical rains of a vast region of Brazil, where many of the tributaries which swell the main river take their rise.

It is well for all the practical purposes of navigation that the waters of the Parana are so subdivided: its numerous branches of course diminish the strength of the current, which, if not weakened by this distribution, would be a great obstacle in its ascent. Steam, but recently introduced upon its waters, will give a vast impulse to navigation, reducing a passage of eighty days by sailing vessels to twelve by this powerful agent.

These branches constitute, exclusive of many of very minor importance, the principal courses through which the Parana discharges its great body of water into La Plata.

I have alluded to its numerous islands, some of them of such recent formation as to be nameless. They gradually rise with the deposits of successive inundations and the accumulation of vegetable matter until they present a surface above high water. Those in the vicinity of "Las Palmas" are, as I have stated, valuable for their fruits; and as we ascended, those of older formation were found well wooded. Besides these, there are many frequently submerged, but covered with a thick mass of the shrubs, plants, and trees only that love humidity, such as the "seibo," willow, alder; the latter not only remarkable for its impenetrable foliage, but as being the shrub—it can scarcely be called a tree—which succeeds the *paja grande*, a wiry grass, the first growth of the newly-formed island. The seibo,* though a spongy wood, useless for fuel, adds vastly to the beauty of the vegetation; its rich blossoms would make it, with us, the pride of ornamental grounds. The sause, or willow, is considered inferior for fuel, though used for that purpose, and is the third indigenous growth, rooting out the alder and taking its place.

* Dobrizhoffer says of this tree, vol. i., p. 399, "A spongy weed, as soft as that of the cork-tree, so that when fresh it may be cut with a knife like an apple, but after it is dry axes are not sufficient to hew it. * * * * Whenever the tiger feels his claws burn, he is said to rub them against the bark of this tree to relieve the pain."

In the ascent of the river up to the vicinity of San Pedro, a distance of one hundred and thirty miles from its mouth, the view is bounded by this labyrinth of islands. From the mast-head of the steamer, an elevation of sixty feet, nothing else was to be seen. It was a wilderness of foliage and flora. Enriched by an exuberant vegetation and enlivened by innumerable water-fowl, these islands were imposing features in the Parana scenery.

Approaching San Pedro, we came in sight of the firm lands of the province of Buenos Ayres, a continuation of the argillo-calcareous plateau upon which that city stands. The town is upon this high land, the level of a surrounding pampa country of vast extent. Though its existence dates from the middle of the seventeenth century, it has but a population of two thousand souls, and contains nothing of note, unless we may except a church erected by the Jesuits.

The position of San Pedro is by no means inviting to trade, being on an arm of the river which will not admit of approach to the shore save in very small craft. It can never, I think, rise to the rank of a commercial port; its intermediate position between two cities, which will probably monopolize a vast deal of the trade of La Plata—Rosario and Buenos Ayres—will make it only a consumer of their importations.

On leaving San Pedro, this elevated land—as it appears from the river, though on a level with the surrounding pampa—continues on to the northward and westward, at times diverging, again approaching the river, from which it appears a high bluff.

At Obligado, eleven miles above San Pedro, the river contracts to a width of less than half a mile, bringing the channel within musket-range of the right bank. Again, from this point, the land is depressed, presenting a gently undulating surface richly covered with native clover and grass, on which were grazing vast herds of cattle and horses.

The commanding position of Obligado was not overlooked by Rosas, who, intent upon carrying out his scheme of effectually closing these rivers, and determined to present a formidable resistance to a forced navigation, erected in 1845 a battery on the right bank, which was placed under the command of his brother-in-law, General Mancilla. But neither the defenses on land, nor the iron obstruction—a chain thrown across the river—could withstand the courage and determination of the French and English. Mancilla obstinately disputed the passage to the steamers of the

combined squadrons, which had under convoy a large fleet of merchantmen, with rich cargoes, destined for Corrientes. An English vessel steamed up to the chain stretched from shore to shore, and, under a deadly fire from the batteries, lifted it to her bows and severed it, while the captain of the French steamer, acting in strict accordance with his instructions "not to land an armed force," laid his vessel close alongside the most efficient water-battery, and with shell and grape drove its defenders from their guns. The passage was effected, but with the loss of many lives, and the convoy proceeded on to its destination, where the merchantmen made a profitable exchange and sale of cargo.

To carry the reader through the labyrinth of channels and islands—to enumerate the latter, or describe the changes which take place annually, would afford little interest. Some of these, however, are too remarkable not to deserve special notice.

About five miles above San Nicholas there is a small island of such recent formation as to be nameless. A few years since it was joined to the main land, on the right bank, by a low, marshy slip of land; now there is a wide separation, and a channel of eighteen feet water. A few miles above, it was necessary for the Water Witch, when we ascended the river, to pass east of the island of Montiel, around which the river flowed in a semicircle; in less than two years subsequently the passage west of that island had become a channel of thirty feet depth.

These changes facilitate the navigation of the river as often as they embarrass or retard it. In the instance just cited, the first circuitous route embraced sixteen points of the compass, and a distance of sixteen miles, while the latter is accomplished by one course, and a distance of one and a half miles. Our charts will exhibit the changes which took place between the years 1847 and 1853. In the former year her Britannic majesty's steamer Philomel, under the command of Captain Sullivan, ascended the Parana to Corrientes. These changes are caused by the periodical inundations, and, as I have before stated, embarrass the navigation less than might be expected.

The pilots are generally skillful, and from habit observant. They sometimes exhibit wonderful acuteness of perception in detecting, simply by inspection, any change that may have occurred in the direction of the channel.

From San Pedro to Rosario, a distance of ninety miles, the character of the river remains unchanged. The right bank is a con-

tinuation of the high land of which I have spoken as extending from Buenos Ayres. It is approached at short intervals by the windings of the river, and presents precipitous banks of indurated clay, varying in height from fifty to one hundred feet; the surface soil one and a half to two feet in depth, of rich black earth, covered with luxurious pastures, upon which roved herds of cattle and horses—diminished, it is true, by the internal dissensions which for many years have agitated the country, but still existing in vast numbers, and constituting the wealth of the *estancieros*, or graziers.

The richest of these extensive land-holders luxuriate in the enjoyment of city life at Buenos Ayres, leaving the entire management of their estancias to *capitazes*.* Each estancia embraces many square leagues, extending along the firm lands of the river: they are indicated by the cattle, and by the very humble tenements of the capitaz and his herdsmen.

Intermediate between the two towns San Pedro and Rosario, stands the unimportant village of San Nicholas, the most northern frontier settlement of Buenos Ayres upon the river. The little stream of Arroyo del Medio, which is about two miles north of it, forms the boundary, so far as it goes, between the states of Buenos Ayres and Santa Fé, the most southern province of the Argentine Confederation, bordering on the right bank of the Parana. On the left are low lands, broken by picturesque lagoons, enlivened occasionally by a cloud of aquatic birds. The black-necked swan, geese, and ducks abound in great variety.

Rosario, fifty-two miles from San Nicholas, is eligibly placed on the same plateau to which I have alluded so often, an elevation remarkable in the uniformity of its character. It is in the province of Santa Fé, and, I think, destined to become a place of great commercial importance.

At the commencement of our survey, in September, 1853, this town, like all others of the Confederation, was only tributary to Buenos Ayres. It then contained a population of four thousand souls. Before the expedition had left the waters of La Plata in 1855, it had increased to twelve thousand, an augmentation which shows the healthful influence of trade upon the prosperity of this country. Upon the reorganization of the Confederacy, Buenos Ayres refused to join it, and Rosario was then declared a port of entry. Its position will probably make it a mart for all the

* Stewards or overseers.

imports and exports of the eleven provinces west of the Parana.

Without due reflection or accurate geographical knowledge of the country, the interior position of Rosario—two hundred miles from Buenos Ayres, and nearly four hundred from the ocean—might be alleged, with some reason, as excluding it from a successful competition with that city; but when we consider the various influences affecting both places, Rosario, even with less capital, a small population, and without the habits or antecedents of trade, bids fair to compete successfully for a portion of the foreign commerce, and certainly offers larger returns to those whose enterprise may tempt them to become commercial pioneers in that quarter. Its interior position can present no permanent obstacle to the direction of trade; and, aided by governmental influence, and by the certain prospect of connection by railway with Cordova, more than three hundred miles west, Buenos Ayres may well regard its future with watchful jealousy.

By the introduction of steam, distance is annihilated; and Buenos Ayres, though she may become the first city of South America, with only a share of the trade of La Plata, can no longer expect to monopolize the business of a country whose extent and resources are sufficient to support hundreds of flourishing commercial towns.

The route of the railway to Cordova* has already been surveyed by Mr. Allen Campbell, of the United States, who has had much experience as an engineer in Spanish America, where he enjoys a high reputation. He pronounces it not only practicable, and offering a profitable investment of capital, but as one of the most effectual modes of developing the resources of the fruitful provinces of the West, heretofore almost unknown, not only in the trade, but in the geography of the world. It would be an iron bond between the eastern and western provinces not easily severed.

There are considerations which would make Rosario, even when approached by sailing vessels, quite as accessible from the Atlantic as Buenos Ayres. The difference of time in loading and discharging cargo is decidedly in favor of the former. These difficulties at Buenos Ayres are too well known to the commercial community to need from me much illustration. The southeast winds, agitating the wide expanse of the river at that point, produce so high a sea that, during their prevalence, no vessel can either discharge or receive cargo.

* See route of this road on map.

The winds which create this sea are the fairest for the ascent of the river, and good for the beat down with the current. In forty-eight hours, or less, a vessel with a southerly wind should reach Rosario from the latitude of Buenos Ayres, off Martin Garcia, or any neighboring anchorage. Arrived there, no detention dependent upon the winds can occur. With anchor in the stream and breasting-lines upon land, a vessel may be laid near enough to shore to make a plank a safe pathway. With the erection of wharves, the town would be as accessible as any of our commercial cities. The Parana, from its mouth to Rosario, is not very tortuous, having a general course of N.N.W. The prevailing south wind is, therefore, fair in the ascent throughout this distance. I must not omit to state that such a wind is necessary to all sailing vessels, because the current of two to two and a half miles per hour will baffle all efforts to contend with it by beating. The Argentine government, with a view of promoting direct trade, has laid a discriminating duty on all articles imported from or exported to Buenos Ayres, which may induce vessels to proceed directly to Rosario for the sale or purchase of cargoes, rather than buy goods encumbered not only with a double export and import, but with the differential duties.

In descending the river no detention need ever occur, its width being sufficient to admit of beating down during contrary winds.

The trade with Rosario should be carried on in vessels of the class and size of the largest three-masted schooners. This construction and rig, which are peculiarly American, will be found well adapted to this river navigation. Such vessels are quickly turned to windward, and easily handled. Experience has shown that this rig is not incompatible with suitable size or capacity. Their draught of water should not exceed twelve feet when laden, the mean depth on the bar of San Juan, below Martin Garcia, not admitting vessels of a greater draught.

During the prevalence of north winds, the depth of water is so diminished as to leave ships, in both inner and outer roads of Buenos Ayres, resting on the bottom. These winds, being from the land, produce no sea, therefore vessels are in no danger, although aground. The south winds, fair for the ascent of the river, invariably produce a rise of the water, increasing its depth according to their force and duration. The depth of water to which I have alluded on the bar of San Juan is that of the old channel of Martin Garcia.

The new channel, made known, as before stated, by this expedition, east of the island, has a greater depth by two feet. The development of this channel has not been hailed by the Buenos Ayreans with the enthusiasm which usually meets all discoveries that may facilitate the trading operations of a country. In depriving Martin Garcia of its political importance, it obviates the necessity of treaty stipulations with Buenos Ayres for entrance into the upper waters.

While engaged upon this work, I have been gratified to learn, by a letter from my esteemed friend, R. B. Forbes, of Boston, that a commercial firm in that city have, with eminent success, become the pioneers to our trade with the interior countries of La Plata. I quote from his letter, alluding to the first shipment that had been made from the United States directly to the port of Rosario. He gives, in a few words, the report of the captain of the vessel to his owners in Boston.

The captain says "he got to Rosario without any difficulty, discharged his cargo, and got his freight money. That Chistopher Columbus did not excite more curiosity than did the arrival of his vessel; that goods can be put on board at Rosario from 15 to 20 per cent. cheaper than at the port of Buenos Ayres, and that he expected to bring home some passengers, with means to buy goods, domestics, lumber," &c.

This is a beginning, to be followed, I hope, by hearing that the waters of the Parana are covered with vessels bearing the stars and stripes.

The right bank of the river from Rosario to the mouth of the Cacaraña, a distance of eighteen miles, presents an unbroken and precipitous elevation of from fifty to eighty feet of reddish clay; beyond this it recedes into the interior; and thence, throughout the extent of the river to its confluence with the Paraguay, the same bank assumes somewhat the appearance of the other. Up to this point the shores are low and marshy, and the course of the river is broken by densely wooded islands of recent formation.

We had remained at Rosario, hoping for clear weather, to make observations for latitude and longitude, as it was my habit to establish the positions of all prominent places, independent of the observations that were made nightly whenever the weather would permit. Finding from appearances that we should be unnecessarily detained, and knowing that I should have subsequent opportunities of determining this place, we pushed on and anchored

off the convent of San Lorenzo, about twelve miles above Rosario, on the same range of high land.

This is one of the old establishments of the Jesuits, and now held by the Franciscans. Substantially built, like all their structures, it presents a conspicuous but isolated mark on the plateau.

The historical associations of this vicinity are full of interest. Before the Jesuits entered upon their missions, Sebastian Cabot, and Ayolas, serving under the banner of what was the then great temporal power of Christendom, charmed with the beauty of the country and the hospitality of the neighboring Indians, had selected it for the first settlements of the white race in La Plata, "San Espiritu," and "Corpus Christi."

We were disappointed in our expectations of astronomical observations. My journal says, "September 8th, 10 o'clock A.M., at anchor off San Lorenzo. Temperature of air 49°, water 67°; velocity of current two and a half miles per hour. Last night strong gales from the southeast, with rain; this morning appearances of clearing. Remained at anchor until 10 o'clock, hoping to get observations for latitude and longitude, but without success. Proceeded on our course, the weather only preventing astronomical observations. This southeast wind has prevailed for several days. Six miles above San Lorenzo the River Cacaraña empties into the Parana; it retains this name only within the province of Santa Fé. From its source in the sierras, it is known as the Tercero, and it is joined by the River Cuarto at the distance of one hundred and twenty miles from its confluence with the Parana."

I am indebted to Mr. Allen Campbell for the most reliable information relative to this river. In the prosecution of his survey of the route of the railway from Rosario to Cordova, which lay very much along the course of the Tercero, it became necessary for him to make a very thorough examination of it. The information he was thus enabled to give me precluded the necessity of farther examination than had been previously made by Lieutenant Murdaugh and myself. It was my intention, before meeting Mr. Campbell, from the cursory notice we had made on our land trip from Cordova to Rosario—the road occasionally taking us near the river—to explore it thoroughly. We had seen it at its lowest state, when the strength of its current was diminished, but were unable to judge, simply by inspection, of the declivity of its bed throughout a distance of three hundred miles. The examination made by Mr. Campbell left no doubt in my mind of the impracticability of

its navigation; if for no other reason, because of its great declivity —two and a half feet to the mile—sufficient to produce a current which it would be impossible to overcome during the season of high water.

This difference of level is a foot for every inch in the Mississippi. I quote the words of Mr. Campbell. "The 'Tercero' is not navigable in its natural state, neither is it susceptible of being made so by artificial means, at least for any practical or useful purpose."

It is not unusual to hear the navigability of many of the small rivers of La Plata mentioned as being established, and even to see such statements in books, when no evidences are adduced, nor the names of explorers given in confirmation of such assertions. This has not only been said, but written of the Tercero. In a work upon the country, the author declares that it is navigable from its mouth to the town of Villa Nueva, a distance by the windings of the river of two hundred and fifty miles. Mr. Campbell says, "These ideas are entirely illusory;" and, as his assertion is based upon reliable data, no better authority could be given. I have no doubt, however, that the same means which once constituted the only mode of transportation downward, on the Mississippi, may be resorted to with success on the Tercero, when immigration and the friction of trade shall have awakened some degree of enterprise among the people, and taught them that time is money.

Passing the mouth of the Cacaraña, the elevated pampa country of the right, as before stated, recedes gradually to the interior; and not until we have ascended one thousand miles above, on that bank, do we again see high lands, and then not a plateau or elevated pampa, but isolated mountains and hillocks from one half of a mile to two miles in length, and rising several hundred feet above the level of the "Gran Chaco"—monuments, apparently dropped from the clouds or upheaved by some convulsion of nature in the midst of a vast domain, claimed by the neighboring republics, and divided among them by imaginary lines, but still occupied by aboriginal tribes who have never been subjugated or even disturbed by the white race.

Between the town of Diamante and Cacaraña, a distance of thirty-three miles, the river courses among low islands of recent formation, but wooded, and with an almost impenetrable undergrowth. As we ascended at the period of low water, I had an opportunity of observing their formation, which was composed of strata of black argillaceous earth and sand, showing at different

periods of inundation the character of the deposit. The bottom of the river, brought up by the lead, was invariably sandy wherever it had been subject to the action of the currents; in slack water it was uniformly muddy.

The scenery of this noble river was throughout, to its junction with the Paraguay, imposing and picturesquely beautiful. Islands continue a characteristic feature for many hundred miles, differing only, I observed in ascending, from those of the lower waters in the improved growth of trees, or even greater exuberance of vegetation. They were enlivened by monkeys, capinchas, and birds of brilliant plumage, and the atmosphere was redolent of the fragrance of climbers and parasites that enwrapped trunk and branches of many a huge tree, their bright floral clusters blending harmoniously with the varied hues of the foliage. The finest gardens of less favored zones would offer but a penury of vegetal beauty when compared with these fair Edens of nature.

At Diamante we meet, for the first time, a change in the character of the left bank of the Parana. We are approaching the high and rolling lands of Entre Rios, washed by the windings of the river, above which they rise from ninety to one hundred and fifty feet. On the beginning of this elevation, prettily situated, stands a town or village of about one thousand inhabitants, formerly known as Punta Gorda, but changed by Urquiza to Diamante, or Diamond.

In 1852, in preparing for his invasion of Buenos Ayres, which ended with the battle and victory of "Monte Caseres," General Urquiza selected this point of the Parana for the passage of his army. The contraction of the river and the firm lands of the opposite bank in Santa Fé made it the most eligible place for this purpose. The passage of the whole army on boats and rafts was made without the loss of a single man, beast, or charge of ammunition. Gratified at his success here, and subsequent victory, Urquiza conceived this point of Entre Rios, from which he took his departure, worthy the name which he bestowed upon it.

The mildness of the climate, the frequent intersection of the lands in every direction by small rivers, and the absence of ferries and bridges, oblige the people of the country to become expert swimmers. The gaucho, stripped to the loins, springs into the water with his horse, as if it were the natural element of both; holding the animal by the mane, he swims alongside, guiding him by an occasional slap on the head, and encouraging him by deaf-

ening yells and whoops. In the few places where ferries are established, canoes are provided, which the traveler enters, holding his horse by the bridle. The canoe is guided by the ferry-man, but carried over by the direct power of the horse swimming alongside.

Diamante is an important place for steamers ascending the river. There, for the first time, will be found excellent fuel, the wood of the lowlands and islands being unfit for this purpose. On the firm lands of Entre Rios are found the algarroba and espinilla, trees of slow growth; the former attains, with age, a great size; both are remarkable for their solidity, and afford the best fuel for steamers, one cord being fully equal to a ton of coals. There are several other woods scarcely inferior to these, all of which skirt the river courses only; they never, in the lower parallels of La Plata, grow in extended forests.

CHAPTER V.

Left Bank of the Parana.—Survey made by Lieutenant Powell.—Climbing the Tree.—Victoria.—Descending the Parana Cito.—Puerto de los Bues.—Gualaguay.—El Puerto de Ybicui.—A Canal.—Paciencia.—Physical Changes.—The Colastiné.—Capella de San José.—Santa Fé.—The Chaco.—Its Inhabitants.—Parana.—Bajada.—Progress.—Pine Lumber.—Commercial Prospects.—Cedar.—Surface Soil.—Dr. Martin de Moussy's Report.—Plan of Parana.—Buildings and Population.—River Banks.—Estancia of an Englishman.—Feliciana.—La Paz.—The Jefe de Politica and the Curate.—Fuel.—Pass of San Juan.—Course of the River.—Sullivan's Charts.—Wild Fowl.—The Espinilla.—Capibaras or Capinchas.—Locusts.—Catching a Deer.—Riacho Caraguatay.—Riacho San Geronimo.—Goya.—Capincha Chase.—Bella Vista.—Productions.—Fishing.—Tobacco Island.—Hunting for Specimens.—Taquari Chico.—An Orange Estancia.—The Camilote.—Arrival at Corrientes.—Visit to the Governor.—Visit from the Governor.—City of Corrientes.—Easy Navigation of the River.—Fine Woods for Fuel.—Resources of the River Provinces.—Table of Distances.

CONSIDERING Diamante as the apex of the Delta of the Parana, I have, up to this point, given a sketch of its right bank. I will now endeavor to give some idea of the left, which, in ascending, was rarely visible from the Water Witch. I shall quote, in part, from the journal of Lieutenant Powell, who, at a subsequent period of the exploration, surveyed the eastern branches of the Parana, skirting the shore of Entre Rios. This was done in a small steamer, *La Yerba*, of two feet draught, which I chartered from the "United States and Paraguay Company" for the pur-

pose of exploring the Salado and other tributaries inaccessible to our "ocean steamer."

On the left bank, the branches which leave the main river, between Rosario and Diamante, are the Parbon, Timbo, and Parana Cito. To ascertain their navigability through a very interesting part of Entre Rios was the object of the work assigned to Lieutenant Powell.

Leaving Diamante and proceeding south, he found the mouth of the Parana Cito obstructed by snags, and, descending the main river a short distance, he entered the Timbo, which, though narrow—from fifteen to twenty-five yards—maintained throughout a depth of from nine to twelve feet. He followed it in its mazy windings through the alluvial soil of the Delta to its junction with the Parana Cito.

To obtain a distinct view of the country, and satisfy himself as to what course he should take among the numerous branches which spread off in every direction, he brought into requisition an accomplishment of his juvenile days, and climbed the highest tree he could find. His examination determined him to follow up the Parana Cito, which has a width of from forty to sixty feet, and a depth of from eighteen to ninety-five, to a point called Tres Bocas—"Three Mouths," where, entering a branch called Victoria, and ascending it half a mile, he came to the Puerto de los Sauses—"Port of the Willows," where there were several small craft discharging and taking in cargo. This is the port of the town of Victoria. I now quote from his journal.

"The position of Puerto de los Sauses was established by observation, the church in the town of Victoria bearing north three and a half miles distant. Situated on the top of the elevated ridge which bounds the Delta, it is a flourishing place of about four thousand inhabitants, and has a considerable trade in hides, wool, and lime. I found it impossible to procure reliable statistics of this, as well as of other ports of the province; and, having made the same inquiry at Parana subsequently, was told 'the government had not, as yet, been able to procure any such information.'

"As the Yerba was the first steamer, and the flag she bore the first of our nation that had appeared in those waters, we were soon honored by a number of visitors. In visiting the government officials, and in the exchange of courtesies with the inhabitants, we made many agreeable acquaintances, and hope we left

as many pleasant reminiscences of their fellow-Americans of the North."

Retracing their steps through the Victoria into the Parana Cito, at the distance of eleven and a half miles from Tres Bocas, they found the Puerto de la Cruz—"Port of the Cross," where it is necessary, during the periods of very low water, to ship and discharge. At the distance of nine miles from the last place is Puerto del Rubio—"Red Port," situated, like La Cruz, on a range of twenty feet elevation. Vessels whose cargoes are for and from Victoria discharge and load at these ports when the state of the river will not permit them to proceed higher. At the season of high water, vessels of ten feet ascend within one mile of Victoria.

In descending the Parana Cito to its junction with the Parbon, a distance from Victoria of about seventy-five miles, they passed through a beautiful rolling country, covered with estancias and fine herds of cattle and horses. They saw occasionally patches of espinilla and tala, both excellent fuel for steamers. A short distance below the confluence of the Parana Cito with the Parbon the latter is contracted to the width of about two hundred yards. Here Rosas, in the year 1845, during his difficulties with England and France, threw a chain across, to obstruct the ascent of the river. At a distance of ten miles from this point the steamer entered the Gualaguay River, which was ascended for twenty miles to El Puerto de los Bues.

This river passes through a beautiful country, and some of the most valuable lands of Entre Rios; it was sparsely wooded with algarroba and espinilla, and the estancias on both sides had herds of cattle and horses. At El Puerto de los Bues, the port of Gualaguay, several vessels were discharging and loading cargo. In consequence of the low state of the water, he was unable to reach El Puerto de los Barillos, the port immediately at the town, which, by the course of the river, is eighteen miles distant from El Puerto de los Bues.

Ascending to within six miles of the town, but finding the water falling, Mr. Powell thought it advisable to return to the latter port, whose position he determined by observations, from which he established that of Gualaguay, bearing N.N.E., and distant six miles. Gualaguay is larger than Victoria, having five or six thousand inhabitants. It has a lively trade in hides, wool, timber, and firewood; the former the product of the herds and flocks of one of the best grazing districts of the province, the latter from the

abundant growth of the espinilla and algarroba. In the effort to procure statistical information, he encountered the same difficulties as at Victoria.

"La Yerba," says Lieutenant Powell, "continued to be an object of great interest, notwithstanding her distance from the town —six miles. No mark of hospitality was omitted, and every facility was afforded in procuring provisions and wood. On visiting the town and calling on the government officials, we were received with every mark of hospitality by the family of the commandante, he being at the time unwell, and, in a walk through the town, were shown by the Jefe Politico the lions of the place, most prominent among which was the café, lighted with gas, the only gas-light at this time in the Argentine Confederation, and the work of an enterprising Italian, the proprietor of the café."

Returning into the Parbon, and descending thirty-one miles, he touched at El Puerto de Ybicui, a port established for the convenience of the neighboring estancieros, and having its custom-house business conducted in Gualaguay. There are several ranchos here, but it is not known as a village. I think its importance has been exaggerated by giving its name, as on Captain Sullivan's charts, to the "Parbon" from this place to its junction with the Parana, a distance of ten miles. Ybicui is not recognized as the name of this branch by the inhabitants of either of the towns above mentioned. It is common for the pilots and people of the country to speak of the Parana Cito from the point at which it branches off from the Parana, near Diamante, to Victoria, as the "Riacho Victoria," but I have confined this latter name to the riacho* which courses off from the Parana Cito, and on which is the town of Victoria.

On entering the Parana Guazu through the Parbon, Mr. Powell had an opportunity of examining a miniature piece of canalization, executed by an enterprising citizen for the purpose of facilitating a charcoal and wood business, which he carried on to a considerable extent with Buenos Ayres. Near the island Biscaino the main river is separated from Las Palmas by a narrow strip of land of about seventy-five yards. Señor Mercadel, the person alluded to, by way of avoiding a circuit of fifteen miles, one half of which would be against the current, has nearly completed a cut of ten feet width and depth through this narrow strip of land, by which he will be enabled to pass from the main river into Las

* *Riacho*, stream. *Riachuelo*, small stream or creek.

Palmas, feeling assured that in giving the current an inch it would take an ell, and very soon open a channel of sufficient capacity for the largest vessel in the trade.

Having traced out those arms of the Parana through which a very interesting portion of Entre Rios is approached, and designated the different points accessible to navigation at periods of high and low water, I proceed with my narrative of the river courses from Diamante upward.

I have shown that here for the first time we have in full view from the channel both sides of the river. The left now assumes the character which has up to this point distinguished the right. It is formed by the high land of Entre Rios, and is even more elevated than the right bank up to Diamante; it is an undulating pampa, skirted on the river by a noble growth of timber. The country on this side of the Parana for four hundred and forty miles, ascending, bounds parts of the provinces of Entre Rios and "Corrientes," and affords throughout an abundant supply of fuel. The inhabitants will contract to furnish it for steamers, placing it at suitable points easy of access.

Intervening islands intercept, at intervals, the view of the main land; but, wherever it is washed by the main river, estancias and settlements are to be seen upon its borders. The course of the river, winding among islands from Diamante to Paciencia, a distance of twenty-two miles, is north; there it turns nearly at right angles to the east. Its name admonishes those ascending in sailing craft, dependent exclusively on the winds, to be patient. There are instances of vessels having been detained here for weeks.

Among the physical changes which were occurring during our work in these waters, one of the most important was at this point. The Riacho Paracan (which will not only reduce the distance, but make what was a circuitous route a straight line) was doubtless becoming the main channel. Its depth had very much increased previously to our leaving the river. During the latter days of our work, in rounding the point of Paciencia, it was discovered that in the main channel the depth had become reduced from twenty-seven to eighteen feet, and that a new and deeper channel had broken through the flat which separated the main land from the island of Paracan, passing east of the island of "Toro."

The Colastiné here unites with the Parana. About thirty miles above it branches off from the main river, and, pursuing a very winding course, receives, among other minor streams, the waters

of the Santa Fé, which is a continuation of the Salado, although much of the water of this latter river finds its way into the Parana through the shallow "riacho" called Coronda, which is only navigable for very small craft. The Colastiné retains at low water a depth of not less than eleven feet, and throughout a width of from one hundred to two hundred and fifty yards. It receives, at a short distance from its branching off from the Parana, through the narrow creek called Cayesta, the waters of a lake of the same name, which, from the immediate vicinity of Santa Fé, extends north about ten miles with a width of three.

The country bordering on the Colastiné to the west, and extending for many miles north of the town of Santa Fé, is known as *Rincon*, "Corner." It is a narrow strip of rolling land, bounded on the west by Lake Cayesta, and on the east by the Colastiné; is well populated, highly fertile, and furnishes the market with large supplies of vegetables.

The Capilla de San Jose—"Chapel of St. Joseph"—is prettily situated on the right bank of the Colastiné, about twenty miles north of Santa Fé. This chapel and a few adobe houses form the northern limit of civilized occupation bordering on the Chaco.

There is north of Rincon a settlement of demi-civilized Indians who will permit no direct trade or intercourse between their more savage brethren and the white traders, but act as their brokers in the exchange of arrow-heads, knives, hatchets, beads, etc., for the skins of animals brought in from "El Gran Chaco."

The town of Santa Fé (latitude 31° 38′ 34″ S., longitude 60° 39′ 48″ W.) is placed upon a peninsula formed by the River Salado, on the west and south, and the Santa Fé on the east, the latter, as I have shown, being only a continuation of the former. In abandoning the old city of the same name, founded by De Garay and eighty-four followers in 1573, on the borders of the Lake Cayesta, in latitude 31°, the inhabitants selected the site of the present town from the admirable natural defenses it seemed to present against the inroads of the savages; also for the communication it offered by the Salado with the settlements of the interior. Their expectations were not realized. Although almost an island, few towns of the Parana have suffered more from Indian aggression. It stands upon the verge of their vast domain, "El Chaco," which, from here, borders the river on the west, embracing an extent of twelve degrees of latitude.

With the Salado as its southern, the Parana and Paraguay its

eastern boundaries, the Chaco covers an area of two hundred thousand square miles. Partitioned by imaginary lines among neighboring governments, it is yet in possession of hordes of inhospitable Indians, acknowledging allegiance to no power but that of caciques, who rule their respective tribes with an authority both unlimited and unquestioned. Neither intercourse with the whites nor time has dissipated, among the more warlike Indians of the Chaco, a deep feeling of hostility for the wrongs endured by their race. They manifest it by continual inroads upon the border settlements, occasionally carrying off prisoners and committing the most atrocious crimes. Generally, however, these incursions are merely predatory in their character, leaving the estancias minus fine herds of cattle, sheep, horses, etc.

We have before alluded to the agricultural tribes. Experience has shown that from this class of Indians may be derived the most valuable aid in bringing the country under cultivation. On the western borders of the "Chaco" they have been employed by the estancieros, and found highly efficient as laborers and herdsmen. They do not abandon their homes or habits, but, after the crops are seeded or gathered in, return to their families, carrying with them the proceeds of their labors. Under kind and judicious treatment, and with the protection of just laws, a useful population could be formed from these tribes, and the Argentine States would do well to adopt the policy of Brazil in trading with the savages bordering upon their territory.

The Parana maintains an easterly course from the Banco de Paciencia for fifteen miles, intermediate between which two points is the city of Parana, the capital of the Argentine Confederation, one mile from the *Bajada*, or "Landing," the name originally held by the city. The Bajada was ascertained by a series of observations to be in latitude 31° 42′ 54″ south, and longitude 60° 32′ 39″ west. It was founded in 1730 by colonists from Santa Fé, who, having been driven from this place by the Payagua and Muños Indians, retired to the spot now occupied in the capital by the *Plaza primero de Mayo*—"The Square of the 1st of May." Here they intrenched themselves, constructed a few huts and a small fort, and succeeded in maintaining this position until sufficient accessions to their numbers were made to enable them to act on the offensive against their savage neighbors. They nearly annihilated the Muños; and the Payaguas, unable to cope alone with them, ceased their hostile incursions. Under the Con-

federation of 1852, it was made the seat of the general government; since which, up to 1855, its population has trebled.

Parana is not advantageously placed as a commercial city, and its trade, except for imports, is of little value. The construction of a mole and wharves would give facilities to lading and discharging cargo which it does not naturally possess. The exports of the province of Entre Rios are mainly from the ports on the Parbon and the Uruguay, in the vicinity of which are the most valuable estancias. The lands around the capital are not so well adapted to agriculture as those of other parts of the province, but they are undoubtedly rich, and the rapid increase of the population will soon cause them to be industriously cultivated.

We could scarcely realize the change in the aspect of the town between 1853 and 1855, the period of the arrival and departure of the expedition. When we first visited it, a noiseless inertion seemed to pervade all things; before our departure, the construction, not only of government buildings, but of fine private dwellings, gave it an air of bustle and life quite "American." The saw and hammer were busily plied in every street, and they were preparing for use, not only the hard woods of the country, but American pine. Even in the short period which had elapsed since the opening of the rivers, this lumber had worked its way six hundred miles in the interior, not only against the currents of the river, but the prejudices of the people, who previously imagined no woods, for any purpose, equal to their own. Pine was not only extensively applied for doors and window-sashes, but, as flooring, was actually superseding tile and brick.

It must be remembered that only three years had elapsed since the opening of these waters to commerce, and as yet there was no direct trade with the United States. This lumber had paid not only import duty at Parana, but both import and export duty at Buenos Ayres or Montevideo, and yet was sold here with profit. It can therefore be well understood how much our merchants would gain by a direct trade, in their own ships, with Rosario or Parana, where their cargoes will be subject to but one import duty before they get into the hands of the consumer. I hazard nothing in saying that I believe the trade in lumber to those interior provinces of La Plata will be one of considerable importance to this country.

The growth of Rosario and Parana in three years is not surpassed by the strides of some of our western cities. The rise in

the value of real estate, the demand for houses caused by the increased population, seem to promise a permanent prosperity, which will make their trade of great value to those who may secure it.

It undoubtedly sounds like "sending coals to Newcastle" to write so confidently of a remunerative trade in lumber which must make a voyage of six thousand miles, and then go up stream from four to six hundred miles into the interior of a country which, but a short distance above where I would land it, boasts of the superiority of its woods over those of the world.

For some purposes, the superiority of South American timber will remain unquestioned, that is, for parts of ship-building where hard and durable woods are requisite; for cabinet-work, where fineness of texture is essential; and for joists and beams of buildings, where heavy woods could be advantageously applied; but neither pine nor its equivalent has yet been discovered.* The cedar is applied to purposes approaching most nearly to our use of it, and grows abundantly in Paraguay and the northwestern provinces of the Argentine Confederation, Tucuman, Santiago, and Salta. It attains to a great size, with a trunk of such height as to afford planks of the greatest required length. I saw one of four feet diameter, but was told they often exceeded six. The price of one-inch boards of cedar—the only wood ever sawed by them in that way—at Asuncion, was twelve and a half cents the foot. Harder woods, squared for joists, beams, etc., measuring from eight to ten inches throughout their length, could not be bought at Corrientes for less than seventy-five cents the vara—thirty-four inches.

It needs no extraordinary calculation to show that American pine can, at least for some years—until enterprise and industry have introduced greater facilities in sawing—compete successfully with these woods at their own market; and its superiority for certain uses is apparent. I purchased pine boards at Corrientes, and paid twelve and a half cents the foot. This lumber had been reshipped for the latter port, and saddled with all the expenses of import and export duty to which I have before alluded.

The plateau upon which the city of Parana stands is a continuation of the high lands of the left bank, first seen at Diamante. They present an interesting subject of study to the geologist. I give in his own language the result of an examination made by

* There is a tree called the Pino alluded to by some of the old writers as being found in the upper waters of the Parana, but its description does not correspond with that of ours, and it has not been brought into use.

an eminent scientific man, Dr. Martin de Moussy, employed by the government to make a geological survey of the country:

"This vegetable earth (the surface soil) has in considerable quantities oxyd of iron and magnesia, which give it a dark yellow or violet appearance. It is unctuous to the touch, because of a certain quantity of clay which it contains. It readily receives, and as readily gives out moisture. Beneath this is a reddish-yellow argillaceous stratum, containing a quantity of oxyd of iron; it is of the same character as that of the pampas and the borders of the River La Plata, called by D'Orbigny and Darwin *Limo Pampero*—'pampa mud.' In this stratum, which is *diluvium*, are found numerous fossils of mammiferous animals of a class now extinct—the Megatherium, Glyptodon, Milodon—which are abundant in the *toscas*, a compact calcareous clay in the lower part of the river. We are not aware that any such fossils have been found in Entre Rios, but we confidently believe they may be. The third stratum, counting from the surface, is calcareous. This bank, which begins at Diamante, and extends northeast to a distance unknown, contains great quantities of shells; nevertheless, there are points at which they disappear altogether. Above the city the calcareous bank is less shelly, but, in consequence of its mixture with sand, it approaches the character of chalk, having at the same time a harder consistency.

"The thickness of this stratum is from six to eighteen feet. The lower part rests on a stratum of potters' earth, beneath which is a perfect sandy limestone, useless in the production of lime, but excellent as a building-stone. This sandy limestone contains no shells. At different points northeast of the rising ground of 'Manga' the carbonate of lime has undergone a remarkable change into sulphate of lime or gypsum, which is found in large quantities, beautifully crystallized.

"The fourth stratum is pure clay, containing in parts small alternating veins of ferruginous sand, argillaceous marl, and minute particles of shells. It is exceedingly variable in its form and thickness. Considering it in an industrial point of view, this stratum becomes an interesting subject of study in connection with the art of pottery. It contains the best material for the manufacture of the finest as well as the common china, and for the making of bricks and square tiles, for which there is great demand at all times in Parana and towns on the river. Potters' clay of extreme fineness is found in great abundance; it is unctuous to the touch,

and may be used with success as 'fullers' earth.' An argillaceous marl, perfectly white, forms in the midst of these strata perpendicular veins, which have a very singular effect contrasted with the horizontal veins of red and yellow ferruginous sand. Finally, the fifth stratum consists entirely of a yellowish-green sand."

The plan of the city of Parana is a quadrangle, divided into squares of one hundred and fifty yards, the streets intersecting each other at right angles. The principal public buildings are the governor's palace—a plain house, but in good taste; several churches—one of which, San Miguel, has been fifteen years in course of construction, and is yet unfinished; and a pretty theatre.

The new houses are all of brick, plastered and whitewashed, with *azoteas*, which afford a pleasant place for evening resort and the flirtation of the señoritas, or even for a promenade; families sometimes visiting each other by these airy passages. I missed, however, the *miradores*, or turrets, which are so gay and ornamental, and to be found on almost all the better class of dwellings in Buenos Ayres and Montevideo. In Parana they would afford an extended view of a beautiful country, embracing in one direction the city of Santa Fé. The theatre contains two tiers of boxes, is sufficiently commodious, and the decorations are in good taste. The gardens are numerous and well arranged. The fruits —orange, peach, pomegranate, fig, grape—are excellent, and their rich foliage contrasts pleasantly with the whitewashed walls of the dwellings.

In 1855 the city contained eight thousand souls, and the population was rapidly increasing. In addition to its kilns, which supply the towns of La Plata with quantities of lime, there are near it extensive tanneries, where the barks of the "cascara" and "timbo colorado" are used; the latter is also excellent fuel for steamers. An admirable road is being constructed from the city to the port —a work of some labor, as it grades an ascent of one hundred and fifty feet. Associating, as we are apt to do, stagnation or a retrograde movement with all things in the interior of South America, the healthful, progressive aspect of Parana is not less pleasing than astonishing.

"We have made observations for latitude and longitude, also for height of bank, which was found to be one hundred and twenty-four feet; also observations with the micrometer for the width of the river, which is here sixteen hundred and forty yards, the velocity of the current being three miles the hour. Six miles above

Parana the river takes a general direction of N.E., the sinuosities of the channel, caused by numerous islands, making the only deviation from this course, which it maintains up to Piragua, a distance of about eighty miles. The character of the river, its shores and islands, remain unchanged up to this point. The high, firm lands of the left bank range from one hundred to one hundred and sixty feet above the water, and are washed throughout this distance by the main river, except at three points, where it is broken by islands. At Chapitan Island, seventeen miles above Parana, we saw, for the first time, detached masses of coarse brown sandstone. Here the islands of the Parana afford excellent fuel for steamers, which may be had for the trouble of cutting it.

"Above, but near Chapitan, is the estancia of an Englishman, which runs for twenty miles along the river. The improvements around the dwelling, the wire fence protecting well-cultivated grounds, gave the impression that, with the enjoyment of an unrivaled climate, this estanciero had brought around him all the order and comfort of a British homestead. Three miles beyond we passed the point where the Colastiné branches off from the Parana, and, anchoring off the lower end of the islands Tres Cruces —'Three Crosses,' obtained observations for latitude and longitude.

"Thirty-five miles above begins the bank of Feliciana. It extends twenty-two miles, and is broken only by some small streams, among which are the Arroyos Gonzales, Hondo, and Verde, which take their rise within the province of Entre Rios. Its strata of limestone, white clay, sand, and yellow clay, retain a remarkable uniformity of depth throughout to Piragua Point; and though the bank is broken, as alluded to, it reappears with the same formation in the continuation of the range.

"Three miles beyond the last point at which observations were obtained there is in mid-channel an isolated ledge of rocks three feet below the surface at low water, and yet there is no appearance on either shore of any such formation. It does not, however, in the least impede navigation, the channel being wide on each side, with a depth of ninety-six feet.

"La Paz is a village of two hundred inhabitants; made observations to determine its position; it is just within the boundary-line which separates Corrientes and Entre Rios—a miserable place! The buildings all of adobe; not even a plaza, the pride and delight of Spanish villages. It contains a chapel of adobe, the bel-

fry, formed of a piece of timber laid across two upright posts, boasts three bells, which make a pleasant chime, and summon the people to morning and evening prayer. I called on the highest dignitary of the place, the 'Gefe de Politica.' After the usual offers of civility, cigars were passed round; took leave, and called on the second dignitary, the curate, who was a native of Madrid, and had only been in the country nine months. He was handsome, intelligent, and polished, and seemed contented in the discharge of his duties as pastor to these simple people. He had a garden, the only one of La Paz, and in it he had brought to perfection a limited variety of vegetables, among which was the cauliflower, the finest I have ever seen; but his success had not stimulated the villagers to a similar experiment. The people live on beef every day of the year, and every year of their lives, and care too little for fruits and vegetables to begin their cultivation.

"The pastures of this neighborhood are very fine; the horses and horned cattle of the surrounding country celebrated. The growth of wood is not confined to the borders of the main river, but extends for some distance into the interior, and skirts all the small streams that find an outlet into the Parana. By agreement with the people of the country, an abundant supply may be obtained for steamers.

"Señor Antonio Descalso supplied the Water Witch, and would gladly enter into similar contracts. This port is not unlike that of Parana—Bajada—with this advantage, that the shore may be more nearly approached. A chain of low sandy islands between the channel and the main land protects it from the strength of the current. As the anchorage was good, we 'cast off' the coal-hulk, which had been thus far in tow of the Water Witch from Montevideo, secured her here as our coal dépôt, and, having made the usual observations, proceeded on our voyage up the river.

"Three and a half miles from La Paz we reached the pass of San Juan, and found a depth of but ten feet water, caused by numerous islands, which extend for some distance, and form various channels, making this the most difficult pass we encountered, and subsequently ascertained it to be the worst in the river. However, a shoal with a depth of ten feet at low water can scarcely be considered a serious obstacle in river navigation. San Juan is four hundred and forty-five miles from Buenos Ayres. Up to this place the least depth we had obtained was fourteen feet; and it is

fair to infer that at this time the Water Witch was not in the channel, for but one or two casts of the lead gave so little water."

In this neighborhood the officers had fine opportunities of showing their skill as sportsmen. We were now dependent upon guns and fishing-lines for a supply of fresh provisions; and so teeming with animal life was both land and water, that the mess-table was not only abundantly supplied with delicious game and fish, but, with encouraging success, we added to our collections in natural history.

Near La Paz, Lieutenant Amen brought down a fine swan; it was our first, and secured as a specimen. The *Perdiz grande*—large partridge, *Pavo del Monte*—wild turkey, or turkey of the woods, and the *Gallina del Monte*—wild hen, were found in quantities, and would be esteemed as delicacies on a Lucullian table; but, forced to live upon them for some weeks, we would gladly have exchanged them for a good butcher's joint.

From latitude 30° 44′ 8″, four miles beyond La Paz, the general course of the river is north up to 29° 11′ south, ninety-three miles by difference of latitude, and ninety-eight by the sinuosities of the channel; a remarkable directness, its windings differing from a right line only five miles. At this point, *Vuelta del Norte*—"Bend of the North," the river, as if wearied of a direct course, winds about in a most extraordinary manner, now north, here south, through sixteen points of the compass. Among the islands which cause the shallow channels of San Juan, numerous changes are constantly taking place. This may be discovered by comparing the charts of Captain Sullivan, R. N., who made, in 1847, a running survey of the Parana to Corrientes, with the charts of our expedition, the surveys for which were made in 1853 and 1854. Not only the channels, but the appearance of the river were in some places materially changed. Islands have been enlarged, others reduced in size; some have disappeared altogether, and their positions, as marked upon his chart, are now, in some instances, the channel of the river. The track of the Water Witch at the lower pass of San Juan passes directly over the position of an island marked on Sullivan's charts. This proves nothing wrong in his surveys; but it is an interesting fact, showing the remarkable physical changes constantly produced by the action of the currents, which, if watched and studied with care, would doubtless develop some interesting law of nature governing and controlling the movement of these waters.

On leaving La Paz, we had on the left bank the province of Corrientes, on the right "El gran Chaco." In latitude 30° 20′, the River Espinilla, an unimportant stream, that takes its rise in the province of Corrientes, disembogues in the Parana; and near this place we saw two capibaras or capinchas on the bank, which our carbines soon enabled us to secure as specimens. They were male and female; the former weighing one hundred pounds, and measuring in length three feet seven and a half inches; the female ninety-one pounds, and three feet seven inches in length. It seems to form a link between the hare and the hog, having the mouth and teeth of the former, and the head, skin, and hair of the latter. A thick membrane unites four toes on the fore, and three on the hind foot, making them semi-web-footed. The male may be distinguished from the female by a horny protuberance of an inch and a half on the nose. Both have a similar prominence on each hind leg from three to four inches in length. It feeds on vegetables, and is never seen at any distance from a lake or river, into which it dashes at full speed when pursued; sometimes precipitating itself from banks of twenty feet elevation, and diving under the water, where it will remain for several minutes. When not in motion, it is invariably seen in a sitting posture, and its inactive, clumsy movements on land would make it an easy prey to the jaguar, did not its instinct teach it to seek protection in the water. The flesh of this animal is similar in appearance to that of the hog, and, had we not been supplied with such abundance of game and fish, we might have regarded it as a delicacy; it was served up by some of the men at their messes, and its savory odor made it quite a tempting dish.

"*September 6th.* Atmosphere clear, sky cloudless. Witnessed an extraordinary spectacle. I called the pilot's attention to a black cloud in the northeast which seemed to be rapidly approaching. Eyeing it attentively for a minute through the telescope, he pronounced it a swarm of locusts. They came at last in myriads, darkening the air. Some fell on deck, or were caught by the rigging and spars. They were migrating from a part of the country which they had denuded of all vegetation, to new fields or orchards destined to share the same fate." Subsequently, in Paraguay, I had an opportunity of witnessing their destructive power. A swarm took possession of an orange grove, which in a short time was left as leafless as the orchards of northern latitudes in mid-winter. The young locusts, before they make their first flight, are the most

destructive. Fortunately, for the labors of man would be of little avail did a contrary law prevail, these visitations are not frequent or even annual; the inhabitants of the country, from observation of the habits of these insects, know when they may expect to suffer from their ravages. The beginning of October is the season at which they usually appear. They swarm in myriads, having the appearance, as we saw them, of a dark, threatening cloud; and on their approach, a number of persons collect, who, with whoops, yells, and deafening noises, sometimes succeed in driving away the plague; but should they settle upon a tract of uncultivated land in the vicinity, it is then well understood that the surrounding vegetation will suffer. They deposit their eggs; in December the young locusts appear, and before the first flight in February, spread over neighboring orchards and fields, feeding continuously for several weeks.

My journal reminds me that this is the first night we have suffered from musquitoes, but we are well supplied with nets and bars.

"*September 7th.* No longer in sight of the high lands of Corrientes. The course of the river is interrupted by numberless and nameless islands, also the mouths of various riachos, some of which course through the firm lands on the left bank before again uniting with the main river, thus affording convenient access to the estancias. In latitude 29° 50′, at Riacho Timbo, got one cast of the lead of ten feet, there being immediately below and above it a depth of fourteen and twenty-one feet. I designate only the shallowest points of the river, which call for vigilance on the part of the pilot. Throughout, with these exceptions, the invariable depth was from twenty to seventy feet. At Paso Patil it is again divided into many branches. Here we found a depth of but ten feet."

While in the act of anchoring to ascertain the direction of the channel, we saw a deer swimming majestically from the east to the west bank. It offered an occasion not only of securing a specimen, but fine sport for officers and men. A boat was soon engaged in the chase, which was kept up for some time with great spirit, and infinitely to the amusement of those looking on from the Water Witch. Its movements and speed were wonderful, calling forth our admiration as it turned first to the left, then to the right, or again dashed forward, but evading capture by the most skillful manœuvres. As we were anxious to secure it alive, that its skin might be preserved perfect, the chances of escape for the noble animal were great. The lasso, thrown in gaucho style, at last did its

work; a desperate struggle then commenced, but was soon ended by a skillful blow dealt *à la matador* by one of the party. Because of its enormous size, it was with difficulty gotten into the boat. It weighed two hundred and sixty-eight pounds, and measured in length eighty inches without the tail; around the body forty-eight inches, and forty-four in height. Its color was a reddish-brown, hair long and thick; in many points answering to the *guazu pucu* of Azara, but again there were striking peculiarities in which they differed widely. There was a remarkable cavity of three fourths of an inch under each eye, emitting a powerful odor of musk; also a cheese-like substance of most offensive smell on each side of the upper jaw, in a sack, with a conduit into the nostrils. The people of the country told us that, to make the flesh of this deer palatable, it was necessary to cut out these offensive parts before life was extinct. We had no opportunity of making the experiment, but a saddle of this specimen, served up in good style at our table, set at defiance the keenest appetite, so strongly did it savor of musk. We were also told that, as a means of defense when pursued, it exhales, at intervals of a few seconds, an odor so offensive as to deter both men and dogs from the chase. We know that nature provides some animals with a similar power of protection, and it is not improbable that this species of deer may possess it; but in its pursuit, which was on water, this peculiarity was not perceived by the party from the Water Witch.

Fifteen miles above, we anchored to examine the Paso Patil, latitude 29 °15′. We passed the junction of the Riacho Caraguatay, which branches off from the main river thirteen miles by its course, but in a right line five. It takes its name from an aloe (so called by the Guarani Indians), which, in treating of Paraguay, I shall describe. It is there found in great abundance; is one of the most valuable indigenous products of that rich country, and will doubtless become, in course of time, an article of trade.

We had advanced two miles when we passed the mouth of the Riacho San Geronimo, flowing into the Parana from the Chaco. It branches off from the main river seventeen miles above, and is named from a Jesuit establishment, formed at that point in 1748, among the celebrated Apibones. Not a vestige of it remains, although it numbered at one period four hundred and eighty souls.

The river here makes the Vuelta del Norte, to which I have alluded, and describes an S; then takes a direction of N.N.E., which it maintains to latitude 28° 40′ south, and thence, to the town of

Corrientes, the general course of north. The country is low on both sides up to latitude 29° 01′ south, when the firm lands again have an elevation of forty feet.

Sixteen miles, by the course of the river, from the Vuelta del Norte, we anchored off the mouth of the Goya, on which is situated a town of the same name three miles above; at the season of low water vessels of more than four feet draught can not make a nearer approach. I visited the authorities of Goya, and received the usual civilities, which every native of this country, however humble his position or deficient in education, knows how to offer in the most pleasing manner.

The town has 7000 inhabitants, and possesses considerable trade. It is an outlet for the products of a fine back-country—the interior of Corrientes—which receives, in return, supplies of merchandise. There is nothing prepossessing in the appearance of Goya, or the immediate surrounding country; it is low, and the pastures are less rich than those of other parts of the province. Civil wars have left their desolating mark upon this part of Corrientes. Cattle have been destroyed, and the people diverted from agricultural and pastoral pursuits to fighting among themselves. A happier system will doubtless prevail under the existing Confederation. Even at this time, the trade in hides and tallow is very considerable. Having accomplished our business in the town, in descending the river to the Water Witch, we saw two capinchas seated upon the bank. They allowed the boat to approach within half of its length, when, with the grunt of a hog, they dashed into the thicket. The boat's crew were soon in pursuit, but had scarcely entered the bushes at different points, when the animals bounded forth, and precipitated themselves into the river. With some management, the capincha might easily be secured on land, as its movements are awkward and slow. Each man, on this occasion, thought that another had allowed the game to escape; but all had some sport, and a capincha chase will doubtless serve as the foundation for a long yarn in their next man-of-war cruise. The usual observations were made to determine the position of the mouth of the Goya.

We had ascended about eight miles, where the left bank of the river attains an elevation of from forty to one hundred and twenty feet, which continues unbroken to the town of Bella Vista, in latitude 28° 29′ south, longitude 59° 07′ 02″ west. On this range are some fine estancias. The dwellings on these estates are generally

of adobe, thatched, with neither gardens nor ornamented grounds about them, but lovely orange-groves. These are not only profitable, but the delicious shade they afford renders them the favorite resort for the siesta. On the right bank the lands of the Chaco rise from twelve to fifteen feet, and continue at this height for some miles, when they are again broken by low islands. This elevation characterizes generally the banks of the Parana and Paraguay throughout the Chaco.

Twenty miles above Goya we found a remarkable change in the channel from the west to the east of the island of Tunas. It thence skirts the left bank until within a few miles of Bella Vista, where its course is again broken by a number of islands. Two miles above Tunas we were compelled to anchor and make an examination of its course. Here is a pass, throughout which the channel is narrow and tortuous, with a depth of but ten feet; it extends for a short distance only. Just below Bella Vista, the left bank rises one hundred and thirty feet, forming a bluff called Guayaña, from an aboriginal tribe of that name, who formerly claimed the surrounding country. A remnant of these Indians, now quiet and demi-civilized, still occupy a few huts in the vicinity.

Bella Vista has about one thousand inhabitants, and boasts a Plaza, a church, and commandancia, or office of the commander of the district. I found here one of our countrymen, who had established himself in the neighborhood for the purpose of cultivating cotton, which is a perennial plant, and is said to produce abundantly for fifteen years; that of the best quality is the product of the first and second years. I learned subsequently that he did not succeed in his enterprise. There is also residing here an Englishman, engaged largely in the manufacture of molasses and aguardiente. Corn is the principal cereal, but grown only for home consumption, though it might be made an article of profitable trade. The oranges and peaches are of excellent quality. Indeed, Nature seems to have exhausted her bounty upon these Argentine States. They have the products of temperate and tropical zones; their woods and flora are rarely equaled; the climate is neither enervating nor severe, and the atmosphere never laden with miasma. What a land of promise to European emigrants!

So anxious are the government and people to induce immigration, that lands are freely given. The fertility of the soil is every where made available to trade, through the natural canalization, formed by branches which, diverging from the main rivers, and

coursing for a long distance through the interior country, again find an outlet in the central waters. With the mechanical aids of this progressive age, the labor of one man would be equal to that of ten in regions less favored. The agricultural tribes of the Chaco might furnish herdsmen and farm-assistants. I have alluded to the successful experiments on the western borders, with these Indians as laborers.

While at anchor off Bella Vista for a night, the officers amused themselves by a mode of fishing familiar to me, from having seen it practiced along the shores of York River, in Virginia. Vast quantities of a species of fish, known in the Chesapeake as the "Jumping Mullet," are found in this part of the Parana. Pushing quietly up stream after dark, with the shoal between the fishing-party and the shore, the men rapped on the sides of the boat, the frightened fish leaped out of the water in every direction, hundreds at the same time jumping into the boat. In an incredibly short time the whole ship's company were in this manner supplied with a mess. In York River the fishermen carry a light elevated some three or four feet, and cover their boats with twigs to prevent the escape of their prisoners.

The numerous islands above and below Bella Vista cause several difficult passes, where we found a depth of but ten feet. The most intricate is three miles above, where the channel, with a width of three quarters of a mile, forms a serpentine figure. Passing near the island of Tobaco, fifteen miles above Bella Vista, one of the crank straps broke, which obliged us to anchor for repairs.

I landed on Tobaco Island with my gun in search of specimens. Monkeys chattered in the trees above our heads. I shot four, corresponding to the species "*Caraza*," described by Azara. One of them lived for some minutes; it touched its wound, looked at the blood, then at me with a glance piteous and reproachful; its moans were plaintive, and really touching from their resemblance to those of a human being. I resolved never again to shoot a monkey. The pilot, who was with me, shot a Ciconia, an enormous bird, a species of stork. One of the sailors, from a nest on the top of a lofty tree, secured two young ones, and, hoping to preserve them alive, we took them on board. For a few days they thrived, and I imagined that we should have no difficulty in rearing them, but I was disappointed. The skins of the monkeys and old birds were brought home in good condition; those of the young ones were too delicate for preservation.

"Our damage repaired, we proceeded. Passed the Riacho Natu on the Chaco side, in the same parallel as Tobaco Island. The river now courses east for ten miles, when it again assumes a northerly direction. The right bank within this distance is known in the country as Chimbola coast."

I could not learn the origin of this designation, but it is very usual to find different sections of the banks distinguished by some particular name, occasionally derived from that of the present or former owners.

At the point where the Parana pursues a northerly course, the Riacho Natu branches off, and two miles above we passed the mouth of the Taquari Chico, which rises in the Chaco. Its banks, so far as we could judge, were well wooded, and there was a quantity of timber cut, ready for use. I found uniformly great difficulty in procuring any information of the interior of the Chaco; but, from the appearance of its banks, and the growth upon them, I decided that the Taquari Chico was not a riacho, but a river. Opposite its mouth is an island of the same name, and five miles above is the little village of Capilla del Señor—"Chapel of the Lord," on the elevated land of the left bank. An island intercepts the view when on the same parallel; and between it and the main land courses a riacho of equal width with the main channel, which some years past was navigable for vessels of the usual size, but it now admits only of the passage of boats.

Passing this island, we had again the firm lands of Corrientes, washed by the waters of the main river for a distance of fifteen miles, to the estancia Domingo de la Torre. This is the property of Don Pedro Domingo de la Torre, and is reputed to be one of the finest estancias in the province. It is famous for its orange-groves, in which there are five thousand trees in full bearing, and the same number coming on; the net profit from it is, as I learned, five thousand dollars per annum, for the facilities of navigation render the cultivation of this fruit profitable; and though the oranges of Corrientes are not equal, either in size or quality, to those of Brazil or Paraguay, they are good, and meet with a ready sale, not only in the markets of Buenos Ayres, but in all the villages and towns of the country. Next to beef, it is among all classes the principal and favorite article of food, and my only astonishment is that groves are not to be found on all the estancias of the country, where soil and climate both favor their propagation.

For the first time, we met with the *Camilote*, a species of water-

lily, which floats with the current, and is a sure indication of the rising of the waters in the higher parts of the river. This plant grows with great rapidity during the season of low water, near the banks, but at the rise it is rooted up and carried down by the current. Here, too, we could see the effect of the mingling of the waters of the Parana and Vermejo. The latter, flowing through a more recent alluvial formation, and with a current of one third greater velocity, rushes into the comparatively limpid waters of the Parana, carrying an immense quantity of detritus.

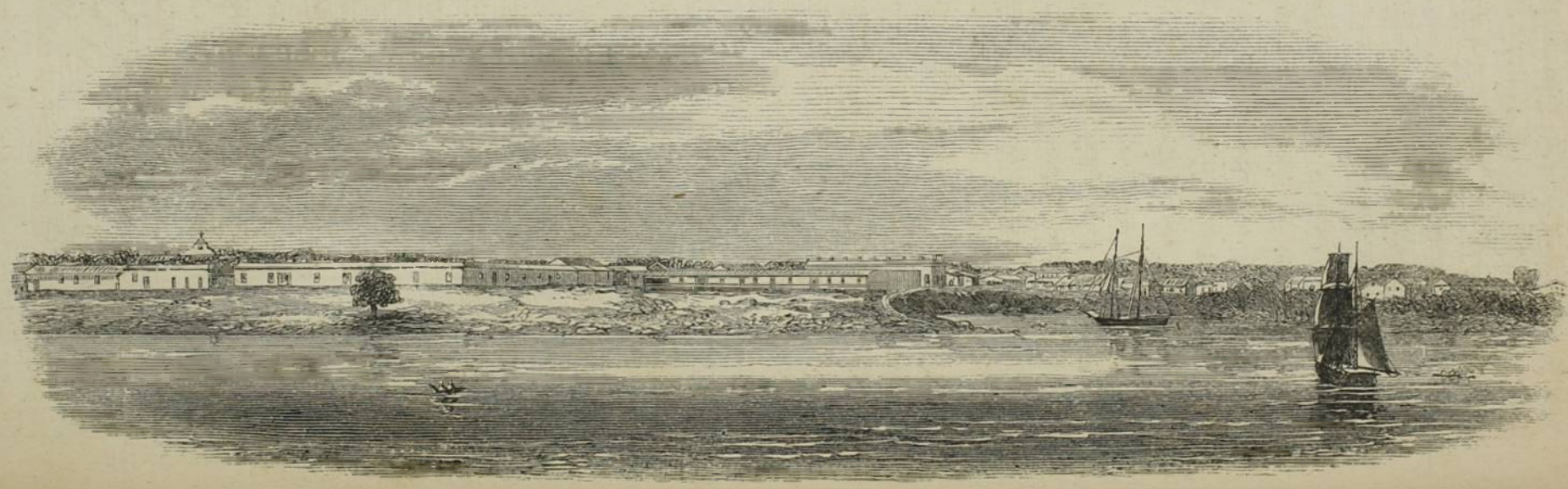
Corrientes is twelve miles above the Estancia Domingo de la Torre. Between these two points, on the right bank, a riachuelo and a more important stream, the Rio Negro, flow into the Parana from the Chaco. The latter, it is said, affords good boat navigation for a long distance into the interior. Fine timber is found on the banks, which is floated down to its mouth, and received on board of vessels below.

We anchored off Corrientes on the 23d of September. My first visit was to the governor, Señor Don Juan Pujol. As it was an official call, it was made at *La Casa del Estado*—"The State House," a one-storied quadrangular building of brick, with a wide entrance leading to a court, upon which opened all the reception rooms and offices. As my name was announced in entering, the governor, who was seated at a long table covered with business-looking documents, rose, and advanced with many courteous expressions of welcome. Placing me upon a sofa, he seated himself, and, after the usual civilities, turned the conversation to the exploration of the rivers. He spoke with deep interest of the benefit it would confer upon the Argentine States, and alluded to the isolated condition which the selfish policy of Rosas had imposed upon them, and the consequent ignorance of the people as to the wealth of their own resources. Our expedition, he hoped, would stimulate immigration and commercial enterprise toward La Plata. Governor Pujol showed himself to be a man of intelligence and education; and after an interview and conversation protracted far beyond the limits of an official visit, by a manifest disposition on his part to do so, I left him, with the assurance that any aid in his power for the advancement of our work would be given. These professions were made with apparent sincerity, and I afterward had the satisfaction to find that they were acted out in good faith.

The following day the governor, accompanied by a friend, re-



CORRIENTES—UPPER END.



CORRIENTES—LOWER END.

turned my visit, and was welcomed on board the first United States man-of-war that had touched at Corrientes. I explained to him that, fitted up for an exploring expedition, we hesitated to call her a war steamer, but could show him some fire-arms of the latest improvement, in the examination of which he expressed great interest.

Corrientes has twelve thousand inhabitants, and is on the left bank of the Parana, twenty miles below its junction with the Paraguay. It has an extended water-front, and the anchorage admits of a near approach to the shore, where vessels are removed from the influence of the currents. The town is laid out in the usual style of Spanish American cities, with streets intersecting each other at right angles. There are several churches of some architectural pretension, but generally the buildings are one-storied, with "azoteas." The better class of private dwellings are of brick, very spacious, with open courts adorned with orange-trees and gay flowers. They are all neatly plastered and whitewashed on the exterior. The interior arrangements, without any effort at decoration, are comfortable. The rooms are constructed with a special regard to the climate, and, with the same consideration, simply but appropriately furnished. I shall again allude to this place, as the operations of the expedition obliged us subsequently to visit it.

Before proceeding farther, it may not be unimportant to note one or two facts connected with our passage up the "Parana," and to sum up the names and distances of the most prominent points, from its mouth at Martin Garcia to its junction with the Paraguay. It must be remembered that the Water Witch, with a draught of nine feet, ascended the Parana in the month of September, the season of low water, when the pilot pronounced the river lower than usual; that she encountered no shoal which she could not pass over with that draught, and that the least depth ever shown by the lead in the channel was nine feet. The navigation is attended with no danger; there are neither rocks nor sunken trees to impede the way, and, notwithstanding the shifting of the channel which annually takes place at some points, there is always one open with the usual depth of water. The velocity of the current is two and a half miles the hour. The rise of the water, which begins in December, is about twelve feet. It reaches its maximum in February and March, and its minimum in August. There is also a partial rise of six feet in October, which, rapid and

transient, continues one month, then falls to its former level in the same space of time. From Diamante upward there are fine woods, and much of it is excellent as fuel for steamers; beef and fruits may be purchased at all the towns, and game and fish had for the trouble of seeking them. But the Spanish Americans care little for this latter food—indeed, they are prejudiced against it; and above Buenos Ayres, where a large foreign population gives rise to a demand for it, the people, neither for trade nor amusement, employ themselves in fishing.

The confluence of the Parana and Paraguay is about one thousand miles from the Atlantic. The country on both sides is fertile, and above Buenos Ayres, on the firm lands, there are numerous estancias, extending from the river banks for many miles into the interior. I have been filled with amazement at the resources of these "riverine" provinces, and their availability, without the construction of roads, canals, or even the usual obstructions of river navigation, for direct trade with foreign countries. In this course of one thousand miles, the cereals, vegetables, fruits, woods, and flora of almost every zone may be grown to perfection, as is proved by the actual products under the present primitive system of culture. The horned cattle, horses, and sheep are remarkably fine, and their existing numbers, spite of the civil wars which have distracted the country, show the extraordinary adaptability of the climate and natural pastures to their increase. The population is sufficient to form the basis of an extended and immediate trade; and the Indians, with the exception of the warlike tribes of the Chaco, are quiet or semi-civilized. The climate is benign, even in low, marshy neighborhoods, as experienced by ourselves, and attested by many writers, particularly Azara, who was employed by the Spanish government to run the boundary-line between its possessions and those of Portugal, and spent twenty years of his life in this work. The Spanish Americans and Mestizos we met with were uniformly friendly and hospitable, and the cities and small towns offer some agreeable society. Beyond or above Buenos Ayres there are neither Protestant schools nor churches, but there is nothing forbidding them in the Constitution of the Argentine Confederation.

The distances of points alluded to in the ascent of the Parana, between its mouth or "Martin Garcia" and "Cerito," at the mouth of the Paraguay, are, in statute miles, as follows:

From Martin Garcia to the Guazu	. . . . .	24 miles.
" Guazu* to San Pedro	. . . . .	88 "
" San Pedro to San Nicholas	. . . . .	40 "
" " " to Obligado	. . . . .	10 "
" San Nicholas to Arroyo del Medio	. . . .	2 "
" " " to Rosario	. . . . .	52 "
" Rosario to San Lorenzo	. . . . .	14½ "
" " to mouth of the Cacaraña	. . . . .	22 "
" " to Diamante	. . . . .	67 "
" Diamante to Parana	. . . . .	36 "
" Parana to La Paz	. . . . .	102 "
" La Paz to Goya	. . . . .	145 "
" Goya to Bella Vista	. . . . .	53 "
" Bella Vista to Corrientes	. . . . .	87 "
" Corrientes to Cerito	. . . . .	18 "

CHAPTER VI.

The Waters of the Paraguay and Parana.—Affluents of the Paraguay.—Enter the Territory of Paraguay.—Salute to the Admiral of the Navy of the Republic of Paraguay.—Visit from the Admiral.—Boundaries of the South American Republics.—Banks of the Paraguay.—Palm-trees and beautiful Scenery.—Guardias and Piquetes.—Tres Bocas.—Guardia Humaita.—President Lopez and the Brazilian Squadron.—Vermejo River.—Pillar.—Caña.—Caranday Palm.—The Tibiquari.—Salute of Musketry.—Villa Franca.—The Commandante.—The Lasso and Bolas.—Oliva.—Villa Villeta.—A Cigar with the Commandante.—San Antonio.—Mount Lambare.—Arrival at Asuncion.—Rise and Fall of the Paraguay.

AFTER remaining three days at Corrientes, we obtained observations for determining its geographical position and variation of the compass. I also commenced here a series of observations, to be pursued at suitable points, for determining the characteristics of the waters of the eastern and western affluents. While those from the east are generally pure, those flowing from the west, through the Chaco, are, with few exceptions, saline. Azara says that in summer, at the season of low water, nearly all the springs, lakes, and streams of that region are "more or less brackish." According to Father Patino, a Jesuit, who in 1721, accompanied by several of his order and sixty Guarani Indians, made a partial exploration of the Pilcomayo, with the hope of discovering a water communication between the missions of Chiquitos and those of the

* Mouth of the Parana.

east, the lands through which this river courses are in many places strongly impregnated with salt, "*sal comun bueno, en varias partes de las barrancas*"—"Good common salt in various parts of the banks."

Much to my surprise, I found that the graduation of the hydrometer sunk entirely below the surface of the water, thus giving no reading. I was unwilling to believe that the mingled waters of the Parana and Paraguay were of less specific gravity than distilled or pure rain water. The standard temperature of the instrument was 60° Fahrenheit, some degrees below that of the water we were now endeavoring to test: in that lay a solution of the difficulty.

To the junction of the Parana and Paraguay, twenty miles above Corrientes, the course of the former river is interrupted by low islands. Here it takes a general direction east, and the Paraguay a tortuous course north. Three miles above Corrientes are the islands Medio and Mesa, on the left. There the water, hitherto comparatively clear, becomes turbid from commingling with that of the Vermejo, or Red River, so called from the discoloration caused by the detritus borne along by it during the periodical floods. Some distance above, the Vermejo flows into the Paraguay. Opposite the upper end of the island Mesa is the mouth of a small arm of the Paraguay, Riacho Atajo, which branches off from the main river three miles above its confluence with the Parana.

A continuous chain of low islands now skirt the west bank of the Parana up to that of Atajo, at the confluence of the Parana and Paraguay. This island is claimed as the territory of the Argentine Confederation, but Paraguay has possession, and maintains it, not by diplomacy or argument, but by the establishment of a military post upon it—"Guardia Cerito," latitude 27° 17′ 32″, longitude 58° 37′ 32″.

If it had not been the established rule of our work to anchor and take observations at all important points, custom, or, indeed, the laws of Paraguay, made it obligatory to stop here and communicate with the commandante before continuing the ascent of the river. Immediately on anchoring, the Water Witch was visited by two officers with the compliments of the admiral. This was a naval station, and the officer in command, with the imposing title of "Admiral of the Navy of the Republic of Paraguay," had a squadron of five small vessels. We had heretofore, on all public occa-

sions since entering La Plata, avoided firing salutes on account of our chronometers, upon which the accuracy of the work depended. I considered it now useless to offer explanations or excuses, and fearing that my motive might be misinterpreted, we took the usual precautions to protect the instruments, and saluted the admiral (the Paraguay flag "at the fore") with thirteen guns, which was immediately returned with a corresponding number. Salutes having thus been exchanged, the admiral came on board, and expressed much pleasure at our arrival, assuring me that a cordial welcome awaited the expedition at Asuncion. He had received, a month previously, instructions from the President to offer me every facility for ascending the river; to supply us with any provisions we might need, and an experienced pilot. This first reception in the waters of Paraguay was certainly cheering; for, from what we had heard, we knew that President Lopez was here the government supreme, from whose orders there could be no appeal or deviation.

We found the river full at its highest point, verifying what I had heard, that the seasons of high and low water in the Parana and Paraguay were the reverse.

Observations having been taken, the ascent was continued, the admiral and some of his officers being on board, and their canoe in tow. He wished to witness the working of our steamer, the first United States man-of-war that had ever entered the waters of the Paraguay. After ascending a mile, our friends took leave of us, and returned to Cerito Guardia.

The appearance of the Paraguay offers some striking contrasts to the Parana. Its general width rarely exceeds half a mile; it has comparatively few islands, a tortuous course, and a more open channel. The current is from two to two and a half miles the hour.

The country on the left bank is undisputed Paraguay territory; that on the right is "El gran Chaco." The Argentine Confederation claims the latter for a distance covering the mouth of the Vermejo, but Paraguay does not recognize this right, and maintains her jurisdiction over that part of the river by a naval and military force, established not only at Cerito Guardia, but at various other points. It is very difficult to obtain any reliable information as to the grounds upon which these territorial limits in the Chaco are based. All the republics of La Plata have among them unsettled questions of boundary, but those relating to this country are founded upon original treaties made when the entire southern hemisphere was divided between Spain and Portugal.

The ground in dispute between the Argentine States and Paraguay has only an extent of twenty-seven miles in latitude and forty by the course of the river, scarcely the length of many estancias; and in La Plata, where there are extended regions of fertile but waste lands, would be of no consequence but for its geographical features. It gives Paraguay command of the mouth of the Vermejo, a river known to be navigable to the northwest provinces of the Argentine Confederation, Salta and Jujui.

The banks of the Paraguay are less elevated than those of the Parana; up to Asuncion, they rarely exceed twenty-five feet. To within a short distance of the capital their geological formation is unvarying: a substratum of yellowish sand of about ten feet thickness, a middle stratum of earthy clay, and a surface virgin soil of about three feet. The timber is abundant, and of excellent quality.

"In the isles of the Parana," says my journal, "we have seen the lovely gardens of La Plata, we have now before us her parks. It is the region of the palm, which here rises to a great height. The grass is green, luxuriant, and clean as a well-kept lawn; deer gambol under the trees, and it needs not a vivacious imagination to conceive that, at each bend in the river, some noble mansion, to which these parks pertain, will appear. A few habitations are alone wanted to animate the landscape, and complete the pleasant association of homes in this fair land. There are extended forests of these palms, so symmetrical, fresh, free from all that could detract from their beauty; growing apart at such exact, apparently measured distances, that we are filled with astonishment and admiration."

The east bank of the river is defended by *guardias* and *piquetes* throughout the extent of Paraguay, each occupied by from six to twelve men; the piquetes being placed at intervals of three miles, while the guardias are more distant apart. They are the stations of a river police for the detection and prevention of smuggling, and also dispatch offices for the rapid transmission of intelligence to the capital. On the west bank there are no guardias; and inasmuch as the Indians of the Chaco have no canoes, the river is considered a sufficient barrier to prevent, on their part, any hostile or predatory incursions.

Great as was the luxuriance of vegetation upon the Parana, as we approach the equator I find it enriched by a more varied and brilliant flora. Flowering shrubs abound, and delicately fragrant epiphytes. The trunks of large trees are enwrapped by climbing

plants, their long tendrils pendent, or festooning the lowest with the topmost branches, and enameling the dark foliage with their many-hued blossoms.

The most important guardia above Cerito is that of Tres Bocas —"*Three Mouths*," so called from there being at that point two branches from the main river, the Atajo, to which I have alluded, and the Pires, which flows into the Parana some few miles above its junction with the Paraguay. Though distant from Cerito five miles, these two guardias are often confounded with each other under the name of Tres Bocas. Around the larger "guardias" there is some little cultivation of corn and mandioca, but as abodes they are generally desolate places. The houses consist merely of posts planted in the ground, interlaced with bamboo, filled in with mud, and thatched with common grass. The look-out is a platform of about sixty feet in height, open at the sides, and thatched with straw. It is generally so placed as to command an extensive view up and down the river. The piquetes are simply thatched sheds, with raw-hide hammocks for the men, suspended so as to be protected by the roof from rain. Of these, the Guardia Humaita occupied one of the most commanding points on the Lower Paraguay, and there President Lopez, in 1855, erected quite a formidable battery, in anticipation of troubles with Brazil, and probably—certainly with good reason—with the United States.

The imperial government felt aggrieved at some indignities offered to its minister at Asuncion, and sent a large naval force, consisting of several war steamers and transports, under the command of Admiral ———, to demand satisfaction. We are left to infer, from a subsequent debate in the Imperial Legislature at Rio de Janeiro, that this officer was sent with discretionary power to fight or negotiate, as circumstances might render necessary. Negotiation was first resorted to, pending which the battery at Humaita was erected, and the imperial squadron, with the exception of the admiral's flag-ship, in which he ascended to Asuncion, was kept below. This river defense was pushed on with great rapidity, and is of such strength that I believe it might have arrested the ascent of the squadron. The delay incident to this negotiation was a move on the diplomatic chess-board showing ability and astuteness on the part of President Lopez. The expedition was at that time a failure; it, however, led to some after-proposition which resulted in an amicable settlement of the differences, and the opening of the Paraguay to Brazilian vessels up to the

northwest province of the empire, whose natural outlet is undoubtedly this river. This act of President Lopez, if extended to all flags, might be classed with the decree of Urquiza which opened the Argentine waters to the commerce of nations.*

In latitude 26° 51′ 52″ south, longitude 58° 28′ 21″ west, forty-eight miles above Cerito, the River Vermejo pours its muddy waters into the Paraguay from the west. It rises in the Cordilleras of the southern parts of Bolivia, and receives, in addition to many minor tributaries, the more important river Jujuy, or Lavayan, which flows from the western ranges of Salta. From Palca de Soria, where the Vermejo may be said to enter the Chaco, it takes the general direction of southeast, under a very tortuous course, to its junction with the Paraguay, directly opposite to a guardia of the same name, undoubtedly placed there to give the republic exclusive control over its mouth.

All the villages and guardias of Paraguay that have been or may hereafter be mentioned, it must be remembered, are on the east side of the river, with the exception of Cerito, which is upon an island. Pilar, in latitude 26° 51′ 9″, longitude 58° 22′ 35″, is the first village we meet with in ascending. In the time of Francia, and before the opening of the river to Asuncion, this town, known as Nembucu, was a place of some commercial activity; that is, it was the only port on the Paraguay open to trade, and even to this point only those vessels that had received especial permission could ascend.

We called upon the commandante, from whom I received many assurances of his desire to serve us. Cigars of the native tobacco were handed around, and caña—a liquor extracted from the sugar-cane, of which each member of the company was expected to take a sip. This liquor is usually taken without water, and is the most potent tipple that I have ever tasted. As soon as good-breeding would permit, I relieved my mouth of the burning sensation it produced by a glass of water. Pilar has two thousand inhabitants, and is prettily placed on a fertile plain, elevated some twenty feet above the river. The streets are at right angles, and the houses, of one story, plastered and whitewashed, are roofed either with tile, the trunks of palm-trees, or thatched.

This species of palm, the Caranday (*Copernicia cerifera*), forms an excellent covering in this climate, and will last for thirty years. The trunks of the trees are divided, and the interior wood, which

* This has more recently been done.

is very fibrous, taken out, leaving a shell of from one and a half to two inches in thickness, which becomes hard and flinty when dry. These are placed side by side, with the convex surface up, extending from the pitch to the eaves; their edges, when brought together, are covered by a third trunk, forming a roof not unlike tile, and quite as impervious to rain. This is the usual mode of covering the quintas and ranchos on the river, and the Chaco opposite furnishes an inexhaustible supply of material.

I found great difficulty here, as in every part of Paraguay, in obtaining any statistics, and can scarcely say whether this was to be attributed to the ignorance of the people, or to suspicion of my motive in making such inquiries. Some of the officers of the Water Witch occupied themselves with observations for geographical determination, while others added to our collection by obtaining specimens of rare fish, and supplied our table with several varieties of excellent quality.

Thirty miles above Pilar the Tibiquari empties into the Paraguay on the left bank. It rises in the central sierras of Paraguay, and in a westerly course passes through the most populous and fertile districts of the country. It could, at a mere nominal expense, be made navigable at all seasons for steamers of two feet draught. The principal products of the interior, corn and tobacco, now transported in wagons carrying one and a half tons each, could be conveyed to the capital in steamers of the capacity of fifty wagons in half the time, and at one third the cost. This river separates the two provinces, Villa Franca on the north, and Pilar on the south. The former is remarkable for its fertility, and its principal town, of the same name, is on the Paraguay, fifty-nine miles above Pilar.

On approaching Villa Franca, I discovered, from the movements of the guard, that we were expected to land; I consequently came to anchor. The bank leading to the town is ascended from the river by a flight of steps, and, as we reached the top, a squad of soldiers drawn up honored our arrival by two rounds of musketry. The novelty of this salute was rather startling, but we acknowledged it with due gravity, as a mark of respect for the "flag." The commandante received us with the usual ceremonies and hospitality.

General Lopez, the son of the president, who is commander-in-chief of the army, was, at the time of our arrival in Paraguay, absent on a diplomatic mission to the leading powers of Europe.

The good commandante spoke with enthusiasm of his absent general. He seemed to have a vague idea that he had been dispatched to a great distance on very important business, but was rather at a loss to know whether that journey extended beyond the limits of Paraguay. He had magnificent ideas of the vastness and political importance of his country, a delusion, I afterward discovered, not peculiar to himself.



USE OF THE LASSO AND BOLAS.

At his earnest request I accepted a beef for the ship's company: for a bullock is here taken from the herd, slaughtered, and portions served up at table in less time than it would take to kill and cook a fowl with us. In an incredibly short time after my acceptance of his offer, a bellowing, plunging animal was brought

under the lasso, to the bank in front of the steamer, and there slaughtered for our use.

Twelve miles beyond Villa Franca, and a quarter of a mile from the banks of the Paraguay, is the village Oliva. Here the river takes a serpentine course, and, for the first time, the banks on the Chaco side rise to the height of twenty feet, presenting a deep stratum of reddish clay beneath the vegetable surface-soil. They are well timbered with lapacho, quebracho, urunday, and a variety of other woods. Again this forest is succeeded by palms, which, like those of Paraguay, rise from vigorous and verdant plains of grass, without under-growth. Oliva stands on a plain twenty feet above the river, which has here overflowed the low lands in front, although this is not the reputed season of high water; for the same uniformity which marks the periodical changes of the Parana does not prevail in the Paraguay. Twelve miles above this village, on the Chaco side, is Monte Linda, a beautiful grove of catigua.

From Oliva to Villa Villeta, the next small town on the Paraguay, the distance is sixty-two miles. We anchored here after dark. As I was anxious to proceed early the next morning, notwithstanding the hour, I called to pay my respects to the chief dignitary of the village, whom I found seated under the projecting roof of his house, surrounded by his family. While the officers amused a group of villagers who had gathered around them with tales of the dangers they had passed, I smoked a cigar with the commandante by the dim light of a lantern that hung in front of his dwelling, designed as much to attract the musquitoes from within as to give light to the company without. Nearly all the houses of Villa Villeta are constructed with these projections, which serve the double purpose of protecting them from the scorching rays of the sun, and in the evening as places of resort for the inhabitants, who there sit, gossip and smoke—the latter an accomplishment not limited to age or sex.

A short distance above this village the fine rolling lands of Paraguay opened before us, with inclosed and well-cultivated fields of corn, tobacco, and mandioca, alternated by beautiful palm groves. Nothing could be more picturesque or verdant than the country on both sides, and we had here what alone was needed to perfect the landscapes below—habitations and culture. Ranchos and quintas, surrounded by orange groves, were dotted here and there, multiplying as we approached the capital.

Six miles above Villeta is the guardia of San Antonio, which was occupied in 1853 by "the American Company" established in Paraguay. Beyond this guardia we passed Mount Lambare, an isolated, conical wooded hill, of basaltic formation, rising abruptly from the river bank to the height of three hundred and twelve feet. On the opposite or Chaco side is the Riacho Yaguare, into which empties the River Ypita, considered by some one of the two mouths of the Pilcomayo.

A mile or two below the capital, the left banks become quite precipitous, presenting a stratum of reddish chalk beneath the surface-soil; and immediately opposite is an island, across which is seen the upper branch or mouth of the Pilcomayo. Here the Paraguay turns abruptly east, and a mile above, on the left bank, stands Asuncion.

We anchored off the town on the 1st of October, and received a visit from the captain of the port. Preliminaries arranged, a national salute was fired from the Water Witch, with the Paraguay flag at the fore, which was returned by the field-pieces of the garrison at the government house.

The general width of the Paraguay up to the capital is half a mile, at some points less than a quarter. The least depth found was twenty feet, the greatest seventy-two, and "no bottom." Velocity of current in general, two miles per hour. There seems to be less uniformity in its rise and fall than in those of the Parana. It has now reached its maximum height, which it ordinarily attains in December, and this is but the beginning of the "rising season." With a view of determining, with some degree of accuracy, its rise and fall, a graduated staff was "planted" in a suitable place, and the fall of the river observed from the 24th of October, 1853, to the 31st of March, 1854, throughout one entire period of falling, and a portion of its rise. It was estimated, at the time of the erection of the staff, that the waters had fallen two feet, and, judging from the rate at which it fell, the river must have been at its highest point the 1st of October. The greatest fall from October 1st to February 5th was thirteen feet three inches.

To a clear comprehension of the fluctuation in the river during the time embraced, I take from the journal the following table kept by Lieutenant Ammen.

Statement of the fall and rise of the River Paraguay, at Asuncion, from October 1st, 1853, to March 31st, 1854. The river was above its ordinary high water on the 1st of October.

	Ft.	In.
From October 1st to 24th, supposed fall by marks . . .	2	00
" " 24th to 31st, by staff, river fell	0	08
" " 31st to 29th Nov. " "	2	06
" Nov. 29th to 27th Dec. " "	4	00
" Dec. 27th to 5th Jan. " "	2	05
" Jan. 5th to 12th " " "	0	08
Fall of river from October 1st to Jan. 12th	12	03
From January 12th to Jan. 21st, river rose	0	11
Difference of level from Oct. 1st to Jan. 21st	11	04

	Ft.	In.	
From Jan. 21st to Jan. 30th, river fell	0	09	
" " 30th to Feb. 5th " "	1	02	
	1	11	—1 11
Greatest fall from Oct. 1st to Feb. 5th			13 03
On February 28th, same level.			
From " 28th to March 31st, river rose			5 09
Difference of level from October 1st to March 31st			7 06

The width of the river at Asuncion by calculation was found to be six hundred and five yards. It has, up to the capital, few islands, and the navigation is less difficult than that of the Parana. Its waters are confined within narrower limits, and its channel has more uniformly the same depth. It has no such obstructions as rocks or sunken trees, but sufficient depth throughout the year for the largest river steamers, and enough at certain seasons for vessels of sixteen feet—the greatest draught that could be carried over the bar at Martin Garcia Island, under the ordinary rise of the tide at that point. The banks are wooded with fine timber throughout, save at limited sections subject to inundation. Much of this wood is valuable for building and ornamental purposes, and also as fuel for steamers, and the waters contain a great variety of excellent fish, that may be caught either with seine or hook and line.

CHAPTER VII.

Interviews with President Lopez.—Negotiations.—Residence at Asuncion.—The City.—Buildings.—Francia's Tomb.—Francia's Cruelties.—Isolation of Paraguay.—Francia's System.—Dahlgreen's Howitzer.—The American Company.—Celebration of Lopez's Birth-day.—Reception at the Government House.—Grand Ball at the Residence of the Chief Justice.—The Speech.

On the day of our arrival I called on the Minister of Foreign Affairs, and presented my letters of credence from the Secretary of State, Mr. Everett. In this interview, "El Secretario" betrayed more curiosity than intelligence as to the objects of our expedition. My visit ended with an appointment to call on the President the same day at 4 o'clock.

I was punctual to the hour, and found the corridor that surrounds the government house filled with soldiers, who gave the usual military salute as we passed. On entering the vestibule, where was stationed a small guard, an officer received my card, and taking it in to the President, I was, without a moment's detention, admitted to his presence. A door, on each side of which was stationed a soldier, gave access from the vestibule to a long, plainly-carpeted room, against the walls of which stood a row of cane-seat chairs, arranged with military precision. At the upper end was a circular table, where sat, with one arm resting upon it, "His Excellency Señor Don Carlos Antonio Lopez," President of the Republic of Paraguay. The engraving on the opposite page will give the reader a more vivid impression of His Excellency's personal appearance than any description I could possibly offer.

A chair was placed (I presume purposely) at the table before him, and, slightly raising his hat, without rising, as I approached, he requested me to be seated, and to place my hat on the table, which I afterward discovered was an act of condescension not to be too lightly esteemed. I showed him my commission from the President of the United States, of which he requested a copy, and explained to him the objects of the expedition under my command. This reception was very unlike the unpretending but courteous style of the Provisional Director of the Argentine Confederation. I afterward learned, however, that it was the usual

etiquette observed by the President of Paraguay on all official occasions to remain seated with his hat on. The higher the rank of the visitor, the more particular is he in this observance. Subsequently I had frequent interviews with him, and occasionally I have known him to relax somewhat, and even to take his hat off; a mark, I was assured, of extraordinary personal favor toward myself. He is about fifty-four, and has never been out of the confines of Paraguay, where, though ruling under the title of President, his authority is despotic and unquestioned. He is highly intelligent, well read, and familiar with the polity of foreign governments; he is also an accomplished, but, as I afterward discovered, unscrupulous diplomatist.



CARLO ANTONIO LOPEZ, PRESIDENT OF PARAGUAY.

Owing to the isolated position of his country, and her freedom, so far, from friction with governments foreign to La Plata, or from checks at home, he is rather defiant of the laws of nations. I found him, in conversation, far more agreeable and affable than I

had been led to suppose. He talks much, and well. After an interview of more than an hour, protracted by himself, he rose, and I took leave, impressed with his favorable disposition toward the expedition.

After the lapse of a few days I called again, and presented the President with the plan of a steamer we wished to construct at Asuncion for the survey of the smaller tributaries of the river. I also gave him an estimate of the timber required for this purpose —for this is one of the national monopolies—and President Lopez being the government, all business to which it can be a party must be transacted with him. He examined the plan, read with care our list of requisites, and promptly said that instructions should be immediately given to supply us with the articles enumerated, and any others that might be necessary for our purpose.

We at once made preparations for building our little craft. The whole was intrusted to Lieutenant Ammen, who had drawn the plan, and now, with the assistance of one of the engineers, Mr. Lambden, began the work with energy. In the mean time I occupied myself with arrangements for continuing the exploration of the Paraguay. To obtain the necessary permission for this required some diplomacy, for in the treaty of commerce and navigation concluded before my arrival it had been stipulated that the navigation of the river should be limited to Asuncion.

There were unsettled questions as to territorial limits on the northern borders between Brazil and Paraguay, and the prohibitory decrees of President Lopez, in reference to the navigation of the river above the capital, were made with the view of forcing Brazil to terms. In excluding other nations, without any positive demonstration of hostility toward his Imperial Majesty, he deprived him of access through the Paraguay to the richest mineral districts of the empire. He said that, should he permit the Water Witch to ascend the river, Brazil would make the same demand, and he was resolved not to grant her that privilege in the present state of their political relations. I argued the character of our expedition; its manifest objects, which should not be considered in connection with others of a speculative or solely trading character. I suggested the possible value of its results to science, which I knew his intelligence enabled him fully to understand; that, in giving to the world a knowledge of waters "so little known," our explorations would confer a positive and immediate benefit upon his own and neighboring countries, while the people

of the United States, and others at a greater distance, could be only remotely or incidentally interested.

The point was conceded, and I was, of course, disposed to put upon it the most latitudinous construction; that is, to ascend as far as I could in an ocean steamer. I understood uniformly, in my conversations with President Lopez, and from an official paper sent me relating to this subject, that I could carry our surveys throughout the limits of Paraguay north, or, indeed, beyond them, for permission was given me to ascend to Bahia Negra, in latitude 20° 10′ 14″.

Bahia Negra is conceded to Bolivia by both Brazil and Paraguay. From that point the President could neither direct nor check our operations, for I had already received permission from Bolivia to enter her waters, and from Brazil to ascend to Albuquerque, which was some distance within the acknowledged limits of the empire. I in fact ascended to Corumba, and should have gone farther but for the limitation designated by Brazil, and yet have felt that I had not placed too wide a construction upon the concession of the President of Paraguay.

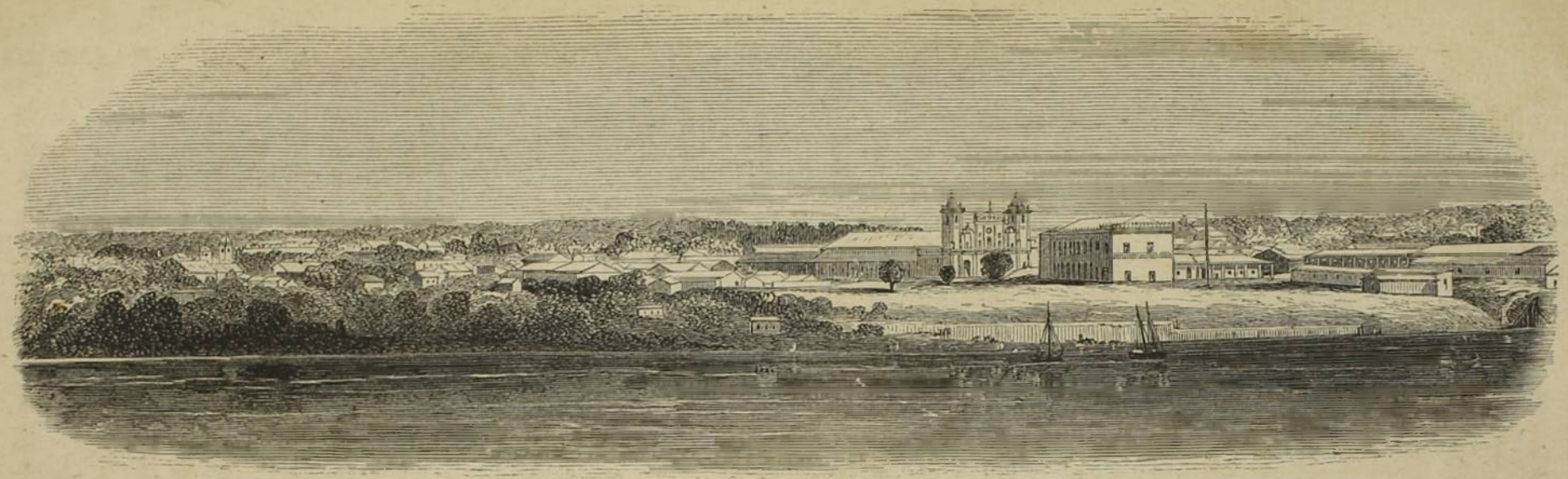
Before beginning the ascension of the river, I was obliged to contract for the delivery, at different points, of steamer fuel. This was again an official affair, and led to several visits to the government house. The agreements were all satisfactorily carried out; but the cutting of woods for such a purpose being a new branch of industrial enterprise in those remote parts of Paraguay, I paid high, considering its extensive forests—that is, from four to five dollars per cord. The quality, however, was excellent, one cord proving fully equal to a ton of coal.

When we arrived at Asuncion, I was aware that the business to which I have alluded would detain me some time; I anticipated, indeed, unnecessary delay, and knew, from experience, that it was useless to complain. One must enter upon every work in Spanish America with rather a patient, philosophical spirit; but I soon discovered that, even with the Paraguayan, the almighty dollar had its influence, and believe that I eventually expedited the operation of my wood-cutters by adding a few additional pennies to the price per cord.

Pending these preparations, and to avoid, in some degree, the excessive annoyance from musquitoes, I moved to an apartment in the "Calle del Sol." The rooms were nicely whitewashed, and, to rid them of the army of fleas, common enough to every house,

my servant waged a successful war against them by flooding the tile-floors daily with water. The furniture was simple. There was a cot, with a snowy musquito-net, which had done good service during a long cruise in the China seas; two cedar tables, two feet by four, served, one for dining, the other for books and writing materials; some crockery from the Water Witch, arranged by my boy in a cupboard, made a brilliant display, but a dozen richly-carved, high-backed chairs, which dated from the time of the Jesuits, were the pride of the establishment, for in art those missionaries were the Medici of La Plata. My "boy" was chambermaid, butler, and cook. Roast beef, chickens, mandioca—a vegetable that would in any country be pronounced delicious—oranges at all times, grapes and figs in their season, were the luxuries of the table. Fine fish might have been added but for the indifference, indeed dislike of the Paraguayans, like all Spanish Americans, for that food; for in towns rarely visited by strangers it is not often seen in their markets. Perhaps these may be considered trivialities; I allude to them in illustration, for my style of living was not surpassed, if equaled, by that of the best houses of Asuncion. There is no lack of neatness in their domestic arrangements, but no people are more simple in their habits; indeed, one needs so little in that delicious climate, the costly and elaborate furniture, considered now a necessity in our country, would be here an annoying superfluity. Imperial carpets and brocatelle hangings would be as much out of place in Paraguay as a costume of the dog-days upon a Broadway pedestrian in the middle of January.

Asuncion was first settled in 1536. It contains now about twelve thousand inhabitants, and is, according to our determinations, in latitude 25° 16′ 30″ south, longitude 57° 42′ 42″. It is prettily placed, the land rising, at the point where the city stands, some fifty feet above the river. With a few improvements, its position for commercial purposes would be eligible, but individual enterprise has little scope, for the playa or landing is government property. During our stay in the country a quay of stone was built, and, though undoubtedly an important work, it would by no means sufficiently facilitate the dispatch of business should Asuncion ever have an extensive foreign trade. The people are wedded to old habits, and will forever discharge and load vessels by canoes, should not some enterprising foreigner suggest a change. Owing to the extraordinary edicts of Francia, the streets are regular, and the frontage of the houses even; for any luckless proprietor whose



ASUNCION—*Fig. No.* 1.

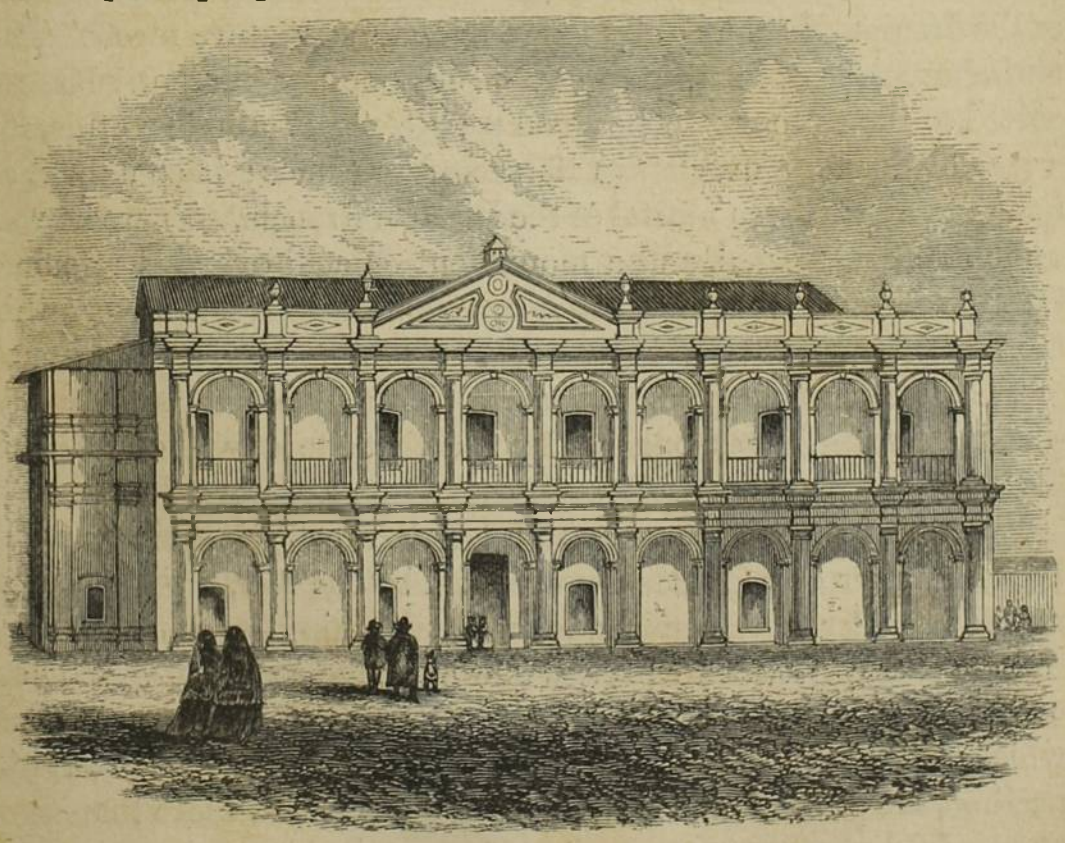


ASUNCION—*Fig. No.* 2.

building impaired this uniformity during his administration had the satisfaction of having it, without previous intimation, undermined, halved, or quartered, as the exigencies of the case might require. A piece was nicely sliced off, leaving saloons and bedrooms minus half their previous dimensions. Some of these unfortunate tenements are still standing, looking like a "big loaf" after dinner.

The dwellings are uniformly of one story, some of them being large and well-constructed, containing six, eight, or ten airy rooms opening upon a court. The bricks of which they are built are peculiar in form and size, being from twelve to fourteen inches in length, eight in breadth, and about two in thickness. The better houses are tiled, the roofs projecting some three or four feet beyond the eaves, but, in the erection of others more ordinary, the roof is the first part completed; posts are driven into the ground, on these are placed sleepers to support the joists and rafters, strips of the caña or bamboo are placed transversely across, sufficiently close together to retain the mud or mortar, which serves to cement the joinings or unite the tile. In such houses the trunks of palm, prepared as I have described, are more frequently used than tiles.

The principal public buildings are the "Cabildo," the Cathedral,



THE CABILDO, ASUNCION.



THE CATHEDRAL, ASUNCION.

and two or three other churches, the latter dating from the time of the Jesuits. In the Cabildo the national Legislature meets. The churches are kept in good condition, but one was evidently less resorted to than others. The good people rarely allude to this, for a fearful mystery overhangs its sacred precincts; it contained at one time all that was mortal of the Dictator Francia. There he was undoubtedly interred, and a monument erected over his remains. One fair morning the church was opened, as usual, for prayer; this monument was scattered in fragments upon the floor, and the bones of the tyrant had disappeared forever—nobody cared how, nobody asked where. It was only whispered that the devil had claimed his own, body and soul.

No modern era has produced a parallel to his iniquitous rule. For a quarter of a century, unchecked by the fear, reproaches, or notice of other governments, Francia tyrannized over this lovely country, and perpetrated a series of crimes, the recital of which fills us with horror. At his death, spite of the numberless executions which disgraced his administration, and which must have been his pastime, the prisons of Asuncion were gorged with more than seven hundred poor creatures, some of whom had been there twenty

years. They were broken down physically; some were reduced to hopeless idiocy, and all were given back to the world to find that homes and families had been swept away during that fearful deluge of tyranny.

It will be seen in another chapter that it was the policy of Spain, in her colonial government, to keep her transatlantic subjects from all communication with the outer world, while, at the same time —for this was the object of that system—the extent and resources of her possessions upon the American continent were carefully veiled from the knowledge of European nations. Paraguay, between the parallels of 21° and 27° south, distant by the course of the river about one thousand miles from the Atlantic, and shut out from the Pacific by the Andean barrier, remained a *terra incognita* to all but Spanish officials. Aided by her geographical position, she was the first of the colonies to assert her independence; but soon passing under the sway of Francia, who inflexibly maintained non-intercourse with other nations, she has continued a region of the unknown.

While the other republics of La Plata were, after their emancipation from Spanish rule, distracted by anarchy, Paraguay was comparatively tranquil; it was not the quiet of progress and good government, but that of a political and social paralyzation, produced by the system of Francia—a system that debased the national mind, leaving it submissive to any rule, without moral or physical courage to resist oppression.

He established, in time, such a compound system of espionage—spy placed over spy—and coerced the simple Paraguayans during his twenty-six years' rule into such timorous silence, that death seems scarcely to have released them from his thraldom. The people of the lower countries of La Plata will tell you that a Paraguayan never mentions the name of the Dictator without looking behind him. His adherents and the instruments of his iniquity were the soldiers; his victims, landed proprietors; but, above all, those of Spanish origin, from confiscations of whose property his principal revenue was derived.

When at Asuncion I saw much of Señor ———, whose family had suffered greatly during that reign of terror, and in his conversations with me he frequently alluded to their wrongs. He was an amiable, gentlemanly, and intelligent person; but he always mentioned the name of Francia with reserve, in a half whisper, glancing stealthily around the room, as if fearful that the grave

would give up its dead. I afterward discovered that the manner was not peculiar to him, but to all Paraguayans in alluding to the Dictator. His name is rarely pronounced. In life he was *El Supremo;* since his death, they allude to him and to his deeds as those of *El Defunto.*

The United States government sent out by the Water Witch one of my friend Dahlgreen's "twelve-pound howitzers," to be presented to the President of Paraguay. A day was appointed for its delivery, and the second son of the President, Don Benancia, a major in the army, was deputed to receive it. Many officials and quite a concourse of people assembled at the point chosen for its reception. Mounted on its field-carriage, and manned with a good crew from the Water Witch, it was loaded with its "fixed ammunition" in double-quick time, pointed across the river to the Chaco, and fired in rapid succession, keeping two shrapnells at the same time rolling on the water, while the contents and fragments of those that preceded them and exploded had demonstrated the deadly effect of this modern missile of war. The assembled crowd looked on in wonder. The firing over, the men dashed off with the gun at full speed, thus exhibiting its facility of locomotion as well as rapidity of discharge. Major Lopez expressed himself delighted, and declared that, with a battery of half a dozen such pieces, he could defend the approach to Asuncion against vast odds.

I quote from my journal:

"*October* 17*th.* Arrived from Buenos Ayres a steamer called the 'Fanny,' sailing under Montevidean colors, having on board Mr. E. A. Hopkins, United States Consul for Asuncion. He is also agent for 'the American Company,' several members of which are on board, having come to Paraguay with the view of establishing themselves for commercial purposes, and, judging from the resources of this country, they should meet with great success." On the day appointed for Mr. Hopkins to present his credentials to the President he was accompanied by myself and many of the officers of the Water Witch.

All was ready to proceed up the river, but I was requested to remain a few days and witness the great fête of Asuncion, the anniversary of his Excellency's birth-day, the 4th of November, on which occasion there is a public reception. But one class of functionaries or visitors is received at a time; the clergy had preceded us. As they retired we entered, and found "President Lopez," as usual, at the end of the long room I have described, seated be-

fore the circular table, dressed in a uniform of buff and gold; wearing in place of the usual round beaver a cocked hat with gold lace and ostrich feathers. After offering him our congratulations, we retired to make room for others, and were conducted into an adjoining apartment to partake of refreshments, provided in great profusion, and consisting of excellent confectionery, cakes, Champagne, English ale, coffee. We were treated with much kind attention by the different officials, and the occasion seemed to be one of enjoyment to all classes.

The day concluded with a ball given by the Chief Justice, at which were present not only all the beauty and fashion of Asuncion, but the President and his family. Seats were especially prepared for them at one end of the room; that for his Excellency was on a carpeted platform elevated about one foot above the floor. Opposite were rows of chairs for the matrons, who seemed to have attended for the sole purpose, and to find full occupation in watching their fair daughters; for the Spanish American girls, like those of the European continent, are never seen, even by their lovers, out of the presence of mamma, or some matron to whom their care is delegated. Madam Lopez and her daughters were pleasing and ladylike; the latter, like all women of the country, extravagantly fond of dancing, but the ill health of the younger on this occasion deprived her of this enjoyment. At an early hour of the evening the music suddenly ceased, and there was perfect silence. A tall personage—we were told that he was an LL.D.—moved to the centre of the room, made a profound bow, and then, with vigorous gesticulation and imposing solemnity of mien, delivered an address highly flattering to the chief magistrate of Paraguay, who received it with calm, unmoved countenance, and at its conclusion retired. The company, all standing, listened to this rather flowery effusion with gravity and respect; but as the door closed upon his Excellency, dancing recommenced, and was kept up until the dawn of day.

CHAPTER VIII.

Departure from Asuncion.—The President's Quinta.—Salinas.—A Hill.—The Confuso.—The Salado.—Estancia of Lopez.—Variety of Woods and Fruits.—Quebracho.—Capiepomo.—Guazu.—Cattle.—Hospitality.—River Scenery.—An Accident to Engine.—Piquete Ytati.—Wood for Steamers.—Plants and Shrubs.—River Jejui.—San Pedro.—Another Accident to Engine.—Guaycuru Rembiu.—Government Estancia.—The Pacu Fish.—River Changes.—The Ypane.—Arrival at Concepcion.

I QUOTE from my journal:

"*November 7th*, 1853. We left Asuncion this morning at half past five o'clock, upward bound. The reply of the President of Paraguay to my letter requesting permission for the expedition to pass through the territory claimed by his government is all I could desire; he attaches no limits to the extent of our explorations on the river. Have in view the President's quinta; it extends for six miles along the river; all is verdant and enameled with cultivation. At the highest point of the rolling land, which rises in wave-like ridges from the river, is placed the dwelling, commanding an extensive view, including the salinas, which at times present a busy scene; for here, in small huts, the salt-gatherers establish themselves during the season of low water, and, by a rude and primitive process, manufacture an extensive supply for the Asuncion market: it is inferior to the imported article, but for cattle or ordinary purposes serves very well. Extensive saline districts exist in the Chaco; the rivers that flow through that country are, with few exceptions, brackish, but this is the second instance in which we have met with this formation east of the Paraguay; the first was below the capital, near Mount Lambare. The earth, when first turned up, exhibits no evidence of the presence of salt, but after being for some time exposed to the sun, it becomes covered with a crust, looking like a white frost. The people collect this efflorescence carefully, but it is from the water, through which the earth is repeatedly washed to extract all saliferous particles, that the principal supply is obtained. In a country rich in pasture-lands, and so far from the ocean, this provision of Providence is only one among the multiplied evidences of bounty to these fair regions of creation."

On the President's lands is the port Lasararaxas—the family name of Madame Lopez—and in operation near it are several ex-

tensive brick-kilns. Twelve miles above Asuncion there is, on the Chaco bank, an isolated conical hill of mica schist rising to the height of one hundred feet, the first elevation on that side exceeding twenty feet since leaving "Santa Fé, seven hundred and twenty miles below. It furnishes a quarry of building-stone from which great blocks are rolled down by a gradual descent to the water's edge.

Immediately above this quarry, the River Confuso, a narrow, tortuous stream, taking its rise no one knows where, discharges itself into the Paraguay. At a subsequent period Lieutenant Murdaugh ascended it for twenty-four miles, encountered some difficulties in the navigation, and made slow progress, though in a steamer of but two feet draught. From his account of it we must conclude that it has its source in the eastern Cordilleras of Bolivia. It has been supposed to be a branch of the Pilcomayo, and is marked on some maps as such, but the difference in the character of their waters must set at rest this idea. That of the Pilcomayo is brackish only when the river is unusually low and sluggish, while that of the Confuso is decidedly bitter and saline. The Confuso, like many other rivers of the Chaco, is probably pure at its source, and becomes impregnated from flowing through saliferous districts. Considered as a branch of the Pilcomayo, the distance through which it would course before reaching the Paraguay is not sufficient to produce so great a change in its waters. If a distinct river, rising, as I believe, in the high lands of Bolivia, it is but a new link and another evidence of the beautiful river system which characterizes the basin of La Plata.

Four miles above the quarry, on the Chaco side, a conical rock, called the "Pinon," rises about twenty feet above the water, in the middle of the river. It is surmounted by a block of red sandstone of about six feet diameter at the top, so symmetrical and so nicely adjusted that one might suppose it to have been designedly placed there by some skillful hand. Directly opposite, a small stream, the Salado, which flows from the Lake Ypacaray, discharges its waters into the Paraguay. The country around the lake and bordering this little river is populous and fertile; during a season of extreme drought the Salado is slightly brackish, as its name indicates.

At Quatros Bocas—"Four mouths," four miles above the rock Pinon, the character of the banks on either side is the same, but some distance inland the scenery changes. There is in view a

sierra, or beautiful range of high land, which is known to extend easterly from the Paraguay nearly to the Parana.

Near the Guardia Arigutigua, twenty miles from Asuncion, the "Pirebeby" flows into the Paraguay, and forms the southern boundary of an estate belonging to President Lopez, which has its northern limit on the River Paraguaymi. This estancia extends fourteen unbroken miles on the Paraguay, is particularly fertile, and well stocked with horned cattle and sheep; mandioca and corn are cultivated upon it to a limited extent, as provision for the *capitaz* and *peons*—manager and laborers. Two miles above Pirebeby, and about the same distance inland, is the little town of "Ambuscada," at the foot of the sierra.

In latitude 24° 54′ 32″ south, longitude 57° 21′ 15,″ forty miles from Asuncion, we reached the first point at which the wood-cutters agreed to furnish us with fuel for the steamer. I found them punctual to the time, and the wood was all corded, and conveniently placed for being received on board. The bunkers were half full of coal, but we were able to take in thirty-nine cords. In this lot were some ten or a dozen varieties: the Palo blanco, Curupina, Curupay, Arahan, Yrapipe, Espina de Corona, Yrapita, Nangapare, and many others of fine texture are found throughout this country, such as the Algorroba, Espinilla, and Quebracho, or "axe-breaker," as its name indicates. All of these trees furnish good fuel for steamers, but in ship-building or for ornamental purposes they would be invaluable.

Some of them are giants even in the La Plata forests; others present great floral beauty; some are valued for their fruits, others for their barks; indeed, familiar as I am with the woodlands of the northern section of this hemisphere, as we advanced in the ascent of the river, I was filled with wonder at the surpassing wealth of the forest regions of the south. An accomplished arborist would find in Paraguay an unlimited field of interest and study. The fruits of the Arahan and Nangapare are both pleasant and nutritious. The Algorroba, one of the mimosæ, produces a fruit similar in taste (though smaller) to our honey-pod. It contains a quantity of saccharine matter, and is carefully gathered by the Indians, who dry, pound, and preserve it in skins; they also make from it a fermented liquor of which they are very fond, but to me it was unpalatable. This tree flourishes in the Argentine Confederation, where its fruit, considered very precious food for cattle, is gathered, and generally put aside for favorite horses. These animals

when fed upon it, if not severely exercised, become too fat for active service.

The width of the river at this point, as ascertained by the micrometer, is one thousand and seventy-six yards. Its general width from Asuncion to this place is from a half to one mile; least depth twenty feet, greatest seventy-two. The banks have an elevation of fifteen feet at the present state of the water, which is four feet below the highest rise. They are well timbered; the woodland extends some distance back, with intervening sections of palm and grass. Between the towns few houses are to be seen except the guardias, near which are always extensive estancias.

Fourteen miles farther (latitude 24° 48′ 27″) we passed another estancia of President Lopez, called Capiepomo Guazu. The dwelling is in the usual style of the better class of country houses in Paraguay, of one story, very capacious, and built round a court; it stands about half a mile from the river, in the midst of a palm plain, skirted with magnificent and lofty trees. The corrals upon these estates are an invariable evidence of the wealth of the estanciaro, and here they were large and numerous.

We anchored as the sun was sinking below the horizon in a sea of gorgeous tinges; and as night approached, with little or no interval of twilight, flocks of sheep, by thousands, might be seen gathering under the shelter of the corrals. The number of horned cattle on some of these estancias is enormous, and, with a free communication to the Atlantic, we can understand how great a revenue they would afford. Found at our anchorage forty-eight feet of water, the width of the river being half a mile, the least depth twenty-four feet; current at anchorage two and a half miles per hour. Engaged a bullock and a quantity of fresh milk for an early hour the next morning. The cows are milked but once a day—in the morning always. The capitaz would receive no pay for either, and, on inquiring, found that this was in accordance with the orders of the President. This is only one of what I consider a series of national civilities, offered with a delicacy which reflects high honor upon his excellency. Indeed, government hospitality represents a characteristic of the Paraguayans. A more generous, single-hearted people it is impossible to find, and they have a native tact which rarely offends even the conventional ideas of those who have associated more with the outer world.

Much as I was obliged afterward to disapprove and deprecate the course of President Lopez toward the Americans who had set-

tled in Asuncion, and in the unprovoked attack upon the Water Witch while ascending the Parana, the reception of the expedition in his waters, and his entire course toward us, until his outbreak with the consul, was characterized throughout by generous hospitality.

At an early hour our bullock was dragged by the lasso from the corral to the river bank, and in an incredibly short time served up on board ship. We soon passed the grass-lands of Capiepomo, where the banks are low, and covered with forests of lofty trees; parasites and epiphytes, with brilliant and fragrant bloom, entwine themselves around the huge trunks, here presenting a floral column, there running over branches, and from tree to tree, forming hanging gardens. To complete the enchantment, birds of gay plumage flit about, enlivening the woods with their merry songs.

We passed another estancia near the Guardia Caraguatay. The left bank again rises to the height of fifteen feet, and is well wooded; beyond, a boundless plain of palms aud grass. Saw many fowl, among which were the *Pato real*—"Royal Duck," and *Bigua bay*—"Snake-head." The starboard crank-strap broke, and we anchored to repair damages. In an hour we were under way, and passed the mouth of the River Quarepoti, seventy-two miles from Asuncion. On this stream, three miles from the Paraguay, is the town of Rosario, but hid from our view by the woods. Passing an estancia of General Lopez, son of the President, and commander-in-chief of the army, we anchored off the Piquete Ytati, our second dépôt of wood, one hundred and two miles from Asuncion.

The President's orders were carried out as to the quantity and size of this wood, and there was a punctuality in its supply which, I feel assured, without his instructions, neither love nor money could have procured. I found here fifty-two cords well cut and put up; a familiar sight to us, but a novel one to Paraguayans. Our experience demonstrates fully not only the possibility of obtaining abundance of wood in these waters for steamers, but the fact of its superiority to all used similarly in our own country. In running from 5 to 10 o'clock A.M.—five hours—and from 1 to 5¾ P.M.—in all, nine hours forty-five minutes—we consumed five and a quarter cords of wood, a little more than half a cord per hour, keeping up twenty pounds of steam, making from eighteen to twenty revolutions, and giving a speed of six miles over the bottom, against a current of from two to two and a half miles per hour. An accurate account of the consumption and careful meas-

urement of the wood were kept and made by the senior engineer, R. C. Potts, with the view of testing its quality. The result proved what I have before affirmed, that a cord of this wood was fully equal to a ton of the best anthracite coal.

The width of the river at our anchorage by micrometer was six hundred and nineteen yards; the general width from our last anchorage from a third to a quarter of a mile; least depth of water seventeen feet.

Employed the morning while wooding in a stroll through the forest skirting the river, from which our supply of fuel had been cut, in search of botanic specimens. Gathered a few, among which was the *Guayava blanca*, a shrub bearing a beautiful white flower very like the orange blossom; its fruit is delicious, and its twigs were covered with nodules of white wax, deposited by a species of ant in such quantities that the people of the country collect it and mould it into candles. We saw also the lofty Yarumu, or Hivapuru, which bears a violet-colored fruit about the size of a plum, and much liked by the natives; we thought it indifferent. It is directly attached to the trunk and branches, without a peduncle. Saw numberless epiphytes; they are found in every part of La Plata, and generally near a dead tree, around which they entwine themselves, making what would be otherwise an unsightly skeleton the most beautiful object of the forest. This is a favorite plant in all city gardens, requiring no care, as it finds its nutriment in the air. Some are selected for their brilliant flowers, others for their fragrance, which exceeds in delicacy that of most flora.

Having wooded, pushed on, and about two and a half miles above the Piquete Ytati, passed the mouth of the Jejui, a small river which flows from the left bank. It rises in the Cordilleras of Paraguay, courses through a part of the Yerbales, and offers an easy communication for the conveyance of this product to San Pedro. After the construction of the small steamer, it was used by Lieutenant Ammen in the examination of this stream, but, as he ascended at the season of low water, he found it impracticable to proceed farther than a few miles beyond the port of San Pedro, latitude 24° 5′ 26″, longitude 57° 13′ 7″. The village of San Pedro is two miles north of the port. The note-book of Lieutenant Ammen in reference to it says:

"We had a succession of sand-bars up to this port, on an average one to every four hundred yards. A steamer navigating the river even to San Pedro should not have a length greater than

eighty feet, should be flat floored, and be capable of making eight statute miles, the average current being equal to three and a half. Arrived at the port of San Pedro April 16th, 1854; visited the commandante, who received me with every possible kindness, and supplied me with horses to go to the villa of San Pedro, two marine miles due north. We were met by Don Louis Cara, the priest, the captain of the port, and ten or twelve others. They expressed a desire to visit the vessel. After an examination into and explanation of every thing, we accompanied these personages to the villa, and stopped at the house of Don Louis Cara. The day following, the vessel was overrun with visitors. The commandante gave us a grand ball that night, at which all the ladies wore shoes. The authorities and grandees were overwhelming in their politeness. On the day after the ball, with a party consisting of the officials and the ladies on board, we proceeded on, taking the canoe in tow for their return. They went up with us a mile, and left, highly gratified that they had seen a steamer function."

My own journal says,

"*November* 10*th*. Observed on the bank a wooden cross; was informed by the pilot that it was the grave of a poor woman who had died there suddenly. Surely we, in our boasted civilization, might borrow from the primitive customs of this country; no grave, however humble the former position of its occupant, is here unmarked by this symbol of Christianity. For the second time since leaving Asuncion the engine is 'hors de combat' by the breaking of another crank strap. While this damage was repairing we went on shore, and making our way up the bank (which was here about fifteen feet above the water), and through an almost impenetrable fringe and network of vegetation, we spent the few remaining hours of daylight in searching for specimens. Collected a few plants, among which was the *Guaycura rembiu*, a creeper, bearing a pretty white, waxlike flower; its fruit is highly esteemed by the Indians, who collect it when green, and roast it. When ripe it bursts its shell, and exposes beautiful and delicate silklike fibres, to each of which is a seed.

"*November* 11*th*. Under way at eight o'clock this morning, having made a strap with the best iron on board, one of the awning stanchions. The government owns extensive estancias and immense herds, which furnish the army with beef. For some hours this morning we were steaming past one of these estancias, well stocked with the finest cattle: it is known as Estancia Potreropora.

Found here a large quantity of wood conveniently corded. Wherever the pampa is unbroken by a mountain spur, or the banks present a sectional view of their formation, they show a stratum of white clay, with a surface-soil of rich black earth from two to four feet in depth.

"Anchored near the Piquete Caruyparti, and off the estancia of Don Francisco Antonio Garcia, near which is the port Piedrenal. The following morning detained by a rain, which here not only pours, but falls in sheets. Measured the river by micrometer, and found it to be one thousand one hundred and seventy yards wide. Caught some fish, the pacu, the best in these waters. In six hours from Puerto Piedrenal we arrived at the town of Concepcion. In the depth of river and character of its banks up to this place found no material change save at the island Toro, about five miles from Puerto Piedrenal, where there are two islands, the one near the Chaco side formed since 1842. The channel has shifted more to the east, and has fifteen feet water, the least depth as yet found between Asuncion and Concepcion.

"Many seals have been seen during the last two days. There is one feature in the character of these rivers worthy of note—the apparent inclination of the waters to encroach upon the east bank; a question suggests itself, Has the revolution of the earth any agency in this change? The newly-formed islands are uniformly on the Chaco side; so far, the channel inclines undeviatingly to the east. If influenced by the earth's revolution, the effect should be as it here appears. Rising in the equatorial regions, and coursing south through a vast extent of pampa, this river, in conjunction with the Parana, presents the fairest opportunity of arriving at a solution of this question. Ten miles below Concepcion we passed through a narrow arm of the river on the east, at this time the main channel; it has a depth of twenty-two feet, and a width of from sixty to seventy yards. The water is fast deserting the old bed of the river, which, though half a mile wide, has scarcely depth enough for a boat. We passed the mouth of the Ypane, about five miles below Concepcion; though it rises in the distant sierras of Paraguay, it is only navigable for boats. Directly opposite its mouth is the Riacho Lingua Passo, formed by an island of the same name. This riacho was in 1842 the main channel, which is now east of it—another evidence of the movement of the river in that direction.

"As we approach Concepcion the formation of the bed of the

river changes, and the channel is contracted by rocks on either side. There is, however, neither danger nor difficulty in the navigation, for we found never less than twenty feet water.

"Anchored in front of the town, and by measurement ascertained the river to be at its narrowest point three hundred and forty-four yards; velocity of current two and a half miles per hour; temperature of air at meridian 81°, of water 84°. Found here two small craft taking in yerba for Asuncion."

CHAPTER IX.

Concepcion.—Yerba.—Government Monopolies and Restrictions placed upon Trade.—Favorable Reception.—Guembe and Guembetaya.—The Water Witch.—A Ball at the Commandante's House.—A Quandary.—Danced down.—Señor Tachiera.—Costumes.—Wood for Steamer.—Rio Saladillo.—Salinas.—Indians.—The Caciques.—A Shaking of Hands and a Smoke.—Palm Forest.—Salvador.—Heat.—State of the Country.—The Abatiguaniba.—Caraguatay Guazu.—Manufactures of its Thread.—Thorns converted into Needles.—The Datil.—Reptile Hunting.—Supplies.—Value of Hide.—Piquete Arracife.—Heat.—Paso Melo.—Mounted Indians from the Chaco.—Piquete Judiarte.—Guardia Apatuya.—Beautiful Scenery.—The Morada and Ytapucu Guazu.—The Children of the Gran Chaco.—Equestrian and Pedestrian.—Size, Strength, and Longevity.—An Octogenarian in the Flower of his Age.—Nabidigua.—The Mbayas.—Their Slaves.—The Guarani.—Spiritual Notions of the Aborigines.—No Word for God or Divinity.—Aharaigichi.—Jupa.—Inferior Creatures or not?

CONCEPCION, in latitude 23° 23′ 56″, longitude 57° 30′ 39″, contains about two thousand inhabitants, and stands on a plain, which, at the ordinary height of the river, is twenty feet above its level. It was at one period a flourishing town, and should now be an important port for the export of yerba and caoutchouc, but the policy of the Paraguayan government, in monopolizing the trade in all native products of value, tends to check any spirit of enterprise which might tempt individuals or companies to build up a commerce in these articles. All trade is centralized at Asuncion. The government is the principal merchant, in virtue of its own decree, and the prices paid by this factor are not sufficiently remunerative to induce laborers to enter the field, fruitful as it is. There are *Yerbales*, or "Yerba Districts," in the interior, some sixty or seventy miles from Concepcion, to which place their product is transported in ox-wagons.

In the gathering and preparation of this yerba for market, there are two modes of procedure; either to instruct the commandante



CURING YERBA.

of the district to enter the yerbales with the force at his command, or to grant permission to certain contractors to do so. In the first case, the laborers are paid in goods from the public stores at the rate of twenty-five cents the arroba; in the latter, the agent or contractor delivers at Asuncion two thirds of the whole quantity, packed in hide sacks, containing eight arrobas each, called *tercias;* he bearing all the expenses of labor, transportation, and cost of the hides for the tercias. This yields a handsome income to his Excellency. The export amounts annually to not less than ninety thousand arrobas, and he sells it at about four dollars the arroba; he therefore receives about three hundred and sixty thousand dollars from this one article, and without the expenditure of a dollar; to which should be added a revenue from hides, timber, horse-hair, etc., amounting also to a large sum.*

There is no restriction on the home consumption, but the merchant who wishes to export this "tea" must purchase from the state. The rulers of this fine country have many valuable lessons to acquire in political and financial science. By opening

* The process of preparing the yerba will be found fully detailed in Lieut. Powell's "Journal of a Tour through the Yerbales of Paraguay." See Appendix E.

their waters to foreign flags, and encouraging home industry, even in the collection of indigenous products, and without the application of agriculture, the revenue from import and export duties would far exceed that of any monopoly now usurped. Under the present system, there is a stagnation of all trade at this place, and the people are poor, and evidently inert, but, like all Paraguayans, hospitable. We can only hope that the reactionary spirit which has crept into the Argentine Confederation, and the enlightened ambition of General Urquiza to elevate his country, politically and socially, by a liberal constitution, education of its youth, and direct foreign trade, will prove contagious, and work their course toward the northern republic of La Plata.

Soon after anchoring I called at the commandante's, where I met the principal personages of the place, who were emphatic in their offers of service, seeming to consider it a point of national honor to give us a distinguished reception. Isolated as the Paraguayans have been, they are animated, I observed, by a strong nationality, intense love of country, though not awakened to any application of its surpassing natural wealth to the requirements of trade. To express appreciation of Paraguay, we discovered, was a sure avenue to the hearts of these people; and this tribute we could offer them in all truth and sincerity. Horses were tendered us, with the assurance that they would continue at our disposal while we remained at Concepcion; and, as sailors rarely decline such an opportunity of exercise, we availed ourselves of the tempting favor, and visited the adjacent country, which is flat, sandy, and uninteresting.

We passed an indifferent house here and there, surrounded with little and poor cultivation, but collected a few plants, among which was the parasite guembepi or guembe. I pulled one from the limb of a quebracho, thirty feet from the ground, to which its tendrils had descended, and taken root in the earth. This is one of the most useful plants in Paraguay, for from its fibre is manufactured an admirable rope, of which all the hawsers and tow-lines used by vessels in the river-trade are made; indeed, before the Revolution, it was extensively used in the navy of Spain. The guembe and the guembetaya are so similar in appearance that they are often confounded, but they have very different characteristics, as I ascertained by observation, which was confirmed by information derived from an intelligent Paraguayan, who had given some attention to the natural products of his coun-

try, and who had opportunities of observing these plants at all seasons. The guembe is valuable for its bark only, the guembetaya for its fruit. The latter takes root in the earth, generally near some large tree, around which it will entwine, and climb to the utmost branches with such a grasp as not unfrequently to destroy it. It bears a beautiful trumpet-shaped flower of a delicate straw-color, which is succeeded by a fruit highly prized by the Indians. It is similar in appearance and taste to Indian corn, and is prepared and used by the natives in the same manner for bread. I had an opportunity of seeing both these plants growing, and have been thus particular in drawing the distinction between them, because Azara, generally an excellent authority, so far as he touches upon the botany of La Plata, speaks only of the guembe, and assigns to it the characteristics of both plants.

While off Concepcion, the Water Witch was an object of great curiosity and interest, not only to the inhabitants of the town, but to those of the surrounding country; for none except a few who had visited Ascension when a steamer—a rare sight even there—happened to be in port had ever before seen one. People from a long distance in the interior flocked to see the wonderful bark. Men, women, and children crowded on board, and would sit for hours under the awning of the deck, seemingly astonished and delighted at all they saw, and eagerly questioning the old Guarani pilot as to the meaning of many things to them so incomprehensible.

We were invited on the first evening of our arrival to a ball at the commandante's, where were assembled all the beauty and distinction of the place. The floor of the ball-room was of tile, the lights tallow; indeed, there was little to meet a cosmopolitan standard of elegance, but the good-breeding and native tact of the people made it an occasion of enjoyment to us all. There is no village or region of the earth so small or remote as not to have its "upper ten." The knowledge of this fact placed me in a dilemma. Being the "Señor Commandante," I was expected to select, as a partner for the waltz, the most distinguished lady present. When all looked alike, it was impossible to discriminate: a mistake would have been a national insult. In this quandary, I placed myself in the hands of the commandante, who dashed off to a formidable row of females at the upper end of the room, from whence he brought forth a partner, assuring me she danced divinely. This I could not doubt, for what woman in

Spanish America can't waltz, and waltz well? but was she one of a class so often found in this country, that "never tires?"

The music began; off we started, followed by the officers of the Water Witch, and all the belles and beaux of the town. Round and round, whirl and whirl—"Bravo, Señor Commandante!"—the invariable exclamation of our host as we passed—began to sound faintly in my ear; on, on we flew; I no longer supported the lady; she carried me round. Was I about to realize the theory of perpetual motion? Sights and sounds were growing dim and confused, when, perhaps aroused by the noisy "bravo" of the commandante, I gathered my failing strength, broke away from the fair lady, and beat a retreat from the room. I was fairly danced down.

When I returned after a few moments' absence, the señorita had found another partner, and was whirling again, looking as fresh and smiling as if just beginning the dance. The refreshments consisted of cakes, red wine, caña, and, above all, the important and refreshing maté.

The following evening was passed in a similar manner at the house of "Señor Tachiera," a Brazilian. Señor Tachiera had been a *détenu* of Francia, and spoke feelingly of his efforts, and the consuming desire, during that detention, to return to Brazil. At last he resigned himself to his fate, married a Paraguayan, and had a large family around him. "Now," said he, "I have taken deep root in the soil, and shall never see Brazil again." Indeed, the laws oblige him, *even now*, to take root in the soil, or "abandon his wife;" for no woman can leave the country without permission of the President, a favor not easily obtained. He gave me a small box of the resin of the "Palo Santo" for the President of the United States, neatly put up and accompanied by a note, which I forwarded by the first opportunity to the Navy Department. This kind-hearted Brazilian and his family were indefatigable in their efforts to amuse us: the daughter danced and smoked with a vivacity that were charming; for the usages of the country make smoking admissible to all, men, women, and children; and dancing is *the* amusement of Spanish America.

These simple hospitalities are recalled as agreeable social reminiscences of life in that interior country, and were, at the time, a pleasant relief from the labors of the expedition.

We were astonished to find the women of these remote regions so handsomely and appropriately dressed; and, in contradiction

to all previous reports, their pretty feet were covered with shoes and stockings. In fact, there is no fever so contagious as fashion; and as there was a rumor that the President's daughters drew upon French art, can it be doubted that the fair ladies of Concepcion had received an inspiration from those importations? Occasionally in these parts, so distant from Asuncion, the centre of Paraguayan distinction, we see a costume of Francia's time, the short jacket and vest scarce covering the shoulder-blade, and the pointed hat from fourteen to sixteen inches high; but an individual who should appear at the capital in such a costume would incur the indignation of the President and the openly-expressed ridicule of all.

Concepcion was one of the points at which I expected wood, and I found sixty cords of the best quality well cut and corded. In this lot no less than twelve persons were interested, but they permitted us to receive it at our own measurement. Four dollars per cord was the price demanded. In a land of endless forests, this was perhaps too much; but it was cheap fuel when it is considered that with it the steamer was run at the rate of two dollars the hour. It was a new business to these people, and I could afterward have contracted for any quantity at the rate of from two and a half to three dollars the cord. When a trade shall spring up with Brazil and Bolivia *via* the Paraguay, the cutting and sale of wood at this point will of itself give profitable employment to hundreds of the inhabitants of this town.

"On the 15th," says my journal, "we were again under way. Crowds of people assembled on the banks to see the Water Witch move under steam. Soon passed a *salina*—salt-field. The water is not affected; to the taste it is pure. Arroyo la Patria is a wide riacho ten miles above Concepcion, which extends about twelve miles into the Chaco. On its banks are noble trees of la pacho and quebracho, considered the hardest and most durable of all the arboreal treasures of Paraguay. They would be invaluable for ship-building, and small quantities are cut for this purpose annually for the government, and transported to Asuncion. The banks of the Paraguay are here on both sides low and marshy, but some distance inland well wooded. Near the mouth of the Rio Saladillo is a rock in mid-channel; on either side deep water. This is an unimportant stream, rising in the interior of Paraguay. At the season of low water it is so strongly impregnated with salt that it can not be drunk. The channel of the Paraguay a little above

here is diverted from what would seem to be the main bed of the river by rocky obstructions, and has taken a course west of the island Uriate, where it is deep, but narrow. Less than a mile above the island Zapepa, and about twenty from Concepcion, are *salinas*, and near them many huts of salt-gatherers. I am particular in noting these instances of salinas and salados to the east, because most writers assert that they exist only west of the Paraguay and Parana. Thirty miles from Concepcion passed the mouth of the Arquidaban, which rises in the Cordillera Maricayu, and empties into a riacho of the same name."

Four miles above, for the first time, we saw a number of Indians on the Chaco side. Only a few presented themselves immediately on the bank, but we observed a large body half concealed—they imagined wholly so—by the long grass and palm. Accompanied by some of the officers and men, all armed, to show that we were prepared to be either friends or enemies, I went on shore. The savages had placed their bows and arrows at a distance, and as we landed one of them pointed to their cacique. Our Guarani pilot called their attention to 'our cacique,' when a great shaking of hands took place, the Indians uttering deep guttural sounds. I gave the cacique a lighted cigar, of which he took a whiff, and passed it to his companions. Soon the whole party, men, women, and children, came rushing from their hiding-places, eager to shake hands with us. They were without paint or ornaments of any kind, and perfectly nude, except a small piece of cotton or woolen cloth, or skin of wild animals, around the loins. They proved to be a part of the famous Lengua tribe: the men were good-looking, well made, and above the ordinary stature; their eyes long, not unlike the Chinese, but larger; the mouth wide. The women were disfigured by the hideous tattooing which is, according to Azara, their preparation for marriage. These Indians have horses and sheep, cultivate a little corn and cotton, and their women spin with the distaff, and weave a coarse woolen and cotton cloth.

Hoping to satisfy the cacique that our intentions were pacific, and presuming that he would communicate this impression to other tribes with whom he might fall in, I invited him and some others to go on board the Water Witch. It must have been to them a wonderful sight, for not only no steamer, but no vessel approaching the size of our craft had ever before passed over these waters; but not a sound or movement betrayed either astonish-

ment, admiration, or fear on the part of the chief. Some of those who accompanied him had less command over themselves, and manifested a little uneasiness; no persuasion could induce them to go below, after having been shown every thing on deck. We gave them a few trinkets, fish-hooks, cigars, with which they seemed pleased, offering us, in return, some balls of yarn spun by their women. The point in the Chaco at which we landed for a parley with these Indians was a verdant plain elevated some ten feet above the river, and studded inland with stately palms so far as the eye could reach.

At the close of day we anchored fifty-two miles above Concepcion, at a point where the Riacho Novia unites with the main river. Width one third of a mile; least depth since leaving Concepcion, fifteen feet; greatest, sixty of line, and "no bottom." Temperature of the air at meridian, 92°; water, 86½°.

"*November* 16*th*. Under way at an early hour this morning, and had made but little progress, when we came to the most extensive palm-forest as yet seen. It reached nine unbroken miles along the Chaco bank, and extended back to the very verge of the horizon; the grass was green and vigorous. At the termination of this plain the banks rise to the height of fifteen feet, covered for several miles with lapacho and quebracho. This is the greatest elevation we have met with since leaving Concepcion; the more remarkable for being on the west. Saw another party of mounted Indians approaching the river at full speed, but they proved to be a part of the same tribe we had already seen, and wanted presents.

"Before us the first rolling land—in rear of the town of Salvador—was seen since leaving Concepcion. The estancias and quintas of this range look well in the distance, and add much to the cheerfulness and picturesque beauty of the country. The town stands half way up this ridge, which rises gradually from the water to the height of about one hundred feet, and forms a plateau extending back about half a mile. The approach to it by the river is very pretty; shore line crescent-shaped. Anchored in thirty feet water.

"Salvador, in latitude 22° 48′ 45″ south, longitude 57° 54′ 33″ west, has about one thousand inhabitants, and is, by the course of the river, seventy miles from Concepcion, and the most northern town or settlement, except guardias, in Paraguay. Least depth of water to this place fifteen feet, and this at a season when the river is supposed to be eight feet above its lowest point and six

below its highest. We are now five hundred and twenty miles from the mouth of the Paraguay, and have encountered no obstacles to a clear and easy navigation of its waters. An experienced boatman of our Western rivers could discover, by inspection only, the course of deep water. The temperature of the water, 86°, is a mean between the daily extremes of the atmosphere. Since leaving Concepcion the thermometer has ranged from 75° to 95°, the minimum being at 3 A.M., rising and falling at both points with the influence of north and south winds. The heat is always more or less tempered by breezes. In our gradual approach to the equator we have perhaps become somewhat acclimated; for, spite of the fatigue of watching ten or twelve hours of the twenty-four on the hurricane deck, where we are brought in close proximity to the smoke-stack, with only an awning to protect us from the effects of a vertical sun, we have not found the heat insufferable. Our thermometer, as much removed as possible from the influence of artificial heat, was no index to the temperature of our working position, selected for the purpose of giving an uninterrupted view of the river and adjacent country."

Soon after anchoring we visited the commandante. In the attentions paid to us here, and at every point on the river, the influence of government orders is apparent. Our arrival was evidently anticipated by instructions from the capital, and both officials and villagers offered us every facility in the prosecution of our work. Apart from this influence, the inhabitants of Paraguay manifest an unmistakable disposition to exercise hospitality toward strangers.

Though surrounded by great natural advantages, the people of Salvador are poor. Their condition is a silent but expressive reproach to the policy of Paraguayan rulers; for to supply their immediate and absolute wants, and to meet punctually the exactions of the government, are all they are taught or permitted. I accepted the commandante's offer of horses, and, accompanied by several of the officers of the Water Witch, rode over the neighboring country. The estancias were small, and the stock neither in number nor quality very great; the soil, though sandy, seemed to be highly adapted to the most varied products. Corn, rice, sugar-cane, tobacco, mandioca, water-melons, cabbages, pumpkins, and several varieties of beans were growing luxuriantly. The rice was the upland species, cultivated in rows, at an elevation of eighty feet above the water; it required no irrigation, and prom-

ised an abundant harvest. The indigenous products of this region are also valuable. The wild maize, the *Abatiguaniba* of the Guarani, is a bountiful provision of nature, for it is parched or pounded into meal by the natives, and much liked by them when made into bread. The grain is not unlike millet, with blades one third of the width of common Indian corn.

In this vicinity the most useful species of the aloe tribe abounds, the *Caraguatay guazu:* from its filamentous tissues the people of the country make ropes, fishing-lines, etc. Careful experiments have proved it to be both stronger and more durable for cordage than hemp, while, at the same time, it may be manufactured into the finest fabrics. The Spaniards used it for caulking, and preferred it to every other material; and Don Josef de Bustamente y Guerra, a friend and contemporary of Azara,* experimented with ropes of it and of hemp—the latter made at a Spanish arsenal—and his trial proved that of caraguatay to be the stronger.

Under the direction of the Jesuits, the Indians spun and wove it into cloth, and, according to Dobrizhoffer, such beautiful stockings were made of its thread, that in France, both for strength and softness, they were preferred to silk; but he also tells us that "no time or art can make these threads white, nor will they hold color." We have only to remember that this intelligent Jesuit wrote more than a century ago, and that now art and science, applied to manufactures, seem to make all things possible. The Styrian Father continues in his quaint style to dwell upon the uses of the different species of this plant:

"Their leaves supply the place of flax in making thread. The Indians look upon the various fruits of the caraguatay as food. From their leaves, when scraped with a knife, flows a sweet liquor, which is thickened on the fire, and condensed into sugar. This liquor of the caraguatay, mixed in water with the seeds of oranges or lemons, undergoes a vinous fermentation; exposed to the sun, it turns to vinegar. By what method and in what cases wounds are healed by the juice of the caraguatay would be long to tell. A *polypodium*, preferable in the opinion of physicians to any European one, grows on the caraguatay."

In this vicinity is found the "datil," one of the numerous palms.

* Azara: "Mon ami Don Josef de Bustamente y Guerra, fit fabriquer avec du caraguatá un bout de corde de la grosseur du pouce; et l'ayant comparé avec un autre de la même grosseur, fabriqué dans nos arsenaux avec du chanvre, celui de caraguatá se trouva plus fort."

Its fruit grows in clusters, looking like a colossal bunch of grapes; the outer shell is thin, and envelops a sweet, yellowish, stringy substance, of which the natives are very fond, covering a nut about an inch in diameter, containing the kernel from which the oil is extracted either by pressure or boiling. The appearance and size of this nut are similar to that of the filbert, and in taste it is very like the cocoanut.

Although little accustomed to trade, we found the people quite ready to dispose of any article for cash. I employed a boy to procure reptiles, and for this purpose gave him two large specimen-jars half filled with caña, charging him to omit no species, however common in the country. He soon returned with a quantity of diminutive toads, enough to have stocked every collection in the United States. I discontinued his services, but found that I had started a new branch of trade in Salvador, for a goodly portion of the population turned out reptile-hunting; and had I not left the following day, I might unintentionally have worked one of the miracles of Saint Patrick for this neighborhood.

In a climate where the thermometer ranges from 76° to 96° the lightest clothing is alone comfortable; many altogether despise this essential of civilization; and half-grown boys and girls, whose limbs had never been girded, ran about the country, or, plunging into the river as if it were their natural element, swam around the Water Witch, looking as innocent and unconscious as our first parents before the fall.

Having received wood and supplies of fresh provisions, consisting of molasses, beef, figs, chickens, eggs, corn, milk, mandioca, cabbages, onions, and pumpkins, we bade adieu to the people of the town, who came down to see us off—to wish us success and a speedy return. The molasses, made in the neighborhood, was of excellent quality, and we paid for it at the rate of twelve and a half cents a gallon. I purchased a quantity for the ship's company, which was brought on board in an ox-hide, having its four corners drawn together and fastened so that it could be swung upon a pole and carried by two men. It was poured into some empty casks in the "spirit-room," and the hide returned to the men who brought it. They expressed much astonishment at our generosity, and evidently considered it of more value than the molasses. We had been too long in the country not to have discovered that, though abounding in wood and iron, hide was the favorite substitute for both, as well as for rope and a variety of other

articles considered by us essentials in the ruder mechanical arts. If yerba, the staple of the country, is to be transported thousands of miles, it is neither packed in barrels nor boxes, but in hide bags (*tercias*), sewed up with strips of the same material.

There was a little craft at the landing, receiving on board hides and yerba, the only articles of trade from Salvador. The "yerbales" are seventy miles from this place, but, owing to the monopoly of their product by the government, the population in the vicinity of them has diminished, and the annual shipment decreased from six hundred thousand arrobas to fifty thousand.

"Under way," says my journal. "Have advanced three and a half miles, and are passing a government estancia extending three leagues on the river, and containing a herd of six thousand head of horned cattle, some hogs and sheep; the two first very superior, the sheep indifferent. These government estancias are to be found in every part of Paraguay, but more particularly along the river and in the vicinity of guardias. Seven miles above Salvador, encountered a ledge of rocks which extends across two thirds the width of the river, forcing the channel on the Chaco side. There is no appearance of rock formation on either bank, both being here low and marshy. This characteristic continues for five miles to Piquete Arracife, in latitude 22° 45′ 33″, and longitude 57° 57′ 31″, distant from Asuncion two hundred and sixty-two miles. Except piquetes and guardias, there is not, beyond, a single habitation on Paraguay territory, and this is the last place at which we have contracted for the delivery of wood.

"The weather to-day, *November* 17*th*, has been intensely hot, thermometer ranging from 75° at three A.M. to 99° at three P.M.; at midnight thermometer showed 86°, and at six A.M. 79°, the wind being north and northwest, the point whence come winds charged with the radiated heat of a vast pampa. The fires of the furnace having been extinguished while wooding at midday, the reading of the thermometer at three P.M. was uninfluenced by any current of artificial heat. Half a mile below Arracife is a ledge of rocks on either side of the channel, but navigation is neither impeded nor endangered by them.

"One mile above is *Paso Malo*—"Bad Pass," so called from there being less water than at any point between Asuncion and Albuquerque; and yet, even here, the least depth is twelve feet, and this we found at only two casts of the lead, equivalent to six feet when the river is at its lowest state. Both banks continue

low, with extensive plains of palm and grass on the Chaco side. Advanced twelve miles; the river turns east, and the Sierra Ytapucumini, which is first seen in the distance at Piquete Tobas, six miles below, terminates on the left bank, in a bluff of limestone forty feet high, covered with a growth of valuable woods. This wooded limestone plateau continues for some miles on the east bank, while the opposite or Chaco side presents the same low plain of palms. The Sierra Ytapucumini is a continuation of the distant high lands first seen in approaching Salvador. All the limestone used at Asuncion, and other places on the river, is taken from this neighborhood."

Five miles above Arracife, while running close to the right bank, we saw a host of mounted Indians in the distance. They came dashing at a full gallop over the plain, looking like Centaurs, as they gracefully guided their horses through the windings of a dense palm forest, and undeviatingly directed their course to the river, without for an instant checking speed. On they came, men and women, in all their nudity; no garments of any description, except a piece of stuff about the loins; neither paint nor ornaments, neither saddles nor bridles, but controlling their animals with a rude rein of hide passed over the lower jaw, and confined by a thong of the same material.

Arrived on the bank, they made signs for a "talk." The steamer was stopped, and some of us landed. They proved to be a part of one of the most warlike tribes, the Angaité, and were noble-looking creatures, above the ordinary stature, and well formed: their teeth were white and regular; hair luxuriant, and cut square upon the forehead. We gazed with interest upon these savages, for the warlike Chaco tribes have alone, amid the degradation and extirpation of the nations of their race upon the American continent, defied, for more than three centuries, the power of the white man. They still maintain their wild independence, not in intricate and inaccessible passes of mountain ranges—not in great sterile plains, or among death-exhaling morasses, where the ingenuity or industry of the white man could obtain no remunerative return, but over a vast domain of two hundred thousand square miles, spreading out into noble forests of precious woods, lovely plains, accessible by navigable rivers, and irrigated by hundreds of their tributary streams; a land not figuratively, but literally flowing with milk and honey.* They have a salu-

* The honey of the Chaco is celebrated in La Plata.



MEETING INDIANS ON THE CHACO.

brious climate; a *remedio*, in their indigenous products, for every disease and wound; amid a perfection of vegetal beauty, they live, attaining a longevity almost unknown to the white man, without the physical decay of his old age.

After a talk, and presents of tobacco and beads, we left them, with a promise, on their part, to meet us on our return, with skins of wild animals, specimens, etc.; but we never saw them again.

"Four miles to the Piquete Judiarte; river more tortuous, winding through twenty points of the compass. This piquete is twenty-two miles from Salvador by the river, and nine by land. Extensive palm plains begin on the east, and disappear on the west. I have observed that rarely or never do those plains appear on both banks at the same time. At the Vuelta Caapucu the course of the river is diverted by rocky obstructions, and the west bank becomes more elevated. After passing the last piquete, the Sierra Caapucu may be seen at intervals at some distance in the interior. Twenty miles above, it approaches the Paraguay, and presents a precipitous rocky bluff, known to the natives as *Piedra Partida*—'Freestone.' This range extends five miles on the river, and throughout the whole distance is covered with fine timber. It then recedes again, and terminates about half a mile in the interior, in a beautiful cone—Mount Pina Hermosa,* which is twenty-six miles from Piquete Judiarte.

"*November* 18*th*. Continue to ascend; in view upon the left, mountain ranges well timbered, contrasting strangely with the boundless palm plains of the right bank. At three points in this day's work have observed an inclination of the channel to the west; the only deviation from an easterly direction, which it has heretofore maintained with great uniformity. May not this arise from the physical changes to which I have alluded, and the barrier which the rocky abutments of the east bank oppose to the working of the river in that direction?

"*November* 19*th*. With intervals of a few minutes for meals, I have worked to-day incessantly for ten hours. This, with the debilitating influence of the weather, has produced excessive fatigue and lassitude. In these latitudes I believe the siesta is essential to vigorous health. Thermometer has ranged from 84° to 96° at 3 P.M. Wind N., N.E., and N.W. At 6 P.M., wind S.E.; thermometer 76°: the influence of the wind, in this instance, producing, in three hours, a change of temperature great-

* So called from a stone of fine texture found in it.

er than is here caused by the seasons; and this is the uniform result.

"Passing a rocky bluff on the left bank, where stands the Guardia Apatuya: it is sixty miles above Salvador, and the last of these posts but one in approaching the northern frontier.

"Having broken another crank strap, anchored two miles beyond, at the mouth of the Riacho Toldocue, which takes its name from a tribe of Indians that formerly occupied the adjacent country. There is an absence of every mark of civilization, but the scenery is surpassingly beautiful; the distant ranges and spurs of sierras on the left, although of no great height, present ever-varying landscapes; and as the steamer passes her length upon the waters, picturesque views open upon us in the east with increased beauty. From our anchorage, a distant view of Mount Galvan. Cloudy weather prevents the usual observations for geographical determination.

"*November* 20*th*. Throughout this day the beauty of the face of the country has called forth the admiration of all on board. On both sides, mountains. On the east, the spurs of the Sierras Morada and Ytapucu Guazu, crowned with forests of noble timber, approach the river in precipitous sections of stratified rock, of from sixty to one hundred feet elevation, and inclose between them palm plains, with grass green and fresh as a hay-field in June. On the Chaco side, the lofty conical Galvan stands like a watch-tower over the plains. Isolated, it rises from a sea of palm and grass, which stretches easterly to the river, and on the north, south, and west to the verge of the horizon.

"*November* 21*st*. Scenery continues very beautiful. On the east, the spurs of the sierras still approach and recede from the river, the dark verdure of their forests enameled by the brilliant flora of parasite and epiphyte. Our crew, about fifty souls, many of them rude seamen—'they that go down to the sea in ships, and occupy their business in great waters'—gaze around them in silence, and, from their unusually subdued manner, we may believe with hearts touched by the wondrous beauties of creation hourly unfolded. They are many hundred miles from the sea, in a vessel diminutive, it is true, but one in which they had traversed seven thousand miles of ocean before entering these waters. Their rugged natures are still disciplined by the laws and regulations of a national ship, 'afloat,' not upon the broad ocean, but upon a river; not watching the sporting of the Great Leviathan,

or the phenomena of a vast expanse of sea and sky, but cruising through verdant plains, flower-gardens, parks, forests of gigantic trees, mountain ranges, their wild grandeur contrasting impressively with the green fields nestling under and between them. There is a pervading woody aroma; all the depth and brilliant tints of tropical regions; new and beautiful species of animal life swim across the steamer's track, or appear upon the banks, or dash through the bordering forest; the day is enlivened by concerts of birds of gay plumage; the stillness of the night is broken by strange sounds from the shores, as if all animated life was startled by the appearance of this new force of civilization disturbing the solitude of their domain.



TERMINATION OF A SPUR OF YTAPUCU GUAZU.

"We have now in full view the rocky spurs of the Morada and the 'Ytapucu Guazu;' they contain quarries of a sandstone of fine texture, said to be of unequaled quality when worked into hones for fine edged tools. On the Chaco side, small patches of pumpkins, but no Indian near them; even on this limited scale it is the first cultivation we have seen on that bank.

"Anchored off Guardia Concluencia. It stands on the slope of a section of the 'Ytapucu Guazu,' and is the northern frontier guardia of Paraguay, distant from Asuncion three hundred and fifty miles. The encroachments of Brazil and the hostilities of the Chaco Indians are here alike feared."

Soon after landing we received a visit from the commandante, who proudly speaks of his guardia as the northern key to the republic. An irreconcilable feud seems to exist between the Paraguayans and the warlike Indians of the neighboring territory. The savages have few or no canoes, and rarely go upon the water; but the Paraguayans owe their exemption from all hostile incursion less to the barrier which the river presents than to the divisions and jealousies existing among the tribes, and to the absence among them of all arms that could be effective in invading the opposite country; for, on foot, the bow and arrow, and, mounted, the lance, are still their only implements of war. The immensity of their territory and their nomadic habits render them, in return, safe from all pursuit. Mounted upon fleet horses, with their wives and children, and driving flocks and herds before them, they have only to plunge into the unexplored regions of their domain.

Though the white population of La Plata dwell with enthusiasm upon the beauty and fruitfulness of the Chaco, few or none but the Jesuits have ever attempted to explore the mysteries of its interior. We have for some days been passing the lands still occupied by Mbayas, Lenguas, Angaite, and Guanos, names familiar to us from the contests of their progenitors with the Spanish conquerors; "nations comprehending innumerable divisions, or small tribes, who add to their names with time, and, when questioned on this subject, give the new additions without dispensing with the old. It is beyond question that the charts of the Jesuits scarcely have space for the insertion of their different names, so numerous are the tribes."*

I should judge by my own observation, and from information given me by inhabitants of the country, that these unsubjugated Indians, with the exception of the domesticity of birds and quadrupeds among them—a thing unknown at the time of the Spanish invasion—still retain the habits and physical characteristics which the early writers upon this country, a little later the Jesuits, and more recently Azara, have ascribed to them. A Jesuit divides them into "Equestrian" and "Pedestrian" tribes, but Azara more justly distinguishes them as "Warlike" and "Agricultural." Though they are now, and were at the time of the Jesuitic influence, skillful horsemen, it was an art acquired from the Spaniards, who, as is well known, introduced the horse upon that section of the continent; agriculture was, at the time of the

* Azara.

invasion, pursued with success by some of the tribes, while others, warlike and ferocious, lived by the chase or fishing.

Though many of them now possess horned cattle, sheep, and horses, except for the latter, which have, from habit, become necessary to them, they give to their increase little or no attention. Mounted, they course over the Chaco, preferring the precarious subsistence of the chase to pastoral or agricultural pursuits, which the fruitfulness of the soil, the fine natural pastures, and the constant recurrence of saliferous lands and waters would make so sure and easy a source of supply for all their physical necessities.

The most extraordinary accounts are given by the Jesuits of the size, strength, and vigor of the warlike Chaco Indians. I have alluded to the Abipones, a few of whom, in a semi-civilized state, we saw near Santa Fé. Dobrizhoffer speaks of them as a nation of Masanissas. "If," says this author, "a man dies at eighty, he is lamented as if cut off in the flower of his age." He mentions men of a hundred mounting fiery horses like boys of twelve years; and adds, "Women generally live longer than men, because they are not killed in war." He proceeds to account for this longevity without physical decay, and their organization, "muscular," "robust," and "agile," which he ascribes somewhat to climatic influence, but still more to the instinctive avoidance by youth, both males and females, of licentious courses, and to temperance through life in food and all sensual gratification. What Tacitus says of the ancient Germans he applies to them: "Cibi simplices, agrestia poma, recens fera, aut lac concretum, sine apparatu, sine blandimentis expellunt famem."

Azara, who wrote many years after the Styrian Jesuit, in speaking of Lenguas, Mbayas, and other warlike tribes, says, "Their height, the grandeur and elegance of their forms and their proportions are not equaled in the world." He refers constantly to Indians, vigorous, athletic, and possessing perfect hair and teeth, who had numbered several years over a century.

A cacique of the Mbayas, Nabidigua, six feet two inches high, was, in 1794, asked his age. He replied, "I do not know; but when the Cathedral in Asuncion was begun, I was married and had a son." This Cathedral was built in 1689, and, supposing the cacique to have been fifteen at the time of his marriage, he must have been, in 1794, one hundred and twenty years old, and yet he then "mounted his horse, handled his lance, went into war, or followed the chase with the youngest."

Of all the tribes, the Mbayas continued to give most trouble to the white population, crossing the Paraguay and waging war for many years so successfully, to the very neighborhood of Asuncion, that the Spaniards were forced, in 1746, to conclude a formal treaty of peace with them. They are still seen in those parallels of the Chaco, 20° and 22° south, which they originally occupied, divided into *tolderias*, or wigwams. Azara, in writing of them at the close of the eighteenth century, says, "They had with them many Guanos, part of an agricultural tribe, who served them, cultivating their lands without remuneration; for this reason the Mbayas call them their slaves, but their servitude is gentle, because the Guanos submit to it voluntarily and renounce it at will. Added to this, their masters give few orders, they never employ an imperative and obligatory tone, and they partake of all things, even their carnal pleasures, with the Guanos, for the Mbayas are not jealous."

The Chaco was both the Elysium and Palestine of the Indians in that section of the continent. Undoubtedly occupied by indigenous tribes, it yet became the hiding-place or refuge-home of all who fled from the Spaniards of Peru, or from those east of the central rivers, but, above all, from the Portuguese slave-hunters; "for there they had mountains for observatories, trackless woods for fortifications, rivers and marshes for ditches, and plantations of fruit-trees for store-houses."* And there their descendants still live, in wild independence, bidding defiance to the white population of the opposite shores of "La Plata."

I have alluded to our parleys with Lenguas, or Guaycurus, and Anguités, and can add my testimony to the assertions of the Jesuits and Spanish authors as to their extraordinary physical organization, superior stature, teeth, perfection of limb; those relating to their health and longevity without decay are fully confirmed by the people of the country.

The Paraguay River was generally, but not invariably, the boundary between the warlike and agricultural nations. The Guanos, to whom I have alluded as the slaves or laborers of the Mbayas, were found west of the river, while the innumerable tribes comprehended in the Guarani nation occupied a large part of Brazil and the country east of the Paraguay and Parana.

They possessed, at the time of the Spanish invasion, a comparative civilization, raising corn, rice, and many vegetables; gather-

* Dobrizhoffer.

ing wild honey and fruits, distilling a liquor which became popular among the Spaniards, and cultivating cotton, from which they spun and wove a simple covering for their nakedness.

Before the revolution, parties of Guanos, in troops of fifty and a hundred, descended the Paraguay and Parana, going even to Buenos Ayres, where they hired themselves, for a limited period, to the estancieros; always choosing to work by the task, leaving their arms with the alcalde on entering a village or district, and claiming them again when ready to return to the Chaco. The descendants of these agricultural Indians still go forth as laborers in the Argentine Confederation, returning at stated periods to their wilds.

The Guarani nation not only possessed a large part of the country now known as Brazil and the basin of La Plata, east of the central rivers, from the sixteenth to the thirtieth degree of latitude, but, crossing the upper waters of the Paraguay, they even penetrated west to the province of Chiquitos, where, at the foot of the Andes, numbers of them, under the name of Chiriguanos, were found. They acknowledged no one head or chief, but were divided into numerous small tribes, designated by the name of its cacique or the section of the country they happened to occupy; recognizable, however, not only by general characteristics, but by their language, precisely the same throughout the tribes of their nation, however geographically placed, and yet entirely different from all others of the many Indian idioms of the Southern continent.

With a knowledge of Guarani, one could pass through the extent of their territory; that is, travel through Brazil, enter Paraguay, descend to Buenos Ayres, and journey into Peru, without finding such changes in the language as might arise from local causes.

But, if the most civilized and the most numerous of all the La Plata nations, so were they the most easily conquered, for warlike pursuits were distasteful to them. It was among this people that the Spaniards formed their largest commanderies, the Jesuits their first neophytes; while vast numbers, not only the tribes occupying Brazilian territory, but those of the "reductions" of the Jesuits, were carried off by the Mamelucas.

These Indians evinced a wonderful obedience and docility to the instructions of the Jesuits; became, under their military training, excellent soldiers; and, to the honor of the Fathers—upon whom, notwithstanding, many of the Spanish writers have exhausted the asperities of their language—gave evidence of such submission and

fidelity to the Spanish monarchy that they participated in many of their wars, both against foreign and domestic foes, contributing largely to their victories, and saving them from injury, if not extirpation, by more than one wide-spread and well-designed Indian insurrection; services which were noticed in 1665 and 1666 by gracious letters from the "Catholic king," still preserved in the archives of Santa Fé. Amid all the humiliation and degradation of this aboriginal nation, one great triumph awaited it. In the western parts of Brazil, and in all Paraguay, their language was preserved, indeed substituted for that of the conquerors, and is to this day almost exclusively spoken in the latter country.

Though entertaining rather absurd ideas of a spiritual existence, some few of the La Plata Indians believed in the immortality of the soul; and we have seen that there was even a tradition, the origin of which the Spaniards ascribed to the Jesuits, that St. Thomas had labored on the American continent. But both laymen and Jesuits unite in telling us that among many tribes they discovered no traces of a knowledge of God. The contemplation of terrestrial or celestial objects had never inspired them with an idea of a creative Deity. Father Peñafiel declares that many Indians, when questioned as to whether they had ever thought of the existence of a Supreme Being, replied, "No, never." Dobrizhoffer, who completed his theological course in the University of Cordova, says, "I finished the four years of theology commenced at Gratz in Styria, and defended warmly the opinion that no man in the possession of his reason can, without a crime, remain ignorant of God for any length of time. On removing thence to a colony of Abipones, I found, to my astonishment, that the whole language of these savages did not contain a single word which expresses God or Divinity." And yet these Abipones watched with reverence the appearance and disappearance of the Pleiades, as the representative of the common ancestor of Spaniard and Indian, the grandfather Aharaigichi, who transmitted gold and silver to the one and valor to the other. The Guaranis alone had a word for God, "*Tupâ*"—*Tu*, an expression of admiration; *pa*, of interrogation.

This may explain, but not excuse, the extraordinary prejudices and inhumanities of the conquerors toward the indigenous inhabitants of the south, whom they pretended to regard, notwithstanding their extraordinary physical beauty, as a species intermediate between man and brute. Such an opinion was not only obstinate-

ly upheld by laymen, but by many learned and respectable ecclesiastics, who passed over to the new continent. Thomas Ortez, bishop of Saint Martha, addressed an elaborate article on the subject to the Supreme Council of Madrid, stating that the experience derived from a long and frequent intercourse with the Indians led him to regard them "as stupid beings, incapable as brute beasts of comprehending our religion or observing its precepts." We know how able an apologist and defender rose up in the person of Bartolomeo de las Casas, who declared them fully capable of understanding all the truths of Christianity. Other ecclesiastics considered them an inferior creation, to whom could be accorded but one sacrament—baptism. Las Casas boldly alleged that both of these positions were assumed only as an excuse for the atrocities exercised against the aborigines by the conquerors, and obtained in 1537 a bull from Paul III., declaring them human beings, who could receive all the sacraments of the Church. Powerful as were the popes of the sixteenth century, both in temporal and spiritual affairs, they could not vanquish the prejudice, real or pretended, of priests and laymen. Elaborate treatises were written to prove the inferiority of the Indian race; and, for a century after the conquest of Peru, its curates, with the sanction of their bishops, persisted in refusing them the Eucharist, upon the pretext of incapacity to comprehend the great mystery of the Church. This prejudice vanished only with time, and before the authority of more than one ecclesiastical council, assembled in the cities of Peru and La Plata to decide the question. The poor Indian obtained one advantage by this doubt—exemption from the fearful tribunals of the Inquisition.

CHAPTER X.

Rio Appa.—A Tapir.—Differences between Brazil and Paraguay as to the Boundaries.—Letter from Mr. Hudson.—Point Rock.—Sierra Siete Punta.—Pan de Azucar.—Ascent of the Mountain.—The View.—Speculations on the Future of this Country.—Round Top.—Fort Bourbon.—Claims of Bolivia and Paraguay.—Bahia Blanca.—Vuelta Pariquito.—Capon Chico.—A Boa.—Dorado, Pacu, and Palometa.—Ascent of the Bahia Blanca.—Camelotas.—Suspending of the Bottle to a Tree.—Proposition of Don Manuel Louis de Oliden.—Grant by the Congress of Bolivia.—Decree of the Supreme Government.—Importance attached to the Navigation of the Otuquis.—Extract from a Pamphlet by Mauricio Back.—Fort Coimbra.—Flattering Expressions of the Commandante.—The Guaycurus.—Policy of Brazil toward the Chaco Indians.—The Canoe.

"*November* 19*th*, 1853. Anchored off the mouth of the Rio Appa, known to the early Spanish settlers as the Corrientes, but changed to its present name by the Mbayas when they overran this entire region. It rises about thirty miles in the interior of Paraguay, in the Cordillera Amambay. On anchoring, took a boat, and, accompanied by several of the officers, pulled six miles up this river; found its general width about three hundred yards, with a depth of not less than nine feet; banks low. We were prepared to make additions to our collection of animals, birds, and plants, but met with no great success. Not a bird was to be seen of which we had not already procured a specimen. The plants were few, the flora consisting principally of the rich clusters of a variety of creepers, which, by their varied tinges, gave a gay relief to the dark foliage of a shrubby growth around which they were entwined.

"Saw several capibara and tapirs. The first we secured; the latter escaped us, for its tough skin defied a volley from our party that would have brought down a dozen ordinary animals. We first saw it swimming across the river, showing only its head. One pronounced it a log, another a tiger; but, soon discovering it to be a strange animal never before seen, every gun was pointed, and the men plied their oars in eager pursuit. It was impossible to intercept him before reaching the shore, where he disappeared in a thicket. We beached the boat, and each man, with his gun, made a rush to the nearest point. The animal was tracked for some distance, but the impenetrable thorny undergrowth formed a barrier to the chase, but not to the escape of the tapir, who to a

thick skin adds fleetness equal to that of the horse, and strength which enables him to break through any thicket, however matted, dense, or thorny."

I afterward procured one alive, which was shipped for home, but he died on the passage. We found two varieties of wild fruit, the "No hace," about the size of a large plum, growing on a lofty tree, and the "Evepina," similar in appearance to a cherry.

The Rio Appa has been considered the northern boundary between Brazil and Paraguay; at least, the Imperial Government so regards it; but the Paraguayans protest against any such limitation of their territory, and claim to the Bahia Blanca. This question of limits has been for years one of diplomatic discussion, negotiation, and bad feeling between the two countries, and has, until very recently, excluded Brazil from all communication, by the lower waters of the Paraguay, with Matto Grosso. Paraguay, by what right does not appear, claims both banks up to Bahia Blanca, and, as a consequence, control over the navigation of the river; the very course the Imperial Government has pursued toward its hemmed-in neighbors, Peru and Bolivia.

President Lopez perfectly comprehends the importance of this highway to Brazil, and knows that it presses more and more upon her annually. In the management of this question he has displayed astuteness, foresight, and accomplished diplomacy; uniformly quoting to the Imperial Government its own policy in closing the Amazon and its confluents to the northwestern republics. It therefore can not consistently demur to the exercise of this right by another power. The territory in dispute would be of little value but for the points within it bordering upon the Paraguay, which are important as military positions, for they would give any nation holding them entire control over that river. Imperial guns mounted at the Pan de Azucar, or at Olimpo (Fort Bourbon), might well occasion uneasiness to Paraguay. They would not only command her frontier, but might prove the beginning of a system of inclosure, contracting its circle until there would appear an *imperium in imperio;* not a "sick man," who must, by reason of his infirmities, be put aside, but a weak child, needing for its safety and nurture a strong protecting arm. In short, Paraguay would be absorbed and incorporated as an integral part of the "Empire of South America." On one ground alone is President Lopez willing to settle this question: that is, to leave the territory in dispute entirely unoccupied by either country.

The exploration of the "Water Witch" demonstrated the practicability of sending large steamers up the river, beyond the limits of Paraguay, and probably induced Brazil in 1855 to push this question to an issue. It was then that she sent up the fleet to which I have alluded. On what grounds the concession was finally made I have not learned, but it has been granted, as I am informed by letter from Mr. Hudson, our consul at Buenos Ayres.*

"*November 19th.* A very remarkable change in the temperature has taken place within the last twenty-four hours. Yesterday, the 18th, wind north; at 3 P.M. thermometer stood at 97°. To-day at same hour it has fallen to 79°, wind W.S.W., and at midnight to 68°, wind south. Although within the tropics, and approaching the mountainous regions of Brazil and Bolivia, we observe constantly the influence of south winds in lowering the temperature.

"The country, after leaving Rio Appa, to Point Rock, a distance of about fifty miles, is on both sides elevated but a few feet above the river, and has the usual growth of palm and grass. Point Rock, an isolated granitic hill, or mount, is on the left bank, and rises to the height of ninety feet, throwing out a rocky ledge half way across the river, and forcing the channel toward the west, where it forms the Paso Tarumà. Upon the same side we have had, since leaving "Rio Appa," a distant view of the "Sierra da Amarbay," which stretches south about thirty miles inland. In the Chaco, the horizon is bounded by the Sierra Siete Puntas, its nearest point to the river being a detached, rounded, and wooded mount, which rises abruptly from the plain in latitude 21° 47′ south.

"After leaving Point Rock the face of the country again changes; we have no longer the monotony of flat plains, but the most diversified and picturesque landscapes. On the east are many isolated mountains, some rising directly from the river banks, others at a distance in the interior, all overtopped by the giant Pan de Azucar, a conical volcanic peak 1350 feet high. The river is now divided by a wooded island which rises about eighty feet above the water-level. We passed through the west branch, which has a width of

* "*January 27th*, 1857. A steamer Corça, from Rio, has gone up to Matto Grosso, towing three vessels with cargoes. Lopez, in spite of his treaty with Brazil, is throwing every impediment in their way. The first cargo—the Madrugás—that went up to Matto Grosso paid four hundred per cent. profit. Salt sold for twenty-two silver dollars the fanega—three and a half bushels."



PAN DE AZUCAR.

one hundred and fifty feet, depth seventy, and anchored one mile above, having Pan de Azucar east of the anchorage. These detached, rounded elevations to which I allude are all on the east. The monotony of the west plain is unbroken but by a solitary mountain, rising directly from the bank of the river, as if detached by a convulsion of nature from its opposite neighbor."

November 21*st*, 5 o'clock A.M. Accompanied by Lieutenant Powell, Dr. Carter, and the pilot Bernardino, I started for the ascent of Pan de Azucar. After wading for about a mile and a half through a sea of grass, we reached the foot of the mountain, and commenced the ascent. Making our way over volcanic rocks protruding beyond a shrubby growth, and at times through closely matted and almost impenetrable masses of vegetation, we had advanced about two thirds of the distance, when the doctor and pilot gave out, and decided to remain and keep each other company. Spoiled in a cruise of several months, where we had only to "dip alongside" for the luxury of fresh water, not one of us had thought of bringing a single bottle of the essential element. Thirst was excessive; but we continued the ascent, and by 8 o'clock A.M. Mr. Powell and myself were standing upon the rounded summit, where

a stunted and scattering growth offered no obstacle to a clear and uninterrupted view of the country in every direction.

The day, fortunately for us, was not intensely hot. At 8 A.M. thermometer stood at 79°. The wind was then south; it had been prevailing during the last two days from southeast and southwest, within which time the lowest temperature was 65°, on the 20th at 6 A.M., and the highest 79°; a remarkable change from the reading of the 19th, which gave as a minimum and maximum 84° and 97°. We obtained a reading of the barometer, which, in connection with simultaneous observations made on board ship, gave the height of the mountain at thirteen hundred and fifty feet above the river. According to our observations, it is in latitude 21° 25′ 10″, longitude 57° 55′ 54″ west, three quarters of a mile from the river on the east bank, sixty-three from the Rio Appa, and three hundred and ninety miles from Asuncion.

On all sides below us was a grassy palm-plain, relieved here and there by dark belts of forest, and by insulated mountains or hills, some peaked, others rounded, some rising precipitously for several hundred feet, others sloping gracefully to the plain. The southern horizon was bounded by the wavy undulations of the Cordillera de Amarbay and the sharp outlines of the Siete Puntas —Seven Peaks. In the Chaco, far away to the north, was the Techo da Morro.

There were no estancias in view, with their sleek herds, no orange groves, no green promise, no golden tints of ripening or matured cereals; not a habitation or sign of civilized or savage life. The solitude would have been oppressive but for the beauty of the face of the country, and the exhilaration caused by the delicious atmosphere, tempered by southern breezes.

May I be excused if, under its influence, or an imperious instinct of our nature—American nature—I found myself speculating upon the future of these favored regions; a great predestined future, none could doubt, who for many months had voyaged through such a valley of beauty, presenting, with the exception of that of our Mississippi, the fairest unbroken extent of cultivable land in the world. Is this wealth of creation to remain unavailable for the comfort and happiness of men, while the powers holding dominion over it invite immigration, and the over-crowded cities of Europe teem with millions whose cry is bread? When the dungeons of Southern Italy re-echo the sighs of men who have dared to aspire to political independence? and while the indus-

trial nations are seeking new sources of supply in raw material and new outlets for their manufactures? and while, even in Constitutional England, in underground dens, or within the shadow of palatial precincts, are hid, not sheltered, men, women, and children, crushed, not by vice, but a poverty that generates crime? Emigrants to the valley of La Plata may reach their homes in ocean steamers. No barren wildernesses are to be traversed. No long winters or autumnal exhalations are to be feared. There is much to allure, nothing to repel. No warring, as in the valley of the Amazon and Orinoco, with Indian, beast, and reptile, and, above all, with the great dragon, tropical miasma, which the mind and strength of the white race are impotent to conquer. If Bolivia, Paraguay, the States of the Argentine Confederation, and of Buenos Ayres, would unite and form, for great purposes, a community of nations, neither filibustering hosts nor imperial armies or fleets could be feared. Under the ægis of a liberal Constitution, which would reject all bigoted exclusiveness of political or religious doctrine, added to the facilities which climate and soil offer to new populations—above all, to cultivators and artisans—the face of these wilds would be transfigured into prosperous states, the parts of a South American Republic, which would advance to a zenith of unprecedented power. Spanish galleons, freighted with the "fifths" of majesty; the ships of Portugal and Great Britain, laden with the profits of illegal trade, will never again sail from La Plata. But the steamers of maritime nations, bearing the products of industrial power, will cover her interior water-courses, and, in return, pour into the lap of those nations the indigenous agricultural and mineral wealth of the Western Indies. No overthrow of existent governments, no political revulsions are necessary to place the inhabitants of these regions under the beneficent influences of a great republican civilization.

But my dreams and speculations were at an end as we went pitching down the steep, in many places precipitous sides of the mountain, here catching at a shrub, there resting against a rock. The descent proved far more difficult than the ascent had been. We found the doctor and Bernardino where we had left them. The former, oppressed with drowsiness, had kept awake, not relishing the idea of being caught napping by a jaguar, while the pilot philosophically refreshed himself with a long sleep. At last we reached the river, and relieved our thirst and fatigue by rushing into its waters.

We returned with some additions to our ornithologic collection —a few birds not before seen, among them a toucan; also some fruit of the "*yatay guazu*," a palm not found south of the Pan de Azucar, and differing somewhat from the trees of that family growing so extensively on the plains, being less lofty, and the trunk of greater diameter.

The width of the river at our anchorage off Pan de Azucar was about one third of a mile; temperature of water 84°. From Salvador, the general width is from a quarter to one third of a mile. Least depth since passing the Malo Paso, eighteen feet; greatest, ninety feet of line, and no bottom.

"*November* 22*d*. The character of the river, height of banks, and their growth, have varied but little to Olimpo, or Fort Bourbon, thirty-three miles from Pan de Azucar. Two miles above our last anchorage, near the mountain in view from the Chaco side, and distant about three miles from the river, was Round Top—*Techo da Morro;* opposite were a few detached hills. With these exceptions the country is low, with palms and grass. Here and there, where the banks are slightly elevated, are patches, but no extended reaches of good timber. Twenty-four miles above the mount, half concealed by a small island on the west bank, which rises twelve feet above the water, we saw on the east a *toldo* or wigwam, but no Indians—a good position whence to escape to the Chaco if molested by Paraguayans; of this, however, they could have but little apprehension, as no force has yet ventured such a distance—ninety-three miles from a frontier guardia. The range of the Sierra Olimpo, as here represented, is seen at the distance of two miles, bearing north by west in the Chaco. Upon its northern extremity, which slopes to the river, stands Fort Bourbon, according to our observations in latitude 21° 01′ 39″, longitude 57° 55′ 40″, and variation 1° east. Passing half a mile above, we anchored with the fort bearing S. 5° E."

Soon after coming to anchor we visited the now abandoned fort. It stands on the lowest point of the Olimpo range, not more than forty-five feet above the river, here one third of a mile in width, and forms a square of one hundred feet, having at each angle bastions, which alone were intended for guns, as the walls, fourteen feet high, and two and a half in thickness, are without embrasures. It is built of a sandstone found in the neighboring sierras, and its position is admirably chosen for commanding the channel of the river; but it is commanded, in turn, by the heights



FORT BOURBON, OR OLIMPO.

in its vicinity. It was constructed in 1798 by order of Charles III. of Spain, as a barrier against the encroachments of the Portuguese of Matto Grosso and the hostilities of Chaco Indians. In 1822 it was garrisoned by order of Francia; was abandoned by President Lopez in 1850; but was reoccupied by Paraguay after the opening of the river to Brazilian vessels in 1856.

Upon the sierra, immediately adjoining the fort, is an enormous corral, encircled by a wall six feet high, in good preservation, which was formerly used to protect the cattle of the fort from Indian depredation.

Fort Olimpo, with the adjacent country, is claimed by Bolivia, on grounds apparently more tenable than those upon which are based the rights of Paraguay. By a decree of the government in 1852, it was made one of three free ports of entry, to which they invited the flags of all nations, offering a prize of ten thousand dollars to the first commercial expedition that might enter either one of them.

President Lopez considered this step as an insult to Paraguay, and an attempted infraction of her territorial rights, but proceeded to no active measures for setting it aside, trusting to the distance of Olimpo from the populous provinces of Bolivia, and the inability of that republic to support here a garrison adequate to the enforcement of her decree. Again, there are other claimants—the caciques of the warlike Chaco tribes. Their claim is based on priority of title and present occupation; for, with the exception of this fort and a few dilapidated huts, the former quarters of officers, there is nowhere around or in its vicinage, for many miles, a vestige of occupation by the white race. It stands as isolated from all civilization as a desert island of the ocean, far from a habitable coast.

The Sierra Olimpo is covered with noble timber, and affords fuel of excellent quality for steam, which we can readily believe to be one of the predestined agents for the development of this country. I have constantly alluded to the vast palm plains, but, since entering the Paraguay, we have never run a single day without passing broad forests, or points sufficiently wooded to furnish material for all the purposes of navigation. I was astonished to find within the walls of the fort, which had been abandoned for more than three years, a cotton plant, growing with vigor, blooming and bearing matured cotton of the finest quality.

Five miles from Olimpo we reached Bahia Blanca—"White

Bay," into which empties the Rio Blanco, an insignificant stream. This point is only important from being claimed by Paraguay as her northern boundary. All the territory beyond, on the east, is owned, without question from neighboring powers, by Brazil, and on the west by Bolivia and Brazil; and, though no limits are clearly assigned to imperial possession south, or to Paraguay north, they are probably inclined to leave Bolivia a small outlet by which to reach the great central highway through the River Otuquis, which flows into the Bahia Negra, and thus connects with the Paraguay. A short distance beyond the fort, the country bordering the river on both sides assumes a remarkable change. So far as the eye can reach, there is a sea of vigorous grass, with no trees, save here and there a cluster of willows and alders. The grass encroaches upon the river, apparently floating upon the water, where the banks are not precipitous, and there is little or no current.

At the Vuelta Pariqueti, forty-eight miles from Olimpo, the lands adjacent to the river on the right bank again are elevated, and skirted by a noble growth of lapacho, nandubay, and algarroba. The left side continues low and marshy for a mile or two beyond, where it is broken by a riacho, the banks of which for some distance are well timbered; an evidence generally, if not uniformly, of land exempt from periodical inundations. The river from Olimpo to this point is tortuous, embracing, by its course, sixty-two geographical miles, with a difference in latitude of only twenty-five, and ten in longitude.

We anchored off Lake Salinas, latitude 20° 36′ 24″ south. It is a lagoon, which at the dry season becomes a saline flat. A few huts stand upon the edges of the lagoon, and are occupied during the "season" by Brazilians from Albuquerque, Corumba, and even Cuyaba. Salt is one of the requirements of northwestern Brazil not found in the country, and large parties, in long canoes, come to these salinas from Cuyaba, the capital of Matto Grosso, a distance of five hundred miles, and return with deeply-laden boats against a current of two miles the hour. This is the principal source from which a supply is obtained, and, as may be well understood, it is of indifferent quality. Under the effects of solar evaporation, the efflorescence is so abundant that no inconsiderable quantity is obtained from the surface. The profits of a trade in this one article may be estimated from its scarcity.*

* See the letter quoted from Mr. Hudson, p. 162.

"*November* 24*th*, 6 o'clock A.M., temperature of air, 88°; water, 86°; wind north. Past night oppressively hot in cabin; temperature throughout the night, 82°; on deck, 81°. Calm on the preceding day; on the 23d, temperature 76° at 6 A.M; 93° at 3 P.M.

"*November* 26*th*. Have this day steamed from the saline lagoons forty-eight miles. Found little change in the physical features of the river or adjacent country. Northern borders of the salinas are covered with firm timber, and twenty miles above it, at Capon Chico, the Chaco side is well wooded. Fourteen miles beyond this, on the same side, a forest of quebracho. Anchored off the mouth of the Bahia Negra. The appearance of this 'bahia' is that of a river, and I have determined to explore it. The color of the water, and its current, satisfied me that what we saw was not the discharge of a bay, formed by the backing up of the waters of the Paraguay during the season of inundation, but of a tributary, and one of great interest, as flowing from the west, through which might be opened a communication with the eastern borders of Bolivia.

"We caught in the river near our anchorage a boa seven feet in length. Found some difficulty in putting the huge reptile alive into alcohol without injuring it, as a specimen."

On approaching the entrance of Bahia Negra, we were astonished at the number of fish, apparently myriads. We anchored at the confluence of the two waters, to give the officers and men a little sport, and an opportunity to obtain food and specimens. I have caught the Red Snapper and Grooper on the coasts of Florida and Mexico, where one might haul in the sluggish, inactive fish as lazily as an "old soldier of a tar" would take in the "slack of a rope," but I have never witnessed fishing such as this, at the confluence of the Bahia Negra and Paraguay. In an incredibly short time, hooks baited with pork were floating by dozens astern; and scarcely had they touched the water, when hundreds of fish would spring eagerly at each bait. Dorado, Pacu, and Palometa (all delicious for the table) were among the varieties caught. The Dorado, so called from its golden color, is from two to three feet in length, and weighs from eighteen to twenty-four pounds; its flesh is white and solid. The strength of this fish is wonderful. When hauled in, it would spring into the air some fifteen or twenty feet, not unfrequently detaching itself, or severing the hook from the line, and looking, as it darted upward, like a huge golden vessel incrusted with gems. The Pacu is of a dark grayish color; its

breadth is about two thirds its length, and the largest caught weighed twenty-two pounds. The Palometa is of very much the same form as the Pacu, though not so large; in color, a light gray, with yellow belly. This latter is more formidable to swimmers than any other inhabitant of the La Plata waters. Each of its jaws is armed with a row of triangular teeth, which cut like the sharpest knife.

We have uniformly noticed a great gathering of fish at the confluence of the tributaries with the central waters: this is doubtless owing to the quantity of young ones brought down by the smaller streams.

"*November* 25*th*. Ascending the Bahia, or Rio Negro. I call it a river, because, until lost in a sea of grass, it has every appearance and characteristic of one.

"After proceeding twenty-five miles, the crank strap broke for the fourth time since leaving Asuncion. Anchored in fourteen feet water. Banks low, covered with a scattered and inferior growth of trees; grass vigorous and green; width of river at anchorage, six hundred yards; temperature of air at six P.M., 92°; water, 85°; wind N.E. Greatest depth since entering this water, thirty feet; least, twelve. Position of anchorage on the night of the 26th, latitude 19° 52′ 42″ south, longitude 58° 16′ 34″ west.

"To the northeast, mountains of Coimbra and Albuquerque; in every other direction, grass and water as boundless as the ocean. Horizon so clearly defined that the altitude of a heavenly body might be taken during the day with the same accuracy as by observation made with a sea horizon.

"*November* 27*th*. Under way at an early hour. The river contracted rapidly in width, so much so as to make it difficult to round the points without running the bows of the steamer into the grass. Continued to advance for two hours, when the channel was so narrowed by grass that both wheels were in it, and yet we had a depth of twelve feet water. Anchored and took to a boat, determined, if possible, to see whither the stream would lead or from whence it came. Ascended six miles above the position of the Water Witch. Here the river was entirely closed by *camelotes* and grass, and yet we still had nine feet water. A solitary dwarfed tree, of the mimosa family, was standing six feet above the water level, where its depth was five feet.

"We suspended to one of its branches a bottle by copper wire; it contained the name of the steamer, her position, and names of

officers. We had still to the east the blue outlines of the Brazilian mountains, the nearest, in a right line, distant twenty-two miles. Northwest, the direction whence I supposed this river to flow, grass, water, and sky. We pulled up some of this grass; it measured in length twelve feet, and from a quarter to half an inch in diameter. The point reached was in latitude 19° 50′ 53″ south, longitude 58° 15′ 29″ west, thirty-one miles from its confluence with the Paraguay; general direction thus far, north. The distance in a right line between these two points, it will be seen, is about twenty miles. Temperature, maximum meridian, 95°, wind N.N.E.; at 3 P.M., 94°, wind N.N.W.; minimum, at 3 A.M., 80°; water at meridian, 88½°.

"It is with deep regret that I am obliged to leave this 'Bahia' without having satisfied myself whence come its waters. I am convinced that it is not the backing up of the Paraguay. The current forbids that idea, and the color, even at its junction, is in strange contrast with that of the latter. Between the seasons of high and low water I can not believe that the waters of the Paraguay could back into this bay, deposit detritus, and receive a color unvarying from its mouth to the point of ascent, black, and yet, in a glass, perfectly limpid, more so than the water of the Parana, while that of the Paraguay is uniformly turbid. This alone would convince me that it flows from the high lands of Bolivia, and may be a navigable stream into the interior of that country. If this fact could be established, it would prove of inestimable value, not only to the mediterranean state, but to the whole civilized world. So far as my observation enables me to judge, I perceive no insurmountable obstacle to the navigation of this river. I am convinced that a steamer properly constructed could skim over or cut through this sea of grass."

We retraced our steps, after some difficulty in getting the steamer's bows down stream. She was at last pointed in the right direction, and cutting through the grass which surrounded her, first on one side, then on the other, we descended, and again entered the Paraguay. Before leaving the Bahia, observed a noble deer on the left bank: it stood for a minute perfectly still, as if paralyzed by the appearance of the Water Witch. We thought ourselves sure of a fine specimen, but, before we had gotten within gunshot distance, with one bound it cleared the bushes that skirted the bank, and was in an instant hid from view in a neighboring thicket.

From the following extracts may be gathered the importance at

one time attached to a navigable outlet from that part of Bolivia through which the Otuquis flows, and the measures taken to establish it.

Señor Don Manuel Luis de Oliden made a proposition to the Congress of Bolivia to open the navigation of the River Otuquis to its confluence with the Paraguay, in consideration of which the Congress passed the following act on the 5th November, 1832:

"The Executive will grant to Citizen Manuel Luis de Oliden such aids as it may think proper, in order to enable him to establish a port at the confluence of the rivers Otuquis, Tucabaca, and Latiriquiqui, or at such point as may be most suitable, in order to open the navigation of these into the River Paraguay, conceding, in addition, those privileges which are due to him as the originator of this enterprise.

(Signed), "I. EUSTAQUIO EQUIBAR, *President.*
"DIONISIO BASSIENTOS, *Secretary.*"

This was followed by the subjoined decree of the "Supreme Government," issued on the 17th November, 1832:

"The government being authorized by the foregoing act of Congress of November 5th, 1832, to grant to Citizen Manuel Luis de Oliden such aids as it may think proper, in order to enable him to establish a port at the confluence of the Rivers Tucabaca, Otuquis, and Latiriquiqui, in the province of Chiquitos, and to accord to him such privileges as he may be entitled to; and, the said Manuel Luis de Oliden, having bound himself to the accomplishment of this undertaking in the terms of the following articles, concedes to him privileges, immunities, and guaranties in the following terms, viz.:

"ART. 1. There is granted to Citizen Manuel Luis de Oliden, from the point he may select at which to establish a port on the River Otuquis, south of the province of Chiquitos, twenty-five leagues of territory, in every direction, for himself and his heirs.

"ART. 2. The port he may establish shall be his property for the term of fifty years, at the expiration of which time it shall revert to the 'nacion.'

"ART. 3. All the foreign goods and products introduced through this port during the above-mentioned fifty years shall pay not more than five per cent. duty, which shall be collected at the points where the articles are consumed, under appraisements according to the tariff of the republic.

"Art. 4. During the aforesaid term of fifty years, the government will not appoint any officer or employé; and those that may be necessary will be appointed and paid by the contractor. Nevertheless, should the government deem it advisable to make any appointments, it may make only such as shall be deemed necessary to facilitate the collection of the duties on articles introduced into the interior of the republic, and these shall be paid by the government.

"ART. 5. This establishment shall be governed by the Constitution and laws of the republic.

"ART. 6. The privileges and grants which the government concedes and guarantees to Manuel Luis de Oliden and his successors may be transferred to and enjoyed by such persons to whom he may convey his right of property, under the same conditions as set forth in this decree.

"ART. 7. This establishment will be under the authority and protection of the Supreme Government, with which the contractor (el empresario) will communicate through the minister of the interior.

"ART. 8. If, at the end of four years from this date, this establishment and the opening of navigation be not made, although it may not be in operation, this decree shall be null and void."

Copies of the papers from which these extracts have been made were sent to me after the publication of my Synoptical Report to the Secretary of the Navy on the La Plata Expedition. I was not before aware how great an interest was felt in establishing the navigability of the Otuquis, and its connection with the Paraguay. An intelligent and highly respectable Englishman, who had for many years resided in Buenos Ayres, was at that time in London to establish a company for the settlement of the "Oliden Grant." I have since been gratified by receiving letters from England and France stating that my allusion to the possibility of opening a water communication from the Paraguay to Bolivia had inspired many with such confidence that a colonization company was forming for that republic.

The decree of Congress, followed by the executive proclamation, will explain the terms of agreement between Mr. Oliden and the government of Bolivia. Chiquitos is described as being the richest of her provinces. It was the scene of the labors of the Jesuits, and the seat of some of the most celebrated missions of that order. D'Orbigny speaks of it as "abounding in Nature's gifts."

The Oliden Grant in this province, between the parallels of 17° 45′ and 20° 15′ south, is bounded on the east by the Paraguay River, and extends one hundred and fifty miles west. This, it will be seen, includes the settlements and military posts now held by the Brazilian government; but as the territory claimed by that empire reaches but a short distance west of the Paraguay, and does not embrace any portion of the Otuquis River or Bahia Negra, even should this claim be persisted in and conceded by Bolivia, it can not materially affect this grant. The agricultural ex-

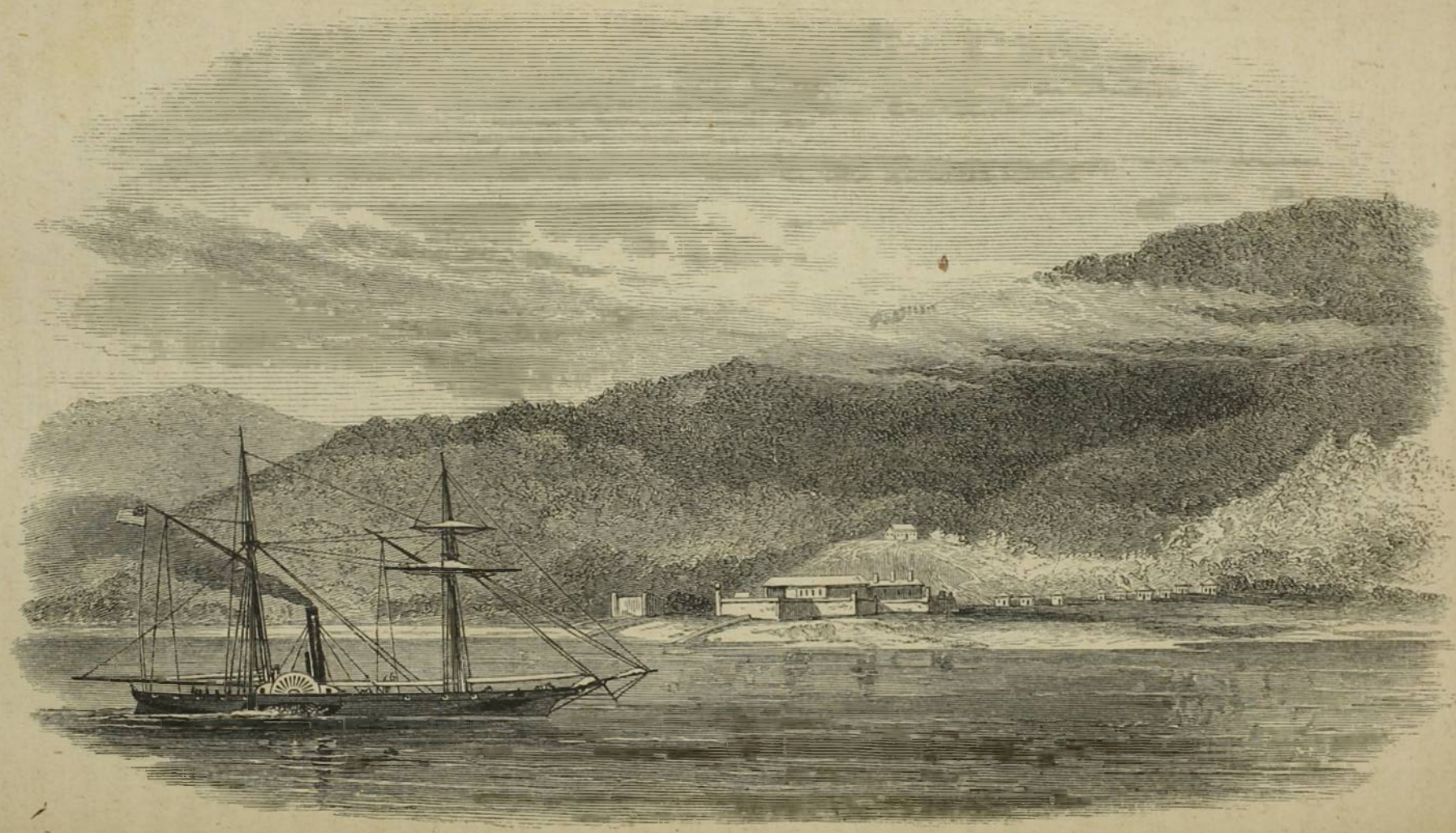
periments upon the lands of Oliden were interesting, and show what has been accomplished within these limits. I quote from a "Descripcion de la Nueva Provincia da Otuquis en Bolivia: par Mauricio Back."

"The village of Santiago, which Mr. Oliden made in 1833 the centre of his operations, on the southern border of the province of Chiquitos, and situated on the Cordillera of the same name, has a population of 1380 souls, and enjoys a temperate, salubrious climate. This Cordillera, whence issue many small streams, which form the River 'Otuquis,' contains, according to reliable authority, mines of gold, silver, quicksilver, and precious stones. In the mountains are most valuable woods and medicinal plants. On the plains south of this Cordillera are skirts of wood, palm, and grass lands, suited for grazing. The soil is of remarkable fertility.

"At a distance of seven leagues from the above-mentioned point Mr. Oliden formed his first settlement on the 'Rio Agua Caliente'—Hot River—over the ruins of the old town of Santiago, founded by the Jesuits, which is now called 'Florida.' The 'Agua Caliente' takes its rise in a warm lake five leagues south of Santiago. This settlement was composed in the year 1836 of several handsome houses, which had been erected by order of the 'empresario,' and is the point which he had selected for his own residence. He established large farms, which were cultivated with great success: corn, of which two crops were made annually; rice equal to that of Bengal; mandioca of extraordinary size; coffee of superior quality; cocoa, sugar-cane, and tobacco—this last the best known—sweet potatoes, peanuts, beans of every variety, and every class of vegetables.

"He established estancias south of this town, on rivers of never-failing water, where the grazing was abundant for the rearing of cattle, sheep, and mules. From Florida he opened a road to the great salina, distant fifty leagues, from which, by way of the Cordillera 'de Lances,' it may be continued to 'Chuquisaca' and 'Tarija.' Another road was opened from Florida to Oliden, the central point of the new province, and distant sixteen leagues east. This was the situation of the old town of 'Corezon de Jesus,' founded by the Jesuits on an elevated plain by the side of the 'Rio Tucubaca,' in latitude 19° 04′ south, longitude 61° 03′ west from Paris. Another road has been opened from Oliden to the town of 'Santa Corezon,' distant twenty-two leagues N.N.E. This town has a population of 1106 souls, and its climate is rather hot than temperate. On this road, and at the distance of fifteen leagues from 'Oliden,' the empresario established a 'hacienda'—a farm, which he called 'Sietos,' for the cultivation particularly of cotton and sugar-cane. Its product in the year 1836 was very considerable.

"In the vicinity of the town of 'Santiago,' on the Serrania of the same name, and in the valley formed by the same, he established another hacien-



FORT COIMBRA.

da called 'Rinconadra,' for the cultivation of the sugar-cane. Its product in the same year was equal to that of 'Sietos.'"

As the navigability of the Otuquis is supposed to be established from the high lands of Bolivia for a long distance in its course southeast, and as the expedition under my command examined it for thirty-one miles above its confluence with the Paraguay, it only remains to determine the connection between these two points.

The government of Bolivia has always been liberal in offering inducements to immigration, feeling perhaps assured that through the energy of foreign populations alone can the riches of that republic—the "golden" and the "garden" spot of La Plata—be brought to light. It is a source of gratification to know that the late explorations of the Water Witch have contributed something toward the consummation of such a point, by establishing the fact of an easy and safe navigation for ocean steamers from the Atlantic to Bahia Negra, a fact not before practically demonstrated, therefore not confidently believed.

"*November* 27*th*, 1853. Again under way; beyond Bahia Negra, little change in the aspect of the river or adjacent country to Fort Coimbra in Brazil, thirty-three miles from Olimpo, where we anchored after dark, and immediately received a visit from the commandante, who had overland orders from his government anticipatory of our arrival. This gentleman, Antonia Peixoto de Azevido Ravim Capite, said that he had for some time been watching for us, and at last, with strange emotion, saw the smoke and lights of the little steamer as she plowed the waters of the wilderness."

Fort Coimbra is the first Brazilian settlement south on the Paraguay, and it is the first on the right bank since leaving Santa Fé, twelve hundred and eighty miles below. In all that extent of country, though habitable, fertile, and salubrious, we have not seen one white soul. The entire province of Matto Grosso is divided into three military districts, embracing fourteen commands—Matto Grosso, Santa Maria, and Baxo—Paraguay. This last includes that portion of the empire into which our expedition entered. I called on the commandante, who received me in a small room with no superfluous furniture; for we must remember that Coimbra at that time could only be approached from Rio de Janeiro by Cuyaba, a distance of twelve hundred miles land travel and five hundred of river navigation; the land journey is over mountains, their passes in many places accessible only to mules. I should have been as-

tonished to find here an officer of such intelligence and polished manners had I not learned that the "commands" of this rich frontier province are posts of distinction, for with the military duties are united high civil functions. The commandante said that he had been charged by his government to afford me all possible facilities in forwarding the objects of the expedition, but that, for reasons already given by the Minister of Foreign Affairs to the United States Minister, I could not ascend above Corumba, a military station one hundred and twenty miles beyond Coimbra.

It was a slight extension of "my limits," which had first been fixed at Albuquerque. This officer was enthusiastic in dwelling upon the progress of the exploration, "fruitful," he said, "with glorious results, and worthy of commemoration by a marble pillar. The little Water Witch," he added, "would live in the memory of the Brazilians."

While flattering us with these expressions, he frankly and unreservedly regretted that any limit should have been placed to our exploration. A steamer was a familiar sight to these Brazilians; the novelty was to see one at Coimbra. In visiting us, the commandante, as a military man, was particularly interested in the examination of our little armament, consisting of three howitzers. "They were," he said, "perfect pieces of ordnance of their class, and admirable for the field operations of his frontier position."

Coimbra, in latitude 19° 55′ 43″, longitude 57° 52′ 32″, stands on a spur of a mountain of the same name, which here slopes to the river, rising not more than forty feet above it at the point upon which is placed the fort, a solid stone structure, which could, with some few additions, be made a place of great strength. It mounts six guns, long twelve-pounders, most of them of brass, and very fine pieces. They completely command the channel of the river, which is here one third of a mile wide. Vessels in passing are within point-blank shot. The interior of the fort was in admirable order, and great improvements were contemplated, some of which were in progress. Within the walls were small stone houses thatched with straw, the quarters of the commandante, three officers, and a part of the garrison; the remainder live without the walls, where are fixed the families of some of the soldiers. Madame Peixoto de Azevido had given up all the comforts and luxury of a life in the capital to share this frontier home with her husband.

All supplies are obtained from Albuquerque or the neighboring Indians. The mountains and pampa adjacent afford little scope

for cultivation or grazing, the latter not being exempt from inundation, while the former offers little arable land. The new commandante had not been here long enough to carry out his contemplated improvements, which embrace gardens, as well as additional military defenses, by placing guns upon the heights of the sierra, commanding the fort in the rear. The low lands, for some distance above Coimbra, are subject to inundation; but, at the same time, there are reaches of firm land, covered with excellent woods, and never overflowed except in seasons of extraordinary rise.

The mountains are still insulated peaks or short ranges, probably spurs of the Bolivian sierras, which extend through Chiquitos.

As at Pan de Azucar, so likewise at Coimbra, two insulated hills face each other on opposite sides of the Paraguay; that on the west we ascertained to rise four hundred and fifty feet above the level of the water, its formation being of lime and sandstone, with moss-like impressions resembling arborescent marble, of which we got some very pretty specimens.

The temperature on the 28th of November was, at 6 P.M., air 81°, water 88°.

The neighboring Chaco is here occupied by the warlike Guaycurus. While the attitude of Paraguay toward her wild neighbors has been one of hostility or non-intercourse, that of Brazil is now, and always has been, conciliatory. The great cacique of the Guaycurus, Tacalaguana, holds a commission from the Imperial Government as an officer of rank, and receives frequent presents for himself and tribe. He is always treated with marked civility and distinction by the commanders of this frontier province. His manner, not only to his own people, but in all intercourse with strangers, is lofty and exacting; he receives no present, not even a cigar, except from the hands of an attendant, and in return makes no sort of acknowledgment, considering his acceptance of the offering a favor and condescension. The wisdom of the Brazilian policy toward these Indians is apparent; it enables her to maintain upon her frontier a formidable force at little or no expense.

After placing a current-gauge, to mark the fall of water per day until our return, we were again under way. The commander accompanied us for a short distance, and returned in his canoe. It had been the intention of Madame de Azevido and himself to accept my invitation of a passage to Albuquerque, but her illness

deprived us of this pleasure. At a short distance above Coimbra we passed a huge canoe floating down lazily with the current, and filled with what looked like an emigrating host. It was a party of Brazilians bound for the salinas. As we passed them the men rested upon their oars, and all gazed as if lost in astonishment at the appearance of our little steamer in these distant waters.

CHAPTER XI.

The Moro Dorito.—Curalo Todo.—Tea, Coffee, and Milk.—Position of Anchorage off Albuquerque.—The Miranda.—The Tacuary.—Azara's Maps.—The Cambarasa.—The Paraguay Mini.—Corumba.—The Guatambu.—Hunting the Jaguar.—Fruits.—Return to Albuquerque.—Village of Mbayas.—An Indian Mission.—Rice and Cotton.—Schools.—The Padre.—A Dance.—Missionary Effort.—The Jesuits.—The Dinner on board the Water Witch.—Trade of Cuyaba.—Bolivian Refugees.—The Grotto Inferno.—Capture of a Sentinel.—Fate of the Refugees.—Birds.—The Jaguar.—Its Ferocity.—Lenguas Indians.—The Commandante wears a long Face.—The Yellow Parrot.—Anchored off Asuncion.—A Storm brewing.

"*November* 29*th*. Under way. After passing the Moro Dorito, a round wooded hill on the left bank, about two and a half miles above our last anchorage, the lands on that side are low, while opposite, short ranges or isolated peaks, alternating with plains of grass, are continuous. The most elevated and remarkable in appearance of these mountains is the Sierra Consello, twenty-two miles above the Coimbra. It rises near the river bank, fifteen hundred feet above the level of the water, and is covered with fine timber. The country on the left is higher than that between Olimpo and Coimbra, but is not entirely exempt from inundation at the greatest rise of the river. Many points, however, are well wooded.

"Thirty-five miles above Coimbra, on the left, a lovely grove of the aguaraibay, familiarly known in the country as *Curalo todo*,* or *Para todo*."

This tree abounds in the neighborhood of the Uruguay missions, and from its leaves, gathered at any season, but usually when the tree is in flower, is extracted, by boiling, a sirup known as the "Balm de Aguaraibay," or "Balm of the Missions." Before the revolution, each Indian village was obliged to furnish two pounds of this balm annually to the royal pharmaceutist at

* Universal remedy.

Madrid. The medicinal properties of the leaf of the para todo were first made known by a Hungarian Jesuit, Sigismund Asperger, who spent forty years among the missions of La Plata, and died after the expulsion of his order, at the advanced age of one hundred and twelve years.* Asperger, who had in early life been a physician, was indefatigable in botanic research, and an accomplished pharmacologist. He left a manuscript of medical recipes and examples of acute cases which he had successfully treated with medicines prepared from the indigenous vegetation of the country. Several *curanderos*—the only physicians of Paraguay, have copies of this valuable manuscript.

"Least depth of water to-day (fifteen feet) since leaving Pan de Azucar. Anchored before sundown off Albuquerque; saw near the river only two huts, for the town is three miles inland, at the foot of a sierra of the same name. As the water is falling, I have determined to push on to Corumba, and visit the authorities of Albuquerque when I return. Strolling along the banks before dark, we saw at a short distance a rancho, and near it a corral filled with cattle, the first seen since leaving the frontier guardia of Paraguay. Endeavored to procure some milk, a luxury not appreciated by the people of this river country; indeed, it is never used by the Argentinos or Paraguayans except with hominy."

In moving from one nation to another, bordering on the same great water-course, it is curious to observe how circumstances, habit, and local influences make certain articles essentials of life. We have left behind us the region of maté, and here, on the very confines of Brazil, far from her coffee districts, the decoction of this berry is the favorite drink of all who can procure it. We got our milk fresh from the cow, procured a novel and primitive vessel in which to carry it to the steamer, and on that evening feasted with tea, coffee, and milk.

"Temperature of air at six P.M., 81°; water, 88°; maximum, meridian, 90°; minimum, midnight, 76°. Position of anchorage off Albuquerque, latitude 19° 26′ 53″ south, longitude 57° 28′ 51″ west; distance from Coimbra forty-seven miles. Put up a gauge to ascertain the fall of the water during our absence.

"*November 30th*, 1853. At an early hour this morning under way. Four miles above our last anchorage, the River Miranda, or, as it is marked on Azara's map, Mbotetey, empties into the Paraguay on the east by two mouths: one only, the lowest, is

* Azara.

navigable. It rises in the Cordillera San José, a range which, under various names, extends through many degrees north and south, and is the watershed for several of the western tributaries of the Parana and the eastern tributaries of the Paraguay. The Miranda is, I am told, navigable to a town of the same name, one hundred and sixty miles in the interior; but as the Paraguay is falling rapidly, and I do not wish to be caught here, a fixture for some months, I can not spare the time for its examination.

"To the right the sierras are continuous, extending west beyond the horizon: they are, without doubt, part of the Bolivian range of San Pantaleon. Six miles above the Miranda is the mouth of another eastern tributary, the Tacuary, which also rises in the Cordillera of San José. I can not at this time explore these tributaries, and find it difficult to obtain any reliable information of their characteristics. Even upon the Paraguay we find in this vicinage but one settlement of the white race, an estancia belonging to a gentleman of Albuquerque, about six miles above the mouth of the Tacuary: it is well stocked with cattle."

On the east, back to the Cordillera of San José, is a fine rolling country, marked on several maps as the Lake of Xarayes. This is a geographical error, but not greater than many I have had occasion to remark, in the course of my professional experience, in various parts of the world, and this, too, in an age when the perfection of instruments leaves no excuse for inaccuracy. There are no indications here of a lake. The land is low, and doubtless not exempt from inundation at the season of high water. The growth on the banks is shrubby, but back, and immediately adjacent, is a dense forest, which looks as if it might be the growth of ages.

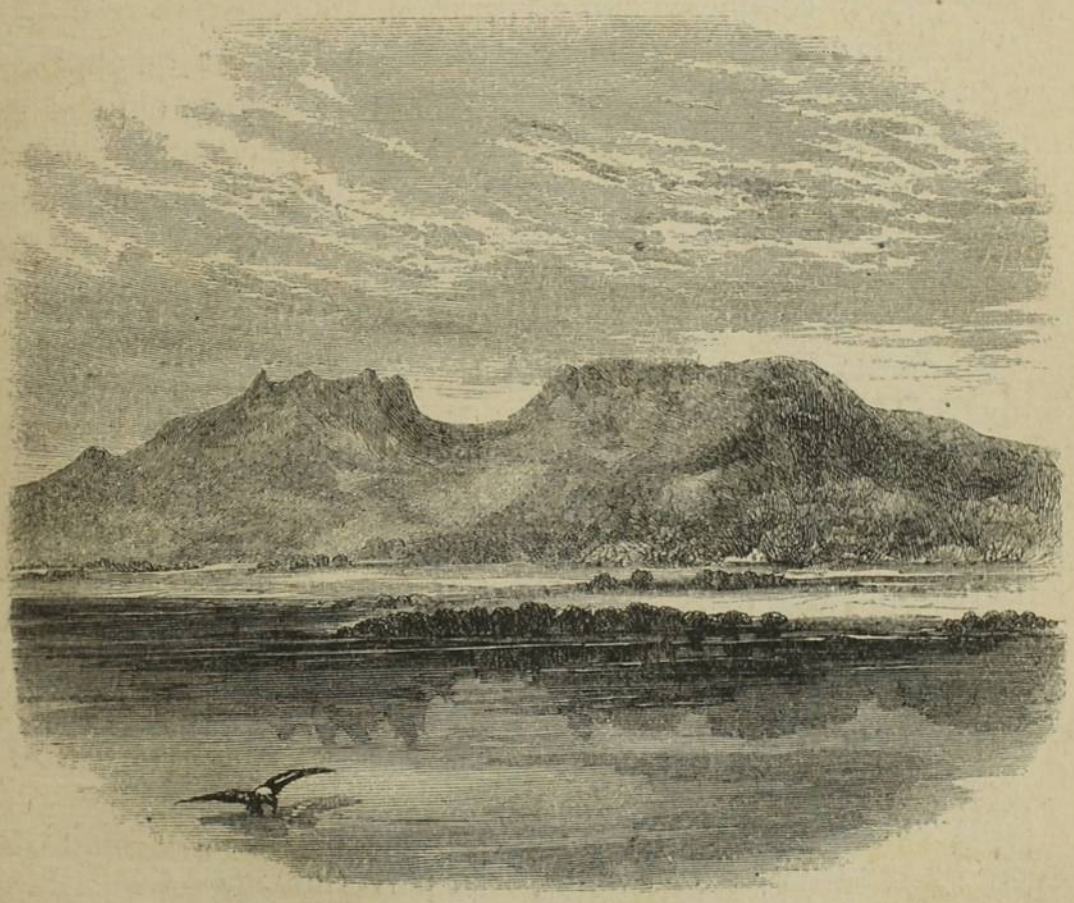
In alluding to received errors in the geography of this country, I must except the maps of Azara. His latitudes are remarkably correct, and his longitudes are as much so as we have a right to expect, when we remember the period at which he worked, and the perfection which three quarters of a century of improvement has given to the construction of instruments. On his map the southern border of this lake is fixed at 18°.

"*November* 30*th*. Twenty-one miles above Albuquerque. Another *malo paso*. It really offers no obstacle to a continuous navigation of the Paraguay, but there is a shoal extending from the right bank, and rocks on the left, which contract the width of the channel, and reduce its depth to twelve feet, when it still has seven to

fall. This pass is called Cambarasa, from a beautiful grove on the left bank. The cambarasa is one of the finest trees of this latitude; the trunk, without limbs, rises to the height of about forty feet; it then shoots out a multitude of branches covered with rich dark foliage, the whole forming an umbrella-shaped crowning.

"Three miles above, on the opposite side, a mountain range approaches the river, and from its base, extending quite down to the water, is a fine growth of lapacho. Two miles above this, on the east, is the mouth of the Omigara, said to be only a branch of the Tacuary. Beyond, on the same side, begins an extensive and beautiful forest of cambarasa, distant from the river, at different points, from one quarter to two miles.

"Have advanced some distance, and observe, eight miles inland, a saddle-shaped mountain, here represented in the sketch; it



SADDLE-SHAPED MOUNTAIN.

slopes gradually in rounded hills and rolling wooded lands to the west bank of the Paraguay, and is one of a broken range extending northward for forty miles from Albuquerque. On the east is a similar wooded range, broken by plains and perpendicular sections of a rocky formation. This mingling of mountain, forest, plain, and rock is inexpressibly beautiful.

"The Paraguay Mini—Little Paraguay, here empties into the main river. It is said to shorten, by thirty miles, the ascension to Cuyaba, but has less depth than the main river.

"Fifty-five miles above Albuquerque. For the first time an appearance of a lake upon the east. It is a narrow, shallow strip of water, running parallel with the river, and there is a mountain about two miles in the interior, with a low plain between it and this lagoon. As we approach Corumba, the country presents the appearance of a beautiful and recently-mown meadow, bounded by wooded mountains, artificially terraced to the plain. The silence and solitude is that of a desert. Not a sign of human life, not a vestige or germ of civilization, except our little craft; she puffs over the waters; at her peak the "stars and stripes" are spread by a gentle southern breeze. We are opening, I sanguinely hope, a new path to commerce and civilization.

"In sight of the little settlement of Corumba. As we approach we find the passage of the river intricate; as little as ten feet water. We have on board several men sent by the commandante to pilot us up. There is a vast deal of disputing in Spanish, Portuguese, and Guarani, evidently a diversity of opinion, creating such confusion that the Water Witch has narrowly escaped being run ashore.

"Minimum temperature at 3 A.M., 75°, wind N.N.W. Maximum, 3 P.M., 91.5°, wind south. Width of river, six hundred yards; depth, fifteen feet.

"We have now reached the utmost limit to which Brazil will permit us to ascend."

Permission was subsequently given for the expedition to extend its operations throughout the Brazilian affluents of La Plata, a result I confidently expected from the well-known intelligence and enlightened spirit of the Emperor, notwithstanding the first refusal.

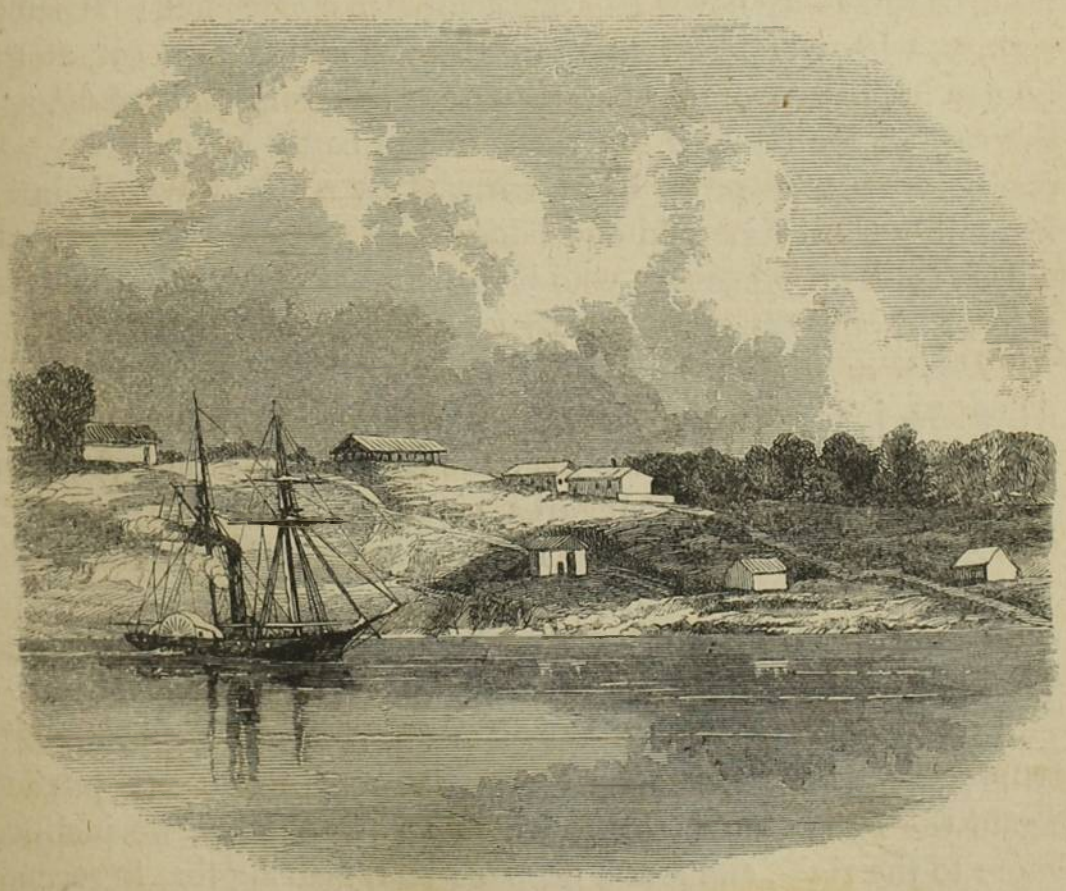
This conviction did not lessen my regret at being obliged to abide by the decision of the Imperial Government. A few days would have taken us to Cuyaba. From that point I could have concluded the survey of the river to its source in a boat, and have sent the steamer so far down as to pass in time all shoal places.

"The west banks here rise fifty or sixty feet to the level of a plain which stretches back to a range of wooded mountains. It has extended forests, with alternations of grass-land. The soil is

undoubtedly fine, but, with the exception of one solitary estancia well-stocked with cattle, and yielding excellent crops of corn and mandioca, there is no attempt at culture in any direction. Aloes and cacti abound; and in our walks through the country we recognized woods seen several degrees south, such as the sabinata (soap-tree), pala blanco, etc. I procured sections of others not indigenous to a lower latitude; above all, the guatambu. This has the finest imaginable texture, is of a delicate straw color, receives a high polish, and would be, undoubtedly, in cabinet-work, the most precious of arboreal treasures. Gathered four varieties of edible fruits not before seen.

"Shot two vampire-bats; one was flying with young in its claws. Fine specimens of patos reales, a duck very like our domestic Muscovy, but far more delicate for table use, have been added to our collections."

The station or village of Corumba is merely a collection of thatched huts forming two sides of a plaza, at one end of which is a chapel, distinguishable only by its cross from the humble tene-



CORUMBA.

ments. A commander, fifteen soldiers, and about thirty women and children, apparently mixed breeds of whites, Indians, and ne-

groes, are the inhabitants of this place, which has the appearance of a forlorn settlement of squatters.

The neighboring forests abound in jaguars, said to be equal in ferocity to the Bengal tiger. Having heard that the commander was a Nimrod, I proposed a hunt, to which he readily assented, and both time and place of meeting were arranged. We were punctual to our appointment, but by some mistake spearmen and dogs started before us; as the latter failed to strike the trail of a beast, we lost nothing. The commandante showed us a fierce pack of dogs, with each one of which was associated some fearful story of hairbreadth escape. He gave us also a spirited account of his hunting adventures, always perilous where the jaguar is the object. He goes out armed with a double-barreled gun, and attended by two spearmen or lanceros, each furnished with a long lance and knife. The lance is pointed with iron, and on either side, about fifteen inches from the end, is a projection of the same metal, forming a cross; this is to keep the tiger at a safe distance as he receives a thrust; for, if not wounded in some vital point—heart, head, or spine—he never falls or attempts to escape, but, infuriated, springs, with wonderful strength and the agility of a cat, at the hunter. The arm of the spearman must be strong and steady, and the second fire fatal, or the result of the battle is doubtful. On one occasion a powerful beast, enraged by a slight wound, in an incredibly short time laid eight dogs dead around him, and made a dash at the commander, who had ventured out without his lanceros, and only saved himself by a precipitate retreat.

"*December* 2*d*. During the last forty-eight hours the river has fallen $3\frac{1}{2}$ inches. We gathered some wild fruits to-day while strolling through the woods near the settlement—the guacupari, pleasantly acid; cacan, mangarba, cipata.

"*Albuquerque*, *December* 3*d*, 1853. Fearing to be caught in the upper waters, I returned to Albuquerque, making the run in seven hours and a half; on board, the Commandante of Corumba and his wife, who wished to visit this station.

"Temperature of air at 6 o'clock A.M., 75°; at three P.M., 92°; calm; water, 89°, the highest temperature yet felt. In passing again the Paso Cambarasa, to which I have alluded, we inclined more to the right, and found deeper water, proving that in ascending we were out of the channel."

Albuquerque takes its name from a mountain, evidently a detached range of the Sierra Dorado, known also to the Bolivians as

the Sierra Santa Lucia. It is the central and principal post on the Paraguay frontier, and is embraced in the command of Captain Peixoto de Azevido, whom we found here upon our arrival. On this occasion we visited the village, beautifully situated, about three miles from the river, amid a grove of tropical trees, which concealed it entirely from view as we approached.



PLAZA OF ALBUQUERQUE.

The whole aspect of the place was cheerful and pleasant; it consisted of sixty or seventy adobe houses, built round a plaza, at one end of which, as usual, stood the chapel, with its white-washed gable and cross. In the centre of the square were several guns, and in the immediate vicinity a number of huts occupied by Guanos Indians, part of the agricultural tribe to which I have alluded in connection with the Mbayas.

I accepted an invitation from our friend the commandante to breakfast with him, and spend the day in visiting the various Indian settlements of the neighborhood. After an abundant repast, to which all the officers of the Water Witch and some of the principal personages of the village were asked, we called at two establishments of Guaycurus. They live in neat huts, and occupy themselves so successfully in cultivating the ground as to supply nearly all the vegetables used at Albuquerque, and many of those sent to Coimbra and Corumba. The following day we visited the "Missao da Nossa Senhora de bom Consuelho, no Baixo Paraguay," about eight miles from Albuquerque, which is still more interesting, as exhibiting the aptness of the Indian for civilization.

The subjects of this mission are Guanos, under the immediate

charge of a Franciscan friar, who labors zealously both to Christianize and improve their temporal condition. In witnessing the results so far, we were involuntarily impressed with respect for the religion and for the order. A few years past, these Indians, now forming a Christian community, were wandering among the wilds of the Chaco.

Our ride extended through a fine rolling country, but we were scarcely prepared for the neatness, order, and cultivation immediately around the mission. One end of the large plaza was occupied by the church and school-house, and on two sides were the dwellings of the Indians, merely thatched huts, but admirably constructed for health and comfort in a tropical climate. Twenty feet was the width allowed to each house, which, with a door at either end, and partitioned within by cotton curtains, had all the necessary advantage of privacy, with free circulation of air; some simple cooking utensils, two or three cots, and a raised platform on one side completed the interior arrangements. The platforms served during the day for tables or seats, and at night, where the family was large, as places of repose.

To each house was attached a garden, where vegetables were grown; but surrounding, and at some distance from the village, were plantations and fields of corn, sweet potatoes, mandioca, beans, rice, etc. In the lowlands of the vicinity, called *Pantanos*, is found a native rice, not so white as the Carolina grain, but nutritious, and excellent to the taste. It is regularly harvested by the Indians, who thrash the grain from the stalks into their canoes. Cotton of fine quality grows abundantly and spontaneously in the neighborhood. This the women spin with the distaff, color with dyes extracted from the barks of the neighboring forests, and weave into the fabrics which form the material of their simple garments. These, for the females, are long chemises confined at the waist, and for the men, pantaloons and ponchos.

Men and boys are trained for a few hours each day by a corporal in military exercises; and in the school were about eighty pupils who had mastered not only the rudiments of a common education, but made some progress in music and dancing. Their proficiency in music reminded me of the assertion of the Jesuits, who allude frequently, and with enthusiasm, to the genius of the Plata Indians for this beautiful art. All the performers in the band, with the exception of the leader and instructor, who is a Brazilian, were Indians.

We dined with the Padre, and found assembled quite a large party, several gentlemen of Albuquerque having been invited to meet us. The dinner was admirably cooked, and served by Indian servants, and we had the pleasant enlivenment of excellent music from the band which was stationed before the house. The dinner was followed by another entertainment, one not anticipated in these wild regions, but, above all, at the good Padre's domicil. This was a dance. While chatting over our cigars, a number of men and women, neatly dressed, came with presents for "Padre's guests," and the young people of the mission assembled in an adjoining room, where, without the least confusion or embarrassment, they arranged themselves into quadrilles, and danced with a spirit and grace that astonished us.

When Captain Azevido proposed our joining them, the officers were quite ready, and, with the others, I soon found myself winding through a quadrille with a handsome Chaco girl, who was much more at home in the figures than her partner. These young Indians were all well formed, and some of them really handsome, with countenances guileless and intelligent; their manner, though subdued and gentle, was perfectly self-possessed.

It was touching to see the love and veneration with which they all, old and young, seemed to regard the Padre.

In our own country enormous and annually increasing sums are absorbed by foreign missions, but we hear little of extended and united efforts among Christian societies for the evangelization of the Indian. Acting upon the healthful maxim of "justice before generosity," surely the first thought of our missionaries should be for the aboriginal inhabitants of this continent. Some of the forest tribes, driven from State to Territory, from our fertile Territories to the wilds of the Rocky Mountains, are threatened with extirpation; they have been the victims rather than the enemies of a rude border population, who have enriched themselves from annuities, the price of their birthright, and initiated the savages only into all the vices of civilization.

The capacity of the American savage for a high civilization has never been fully demonstrated. No enlarged and well-digested policy has yet been essayed which accorded them spiritual instruction, with political rights and personal freedom. Greatly as humanity and religion must ever deplore the hasty and forced abandonment of the Plata missions by the Jesuits, admirable as was the secular administration of the fathers, and extraordinary as

was the proficiency of the Indians in many of the arts, their "Reductions" were but religious communities, governed each by two or three feeble men. They were desolated by fierce marauders, disturbed by the interference of government officials, who pretended to discern in them the germs of an independent empire, jealously watched by ecclesiastics, and surrounded by a white population eager to enslave their neophytes. It is therefore no reproach to the labors of Jesuits that the condition of the Indian, to the last, was one of pupilage. And we can not wonder that when suddenly exposed to reactionary influences, separated from his paternal governors, and subjected to the capricious and jarring tyranny of civil and ecclesiastical rulers, he should have again sought the wild freedom of the forest.

It was not only a pleasure, but a duty to return the hospitalities of our Brazilian friends, and this in the best manner that the limited and nearly exhausted stores of the Water Witch would permit. Invitations were immediately given, limited only by our accommodations; and if the table could not present a sumptuous bill of fare, it boasted a few bottles of good cheer, reserved for such occasions. "His Imperial Majesty," "the Stars and Stripes," "our glorious Union," and lastly, but enthusiastically, by our guests, "the Explorations of the Water Witch," were all subjects of toast. Sentiment and song, anecdote and tale of adventure, followed each other in quick succession. The western wilds of Brazil never before re-echoed the song and laughter of a merrier party, all natives of the American continent.

To give some idea of the profits of trade to Cuyaba, I append the prices of certain articles at the time the Water Witch was in those waters. Salt sold at ten dollars the Brazilian arroba (thirty-two pounds), flour at fifteen dollars the arroba. The former is an essential of life, which never can be supplied from the natural resources of the country.*

I purchased at Albuquerque, for the ship's company, brown sugar at five and a half cents a pound. It was made in the neighborhood, and neatly moulded into blocks, each weighing one and a half pounds. The caterer of the mess bought refined white sugar, also made at Albuquerque, and moulded in the same form, for thirteen and a half cents. For coffee brought from Cuyaba

* Mandioca is at present, in the north of La Plata, a substitute for bread, and, while traveling in the eastern wilds of Paraguay, I have eaten bread made from flour of the bitter mandioca equal to the finest wheaten loaves.

we paid twenty-seven cents per pound. It is said that plantations of coffee would succeed admirably in this region of the country, but the population is small, and the impossibility heretofore of finding a market has alone prevented its cultivation. The high price we paid arose from a temporary scarcity of the article at Albuquerque, and the unusual demand of a quantity for a foreign ship's crew.

The steamer was overrun with Indians bringing presents of pigs, poultry, sugar-cane, bananas, and vegetables, expecting in return, not money, but salt. The steward was not allowed to impose upon their ignorance, and when they received a pound in return for two chickens or a pig, they were amazed at our liberality. The supplies brought were greatly beyond our wants, and obliged us to decline them at last, giving all who came, however, a little salt.

"The river has fallen within the last three days seven inches, as shown by the gauge. Temperature of air varying from 75° to 96°; that of the water, 89°.

"*December 7th*, 1853. When about to get under way for Coimbra, with its commandante on board as our guest, we were approached by a long, unwieldy open boat, containing four refugee Bolivian officers, who had brought letters from the Governor of Matto Grosso to Commandante Azevido. I released them from their confined position by offering them a passage to Coimbra, and took the boat in tow. They were making their way to Buenos Ayres, or some town in the Argentine Confederation, and could they have escaped over the southern borders of Bolivia, they might have reached Salta in five days; but by that route capture was almost inevitable, and as they had taken a leading part in the late revolution, which had failed, they would have paid the penalty with their lives. There was but one road open to them —through the north to Cuyaba; following this, they had traveled, when we met them, two thousand two hundred miles by land and river.

"*December 9th.* Have just returned from a visit to the 'Grotto Inferno,' which is north of the fort, in the same range of hills, and about a mile and a half from the river."

For the convenience of carrying instruments, hydrometer and barometer, and for securing any specimens to be found of an interesting character, we went in boats, which made the distance three miles. We could not approach within half a mile of the

base of the hill with the boats, but, plunging through mud and water, we at last stood at the entrance of the grotto—a fissure or mouth in the limestone barely wide enough to creep in.

The general inclination in the line of descent was about 30° from the perpendicular, with a shaft of sixty feet. Descending cautiously upon hands and feet, we reached the margin of a lake, and found ourselves in a magnificent irregularly shaped hall, embracing an area of about two thousand feet. Its roof, varying from twenty to forty feet in height, rested on columns, symmetrical and grand, as if designed and placed there by accomplished architects and skillful workmen. Between the columns were stalagmites, rising in the form of pillars, four, five, and six feet in height, standing at regular distances, like sentinels suddenly transformed into stone; the stalactical depositions were of the most beautiful and fantastic forms; and as the crystallized surfaces of sides, roof, and pillars reflected the blue lights and torches of our men, they glittered and shone with all the brilliancy and varied hues of gems. What ages must have elapsed while the great work had been going on for the meeting, drop by drop, of ascending and descending points, until those stupendous columns were formed! Ours was a noisy party, but in the momentary intervals of silence we heard the unceasing drip.

Entrances, half concealed below the water, led to lateral branches, which we did not attempt to explore. Our men bathed in the sweet, limpid water of the lake, which had a depth of eighteen feet; temperature above the standard of our hydrometer, 75° 05′, while that of the air was 80°; the latter, however, undoubtedly increased by the heat of the torches and the number of our party. The commandante assured me that this lake rises and falls with the periodical variations of the Paraguay. We toasted the divinities of the spot, until, warned by the waning lights, we gathered up specimens, and began a scramble for the mouth of the grotto.

It was an undertaking, with the encumbrance of a few stalactites; but the commander, having heard me express a desire to carry off one of the "sentinels," had assigned to his men what seemed an impracticable task with the means at hand—that of raising one of those stalagmites to the mouth of the grotto. The feat was accomplished in safety; and the column, weighing two hundred and fifty pounds, was carried in triumph to the Water Witch.

One of the Bolivian officers accompanied us in quite an elegant toilet, embracing a pair of patent-leather boots. Such parts of

these as stood by him after the descent and ascent of the grotto were totally "used up" in the tramp to the boat. Misfortune and companionship in the wilderness had made us intimate. His woeful appearance was a fruitful subject of merriment and jest, which he bore with such philosophy and good-humor as to join heartily in the laugh against himself.

From barometric measurement, the highest point of the ridge overlooking the fort was four hundred and fifty-one feet above the level of the river. The temperature ranged from 75° to 93°; by gauge, water fell 2.4 inches per day.

When about to leave Coimbra, I received a letter from General Gregorio Perez, Colonel Hilarion Ortiz, Lieutenant Colonel Ysidoro Reyes, and Doctor Antonio Zaveo, the four Bolivian officers, asking a passage in the Water Witch to Asuncion. It was a pleasure to accede to this request, for their position was truly forlorn; but in doing so, I asked the general to report their presence at the first Paraguayan town. In Francia's time they would inevitably have been detained, but under the present government the result was what I anticipated; they were stopped at Salvador until the President could be notified of their arrival, but were eventually permitted to leave the country, and went down to Buenos Ayres in the Water Witch when she descended for supplies.*

On the 11th of December, we parted, with regret, from our friend the kind and gentlemanly Commandante of Coimbra, but with the hope of seeing him again when we return in a small steamer to complete the exploration of the upper waters. He presented us with a half-grown jaguar, and several rare birds; one, the "Motu"—of the pheasant family, about the size of a small turkey—female brown, with brown and white crest; male black, with black crest—is easily domesticated, and delicious for the table; it may prove a valuable acquisition to our domestic fowls. The jaguar is fawn-colored, with dark spots encircled by a black ring, which, at a glance, distinguishes this animal from the leopard. In this specimen the marks are bright and well defined.

These, with several interesting animals, were sent home; some died on the passage, others after their arrival in the United States. The instructions of Mr. Kennedy gave me a hope that my contributions might form the nucleus of a national zoological collection, and I made such a suggestion to his successor, but it met with no

* By the last revolution, September, 1857, this party is now in power.

encouragement, as Congress had made no appropriation for such an object. The tiger is now alive at the farm of the Insane Asylum near Washington, and exhibits every evidence of untamed ferocity.

On one occasion the Water Witch was visited by a lady, accompanied by a lovely little girl. The jaguar was lying in her cage, quietly as usual when undisturbed or not hungry; but at the sight of this child she sprang up with a fury that startled us. Each time as the child passed and repassed we witnessed the same exhibition of ferocity.

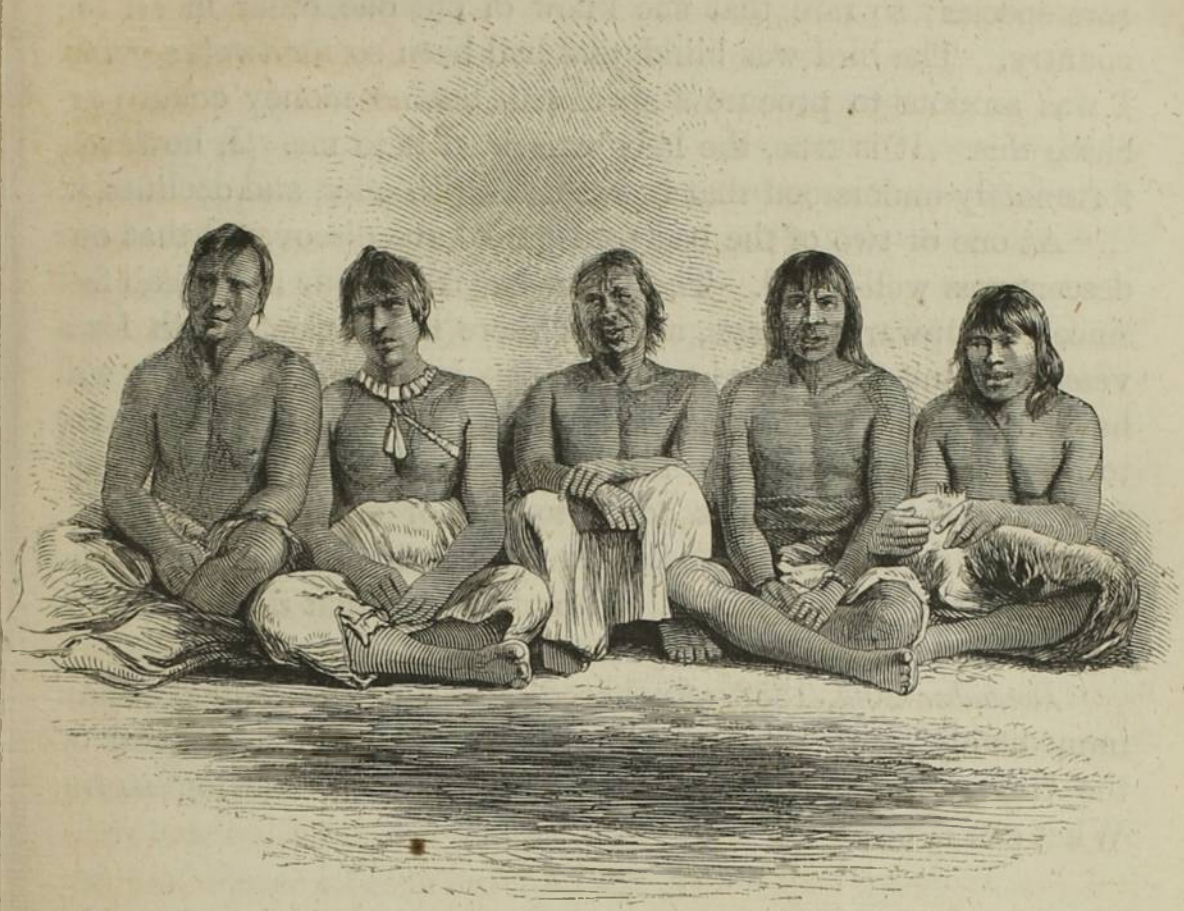
"Reached the Salinas, to which I have alluded in ascending the river; saw many Guaycuru wigwams swarming with busy occupants, for this was the season for making salt.

"Anchored, as the sun was setting in glorious majesty, amid a sea of crimson, gold, blue, rose. How gorgeous are these tropical sunsets, and how solemn, as all nature, with short interval, sinks into shadow of night!

"Many Guaycurus came on board; they had never seen a steamer, but manifested no astonishment. The women were of the ordinary stature; men above it, with fine muscular development."

"*December* 14*th*. Anchored off Salvador." As I expected, the Bolivian officers were detained for instructions from Asuncion. "Met here a cacique, and some men of the Lengua tribe. I persuaded the cacique and several of his companions to sit for their daguerreotypes. At the sight of them they showed both wonder and delight; it is the first time that I have seen the La Plata Indians exhibit an emotion."

"*Concepcion*, *December* 15*th*. I have endeavored, but in vain, to procure horses for the officers and myself to visit the 'Yerbales.' The commandante, in our ascent of the river, was all civility; now he wears a long face, and makes many excuses for not complying with my request. 'The horses,' he said, 'were away.' I extended the time for our excursion; the commandante extended the distance to which the horses had been sent. I am puzzled, but have been long enough in the country to know that the countenances and deportment of officials reflect that of the government. Something is wrong. It would be less dangerous for the poor commandante to spend a few days among the Indians of the Chaco than to show us civility, if I have, however unintentionally, incurred the displeasure of the 'great heart of Paraguay;' for that influence penetrates every artery of the body politic.



LENGUA INDIANS AT SALVADOR.

"It is astonishing with what rapidity the commands and wishes of government are here transmitted to every part of the republic. From guardia to piqueta, from piqueta to guardia, these Paraguay couriers move with a rapidity that would rival the speed of an express locomotive. I have been more successful in procuring specimens than horses, and have added many fine birds to our collection.

"The weather during the last few days has been intensely hot; thermometer varying from 73° to 99°; and this heat is neither debilitating nor oppressive, tempered as it is by constant breezes, south, southeast, southwest. Thermometer at 9 A.M., 93°; water, 87°.

"Anchored at one of our wooding points off the estancia of Señor Antonio Garcia. The Water Witch has been visited by his family, and many others of the neighborhood. One of the ladies brought with her a yellow parrot. It is known that the Indians of Paraguay have sometimes succeeded in changing the color of the parrot by plucking the feathers of the young bird, and pressing into the pores a fluid, which imparts its hue to the new plumage; but señora assured me that hers was a genuine and

rare species; so rare that she knew of but one other in all the country. The bird was blind, and had been so for twelve years. I was anxious to procure a specimen, but no money could purchase this. It is true, the lady presented it to me. I, however, fortunately understood that it was a Spanish offer, and declined it.

"At one or two of the bad passes we have discovered that our descent was well-timed. The water has fallen four and a half feet since our upward passage, and yet there is sufficient depth for a vessel of nine feet draught. Four feet more, and the river will have reached its minimum. It is subject in the month of January to a partial rise, similar to the *Repunte* of the Parana, which occurs in November, and is equal to five or six feet. While at Asuncion in January, 1854, between the 12th and 21st of the month, it rose eleven inches, continuing from that time to February to decrease, as previously shown.

"*December 20th*, 1853. Anchored off Asuncion; visited almost immediately by the port captain, whose countenance, like that of the Governor of Concepcion, is ominous of a brewing storm. What can it be?"

CHAPTER XII.

The Captain of the Port.—Momentous Question.—A Call at the Government House.—The Secretary of State.—Visit to the President.—The Anniversary of Paraguayan Independence.—Minor Explorations.—Congress of 1812.—The Consuls.—Francia.—Provisional Junta.—Another Congress.—President Lopez.—The Constitution.—Ignorance of the People.—Society.—Señoritas and Flowers.—Paraguay Tobacco and Smokers.—The Siesta.—Another Call upon the President.—The Vaquerano.—A Tour into Paraguay.—Señor Don Jaimi Corvallan.—Perijû.—Señora Dalmacia.—Villa Rica.—Don Louis Homan.—The Tebiquari.—The Recado.—Puesta del Estado de Jesus Maria.—The Dinner.—The Peripo.—Mr. Francis Wisner.—Señor Sergente Lopez.—Señora Clara.—Manufacture of Cigars.—The Taquari.—Fertility of the Country.—Medical Men.—Healthful Climate.—Puebla Carmen.—Don Mariana.—The Yún.—El Secretario.—Ytapua.

THE captain of the port is an important personage at Asuncion; he not only notes all arrivals and departures by water, but is a confidential friend of the President. His every look and act are watched by the Paraguayans as reflecting that of his Excellency. I found him, on my return, not wanting in official courtesy, but depressingly solemn. At last he asked a great and momentous question.

"How far did you go?"

"I ascended to Corumba in Brazil."

"Then you went beyond the limits of Paraguay?"

Here was a key to the mystery. I now understood why all the horses of Concepcion had so suddenly disappeared; why the good commandante, so zealously anxious to serve us in ascending, was so officially cold in descending.

I have alluded to the celerity with which intelligence is transmitted through Paraguay, by means of guardias and piquetes. The port captain knew very well that the expedition had entered the Brazilian waters, and I understood that, in questioning me as to the extent of our explorations, he only acted under instructions, and that my answer would be duly reported.

I said, "having completed the survey of the river throughout Paraguayan territory, and finding that we were on the borders of Brazil, I availed myself of the imperial permission, and ascended to Corumba. It is true, that in my interviews and conversations with the President on this subject, he raised objections to my going beyond the limits of Paraguay, but I always combated them, and as this official letter was sent after my last conversation with him, I concluded from its tenor that he had yielded the point. I know that his Excellency will be gratified at the result of my work, for I can give him information as to neighboring territories which he has never before received." I then showed the official the President's letter. He looked disturbed, and bade me *adios*.

I called as soon as possible at the government house. The officer in attendance announced my visit, but returned immediately, saying,

"His Excellency is too unwell to receive you, but requests that you will call on the Secretary of State."

"Express to his Excellency my regret at his indisposition, and say that I have no official business with the Secretary of State; but I will call on him."

The Secretary of State was profoundly polite, but as solemn as if under condemnation to be shot for treason.

"He hoped that I had enjoyed the trip." The secretary was disposed to regard it as a pleasure excursion.

I replied, "I have received pleasure from the exploration of the river beyond Asuncion, and much of this pleasure arises from a knowledge of the success of the work so far; for this success I owe much to the liberality of the Paraguayan government, and

avail myself of this occasion to express my thanks for the hospitality and official consideration with which we have been received at every point upon the river. I regret that the indisposition of his Excellency the President, obliges me to wait for the pleasure of expressing to him my gratitude."

The secretary relaxed somewhat from the rigidity of countenance and manner which he had maintained since my entrance. At this propitious moment I rose and said "good-morning."

I understood now the whole question; in entering Brazilian territory I had touched the dignity of the republic, periled its peace, and it was considered necessary to make me aware of this.

After the lapse of a day or two the President's recovery was intimated to me, and I called at the government house, was admitted, and found his Excellency seated as usual at the circular table. The conversation soon turned upon the extent of our explorations, when his Excellency became excited. One would have supposed that I had let "Los Portugases"—as he called the Brazilians—in upon him.

He "knew," he said, "that the imperial government would demand the privilege accorded to the United States expedition."

I said, "I think your Excellency takes a mistaken view of the question. Our explorations can not be assumed as a precedent to do more than the expedition has aimed to accomplish, and if Brazil should demand the same privilege it would be absurd. The surveys of the river have been carefully made. The results will be published, and the imperial government will receive the same benefit that any other might expect."

I reminded him of our last conversation on the subject, also of his official letter, which I regarded as an abandonment of all objections to my ascending as far as I could, and then said,

"I am happy now to present your Excellency with a sketch of the river, throughout the limits of Paraguay, of perhaps far greater accuracy than any thing you have before seen."

He assured me repeatedly, during this visit, of his high consideration for me officially and personally; and from this time my relations with him, until again disturbed, were of a far more friendly and confidential character than they had previously been. A few days later I had an interview with him on some other business; he adverted playfully to the subject of our difficulty, and said, "We are now as good friends as ever."

The 25th of December is the anniversary of Paraguayan inde-

pendence, and is therefore, in that country, both a political and religious festival. Accompanied by some of the officers of the Water Witch, I called to pay my respects to the President, who was, as usual, before the circular table, and in full uniform. He requested us to be seated on his right; and we took possession of one of the rows of chairs, to which I have previously alluded as being always stationary. Opposite, on a corresponding row, were seated some Paraguayans. All was solemn and still. I ventured to break the silence by congratulating his Excellency upon the prosperity and peace of Paraguay. In reply he referred, in complimentary terms, to the United States, to their rapid advancement, and their prominent position among the powers of the earth. Neither on this or any similar occasion did I observe the presence of ladies; strong-minded women have then here both political and social wrongs.

The wheels of the Water Witch had become so much damaged, that it was necessary to make some temporary repairs before she could attempt the passage to Montevideo for provisions, and a more thorough overhauling. When ready she was dispatched with such officers as were absolutely necessary, while others were detailed for various duties of the work in Paraguay.

The small steamer was now completed, and assigned to Lieutenant Murdaugh, who was to explore a river which was said to flow from the Chaco into the Paraguay, sixty miles from Asuncion. Finding no such stream he entered an arm of the Paraguay, some distance above; ascended it for fifteen miles, and discovered that it there terminated in grass and camelotes, having no current to indicate it being a river. This was doubtless the supposed tributary, and is but another evidence of the prevailing ignorance of the geography of the opposite territory, even in the vicinity of the capital.

To obtain some information as to the resources and cultivation of this country, I determined to go into the interior; following a route that would lead through the most populous districts, and to some of the old settlements of the Jesuits, among them Ytapua, now called Encarnacion—from which point, north, the Parana forms the eastern boundary of the republic. While engaged in preparation for these new movements of the expedition I had again an opportunity of seeing something of the capital, the centre of trade, politics, and social life. Its population is estimated at from ten to twenty thousand—certainly a wide difference in

numbers; but, from the absence of statistical information, or rather from the objection to making any thing known to strangers, a foreigner is left very much to the result of his own observations. I should say that it contains about twelve thousand inhabitants. The non-intercourse policy of Francia and Rosas has operated here as banefully as in many other towns of La Plata. With no motive for exertion, the habit is lost, and yet I found the Paraguayans quick to avail themselves of the information and intelligence of others.



GASPAR FRANCIA.

The independence of this country was acknowledged by Buenos Ayres in 1811; a Congress assembled in 1812, and confided the administration of affairs to two consuls, Yegros and Francia. Yegros possessed some military talent, but was idle and illiterate. He left the management of affairs entirely in the hands of Francia, who regulated the finances, the military, and the administration of justice with so much address, filling every public place with his

own creatures, that, in 1814, he succeeded in having himself named as dictator for three years, and at the expiration of that time for life. He was intended for the Church, and graduated at the University of Cordova; but, having more taste for jurisprudence than for theology, he took the degree of Doctor of Laws, in which profession he attained both popularity and distinction. Providence granted him a long life. He was fifty when he was made supreme ruler of Paraguay, and had, by some years, passed the period assigned to man when death closed his career.* The iniquity of his rule was progressive, and his apologists—for even Francia has found them—declare that, as a lawyer, and during the first years of his dictatorship, he displayed integrity and generous traits; that the excessive severity of his character was developed by, or was the consequence of the conspiracies that constantly menaced his political power. It is almost impossible to arrive at the ruling principle of his action, or even to obtain reliable information as to the acts of the later years of his dictatorship. No records were kept, and all orders were returned to him, with "executed" marked on the margin, and were then destroyed. We can only believe that cunning, not principle, restrained his designs, until the habit of submission on the part of the Paraguayans was fixed.

It was his favorite maxim that "liberty should be proportioned to civilization, and that the exercise of it was prejudicial where not demanded as a public necessity." The doctrine of non-intercourse was adopted, he declared, to save Paraguay from the anarchy that decimated the population of other parts of La Plata, and from the ambitious designs of Buenos Ayres, who sought to exercise a dominating influence over the whole basin.

Ytapua on the Parana, and Nembucu on the Paraguay, were open to trade, or rather to change of commodities, by special license, Francia being the principal, or, in fact, the only merchant. When he needed foreign articles, a permit was sent to Corrientes for a vessel to enter Nembucu. An invoice of the cargo was forwarded to him, upon which he placed his own valuation; and payment was made in yerba, an article in such demand in the lower provinces that the people were glad to get it upon any terms.

After his death, which occurred on December 25th, 1840, a Provisional Junta was appointed to administer the government

* After his death there was found among his papers a list of fifty persons to be executed.

until a Congress could be convoked. At the end of four months, finding the members of this body indisposed to yield up the authority confided to them, the people rose, went to the government house, and forced them to resign. At the end of eighteen days an extraordinary Congress of four hundred members was assembled, and the administration of affairs was confided to two consuls, Carlo Antonio Lopez and Marianna Roque Alonzo. The new magistrates entered upon the exercise of their functions in May, 1841; the first with a salary of four thousand dollars per annum, the second with three thousand. In 1844, Congress having decided that the consular government should be replaced by a president as chief magistrate, Señor Lopez was elected for ten years, and installed March 13th, 1845, with a salary of $8000 per annum. There was no provision limiting the re-election of the same individual. Consequently, in 1854, he was again chosen for another term. The age of the candidate, before fixed at forty-five, was changed to thirty-three; a move made, it is supposed, by the President by way of securing the succession for his eldest son, General Lopez.

Paraguay had a Constitution when Francia was made dictator. She has one now, perhaps, for I could learn nothing officially. But that avails nothing. The Constitution is interpreted; the judiciary, elections, and congresses are alike controlled by the President, who governs with an authority as unquestioned as if he were supreme Dictator. The commandantes of each *jurisdiccion* are appointed by him. These officers, in turn, nominate the delegates for Congress, allowing a certain representation to each *partido;* and the Congress chooses the President, who is thus elected *per se.*

There are few in this country who comprehend the first principles of civil liberty. Pitilessly, and with wonderful astuteness, Francia first debilitated the organic springs of their political system, feeble at best, and eventually destroyed its strength and life. So far as I could learn, the administration of President Lopez is unstained by crime; but there is no opposition to his authority; there are no political conspiracies to test the temper or integrity of his rule. An unquestioning and timorous submission to his decrees, a reverential awe and demeanor in his presence, are observed by all, however high their official or social position. Paraguay has no precedent, historic or traditional, on which to base a more enlightened government; and her chief magistrate,

though a man of natural abilities and some education, loves power, and is wary and unscrupulous in the exercise of it. He talks much of "the Republic," and of his desire to improve the condition of the people; but he needs the experience which must come from friction with foreign governments, the instruction of rebuke, and the bold unselfish energy of Urquiza, to become an enlightened ruler. He has made some effort for the establishment of schools, at least in Asuncion; but it is a favorite theory with him that a sudden or rapid transition from the present primitive state of the Paraguayans would operate unfavorably to the harmony of the government and the peace of the Republic. He gives them a little learning cautiously and slowly.

The better class of society in Asuncion consists of a few families of Spanish origin, among whom there are not many individuals who could meet, according to our ideas, a good educational standard, though the men possess a vast deal of *suaviter in modo*, and the women are graceful and talk amazingly well. They have much talent for narration, and will give jaguar and Indian stories with infinite spirit.

Madam Lopez resided at a quinta, about six miles from the town. The distance afforded a pleasant ride, and we were always kindly received by the señora and her fair daughters, who have all the ease of manner and tact which is so attractive in the Spanish-American women. In the half dozen families of the city that formed the circle of our acquaintance we were always hospitably received, and with several of them our social intercourse was truly agreeable. Foreign articles of female attire are replacing the primitive fabrics, which the arbitrary decrees of Francia obliged all to use. The laces of France and Belgium are superseding the elaborate domestic cotton productions of earlier days, which are now only used as trimmings for bed furniture, or are bought by foreigners as curious specimens of female handicraft. In the houses of the wealthy, at Asuncion, the house-linen is tastefully decorated with these domestic laces.

At the capital, and indeed at all the river towns of La Plata, a pretty custom prevails among the señoritas, of presenting every visitor with flowers. Their gardens may not display a large collection, but if they produce but a single sprig of sweet odor it is given to the first comer. In calling at different houses in the course of the afternoon, the visitor would accumulate quite a number of bouquets, did he not learn from experience that, to save

himself from a broadside of graceful reproaches, it would be advisable to conceal or part with the flowers of Señorita Maria before entering the presence of Señorita Thèrésa. Each lady must suppose that she is the sole object of the afternoon's homage.

We were invariably offered refreshments, either maté or English ale, which is very popular among the Paraguayans, and throughout the river towns—or the *panales*, a very refreshing domestic drink, made of the white of eggs and sugar beaten together, and formed into cakes of a cylindrical shape, looking like a delicate honeycomb. A little negro presents the visitor with a plate of these, always with a glass of water; the panales immersed in the water dissolves immediately, and affords a simple but delicious beverage. The servant after offering this goes out, but soon returns with the *brasero*—a small brass vessel containing a few coals of fire—and a plate of cigars. This last hospitality is offered in every house, however humble its pretensions in other respects; and all men, women, and children—delicate, refined girls, and young masters who would not with us be promoted to the dignity of pantaloons—smoke with a gravity and gusto that is irresistibly ludicrous to a foreigner. My son sometimes accompanied me in these visits, and was always greatly embarrassed by the pressing offer of cigars. I made his excuses by saying, "Smoking is a practice we consider injurious for children." "Si, señor," the Paraguayan would reply, "with all other tobacco, but not with that of Paraguay."

On no occasion, while in Asuncion, were we invited to "dine out," or take tea; and dinners by invitation, or meals taken socially with other families, are unknown. I had frequently visitors while at breakfast, but never could prevail on one to join me at table. The Paraguayans rise early, take maté and cigars, then visit or transact business during the cool of the morning. At midday they dine, then retire for a *siesta*, during which the streets are deserted, every store and dwelling closed, and a profound stillness reigns through the town. After a few hours the houses are reopened, cigars and maté are again served, and each one goes to his daily vocation. Riding, visiting, or walking occupies the time from sundown till nine o'clock, when supper finishes the labors and enjoyments of the day.

I called to inform the President of my desire to visit the interior of his beautiful country; he replied, courteously, that a kind reception awaited me.

"Will your Excellency tell me whether a passport is necessary?"

He hesitated—"Not necessary, but it may facilitate your movements if questioned by some official, who would understand nothing you could say so well as a passport."

The paper was prepared, but demanded only on one occasion, on the extreme eastern frontier of the Republic, where, as the President had foreseen, it was more useful than words.

Our next step was to engage a *vaqueano*, an indispensable attendant to a traveling party; for he is guide, hostler, banker, and interpreter. The last is a very important service, for in many parts of the interior of Paraguay Spanish is as little understood as English or any other foreign language. Guarani is almost universally spoken, and even the higher classes, who use Spanish habitually, understand and speak the Indian tongue with facility.

"Cargaro" horses were also an absolute requisite for carrying our instruments for latitude and longitude, barometric measurements, daguerreotypes, and portfolios for botanic specimens; to say nothing of a change of clothing and bedding for each individual of the party. The latter, however, was not very bulky, being merely an India-rubber poncho.

A hint from the President would be quite sufficient to insure kind treatment to strangers at the hands of every Paraguayan. But, independent of any influence the expression of his Excellency's will might have, I really believe hospitality to be a national virtue. As there are no public houses, travelers must depend exclusively on private entertainment. I instructed the vaqueano to make remuneration on all occasions in the course of our route. It was invariably offered, but in a majority of instances declined.

On the 6th of February, 1854, in the afternoon, our party moved off, much to the amusement of a crowd of men, women, and children, who had assembled to see sailors on horseback. A gentleman who knew the country thoroughly had given me some general written directions as to the best places for siesta and for stopping at night. The first named was the Estancia Corvallan, about eighteen miles from Asuncion. Many estancieros in Paraguay reside permanently in the country, where they have spacious adobe houses. Don Jaimi Corvallan was one of this class of country gentlemen, and one of wealth and respectability. A friend having notified him of our intended visit, he came out to

meet us as we rode up to the house, invited us cordially to enter, and presented us to his wife and daughter, who welcomed us kindly, and busied themselves with the preparation of what proved a sumptuous supper.

Paraguayans of all classes observe the sensible and economical habit of serving one dish at a time, though sometimes a single article of food will furnish material for half a dozen courses. All are varied by nice cookery.

On the present occasion we had "pucharo" (stewed beef with vegetables), "asado" (roast beef), poultry, mandioca, and a "dulce" —a term comprehending a variety of sweet things—in this case a simple but very nice preparation of milk and sugar. After cigars and a chat with Don Jaimi we were shown to our sleeping apartments, where we found beautifully clean beds and white cotton hammocks, with elaborate net-work trimmings.

At an early hour the following morning we were astir and ready for a start. The servant who awakened us served at the same time a maté; and when we were ready to mount, a little negress came forward with a large goblet of foaming milk, fresh and warm from the cow. Our kind host accompanied us for some distance. And now realizing that we had fairly commenced our journey into the interior of the country we felt much pleased with this first experience of its hospitalities.

The road we followed was good, but sandy, and lay through a populous *campo*.* After passing Ytigua, a *pueblita*† with a neat little chapel, we reached Perijû in about three hours, and stopped for breakfast. This village is beautifully situated at the base of a ridge of wooded hills, and has its plaza and church. To the east ranged lofty sierras, and between them and the serranias lay the fertile campo through which we had traveled, winding beyond reach of the eye, and dotted with estancias and herds of horned cattle, or with small fields of corn, tobacco, and mandioca.

The meal at Perijû, which served both for breakfast and dinner, consisted of beef, chickens, and mandioca; the latter a general substitute through the country for bread. Our route from this place still lay through a level grazing country, its monotony relieved by superb woodlands. Passing the village of Paraguayri, we stopped for the night at the house of Señora Dalmacia Fernandez. Festive sounds reached us as we approached—the jingling

* *Campo*, level country, in contradistinction to *sierra*, mountains, and *serranias*, hills, or spurs.

† *Pueblita*, hamlet.

of guitars and dancing. We had disturbed a merry-making, and met with a cold reception. It was too late to look for other quarters, and, fatigued by a long day's ride, I was indisposed to excuse this want of hospitality by remembering that our arrival had interrupted the dance. I revenged myself by an exhibition of independence, which was, I fear, all lost on the señora; for, re-



COSTUMES IN THE INTERIOR.

freshed by a bath in a small river that meandered through the campo, and wrapped in poncho and shawl, I settled myself for the night, quite unmindful of after invitations to supper and bed. The vaqueano had especial instructions to pay for all accommodations which the party received; and at five o'clock the next morning we left with a smile, a courtesy, and an *adios señor*, from

Señora Dalmacia, that would have "taken aback" an old Spaniard. But I was unmoved, and went on my way with a stiff bow, and a determination never again to seek shelter from storm or starvation at the house of this fair widow.

We passed a wooded spur of the sierra, and, after a ride of twenty-one miles, hungry and fatigued, stopped at the Estancia del Estado, about one mile from the Rio Hondo, a small tributary of the Tibiquari. Here two of our cargaro horses, with the daguerreotype instruments, broke down, but we were furnished with fresh animals to take us to the house of Señor José Dolores, our resting-place for the night.

Passing the Capilla* Ybitimi, we arrived, about dusk, at Don José's. He was absent, but we were kindly received by the son, who hired us fresh horses to Villa Rica. As early on the following morning as the laziness of our vaqueano would allow, we were on the road, and in a short time reached the Tibiquarimini (Little Tibiquari), the principal branch of a river of that name. After fording this stream, which was two hundred yards wide, and from two to three feet deep, we entered the Partido Ytape, and breakfasted at the estancia of Señor Manuel Vasquez. Three hours later we arrived at "Villa Rica."

Having letters for a Portuguese merchant, Don Louis Homan, I at once sought his residence, wishing to consult him about quarters for our party. He insisted that as many as could be accommodated should remain at his house; while for the others he found lodgings. I had no wish to impose upon his kindness, but he would only compromise matters by agreeing to find rooms for us elsewhere, provided we would take our meals with him. The hospitality of Don Louis was only surpassed by his industry and intelligence. Though an active merchant, horticulture, mechanics, and the rearing of horses occupied his leisure hours. A garden well stocked with delicious fruits, improved machinery for crushing sugar, and some fine horses, were shown us with evident pride. His racers were really noble animals, though they may not have possessed the "blood and heels" of Eclipse or Henry. Señor Homan also takes an intelligent interest in the native products of the country. His house, like all those of the better class at Villa Rica, was of adobe, and of one story. The furniture was made of Paraguay woods, such as Morosimo, and Tataybà, both of which have a very fine texture, and are susceptible of a high polish.

* *Capilla*, a chapel surrounded by a few dwellings.

The Morosimo is not unlike mahogany; the Tataybà is of a delicate straw color. I am indebted to him for some beautiful specimens of the gum "Mbatitimbaby," which is amber-colored, clear, and apparently as hard as crystal. It is soluble only in nitric acid.

Villa Rica is equidistant from the river Tibiquari on the east, and its tributary the Tibiquarimini on the west. Its position is picturesque, being surrounded by fertile plains, while to the east and west range low mountains covered with noble forests. It has about two thousand inhabitants, and is the principal dépôt for all the products of the neighboring country. These are purchased by its merchants, and conveyed to Asuncion in ox-wagons at the rate of 12½ cents the aroba. Each cart carries one hundred arobas, and consumes twenty days in the travel to and from the capital, without allowing for any detention there or upon the road. Owing to these embarrassments, and the exactions and monopolies of the government, the resources of this region are undeveloped.

The Jesuits had here an important establishment, but the church and other buildings were destroyed by Francia's orders, and upon their ruins was erected an unpretending chapel. The shops, the principal of which was that of our friend Don Louis Homan, were gayly decked with goods.

The country through which we had passed, from Asuncion to Villa Rica, one hundred and eight miles by the road, is throughout populous, picturesque, and fertile; the campo has the appearance of a lovely meadow, and the fine condition of the cattle proved the excellence of its grasses. Skirting the plains are the serranias, and upon these are built the *pueblos*, *pueblitas*,* *capillas*, and dwellings of the country people. Some of the latter are of adobe, and are spacious; others are low thatched huts. The rolling lands rise in gentle slopes to a background of wooded mountains, which form a beautiful and effective setting to the hills, and green pastures below.

There were no large plantations, but many small fields of corn, tobacco, mandioca, and a little sugar-cane.

In the time of Francia, cotton was extensively cultivated for home consumption. I saw but a few plants, the growth of two or three years; for even since the opening of the rivers in 1852, the foreign-manufactured article has worked its way into these interior regions, and the people will no longer pay seventy-five cents

* *Pueblos*, villages. *Pueblitas*, hamlets.

per yard for the domestic fabric, when they can purchase the imported for ten. So much for trade, even in Paraguay.

The Tibiquari and Tibiquarimini, which course through fertile lands, might be made channels of communication to the river Paraguay; but the Tibiquari disembogues one hundred and forty-two miles below Asuncion, and one hundred and eight above Corrientes. The products of the country would of course follow the current, and find their market in the latter city, and draw proportionably from the trade of the capital. This would not at all accord with the aim of President Lopez, which is to make the trade of the Republic centre where he has the collection of the revenue under his direct supervision. It is natural that he should wish to make the ports of Paraguay the seat of their own import and export trade; but more enlarged views would suggest the navigation of the Tibiquari by small steamers, or even boats; and the building of a village, which would soon grow to a city, at its mouth. The aggregate products of the whole country through which this river flows are even now considerable, and could, from its natural fertility, be increased a hundredfold.

We remained several days at Villa Rica to make observations for determining its latitude and longitude, and the variation of compass. Its position, as established by Lieutenant Welsh from altitudes of the sun, and of stars east and west, and north and south with pocket chronometer, sextant, and artificial horizon, is latitude 25° 47′ 10″ south, longitude 56° 30′ 20″ west; variation 7° 34′ east; height above Asuncion 323 feet; and above Buenos Ayres 580.

We also hoped during this delay to refresh our cargaro horses, which were now quite useless from the state of their backs, caused more by the clumsy saddle of the country than the weight of the instruments. This *recado* (saddle), used every where, is not only uncomfortable to the rider, as I had a fair opportunity of judging, but injurious to the horse. Indeed you scarcely see an animal much used in La Plata whose back does not show its bad effects. It serves the double purpose of saddle and bed; and were our saddles encumbered with an equal number of skins or cloths placed under and over, they would answer as well; but the people of these countries trouble themselves little with improvements; old things are preferred because they are old.

From the difficulty of obtaining horses, and accommodations for so large a party, I determined to divide it at Villa Rica. Lieu-

tenants Ammen and Welsh were directed to take another route, while I, abandoning the daguerreotype instrument, and encumbered only with such as were necessary for geographical determination, pursued my course east, accompanied by Lieutenants Powell and Henry, and Mr. Bushell.

Travelers are almost unknown in the interior of Paraguay; and, in the absence of all hotels or public houses, it is difficult to procure a change of horses, accommodation, or rather provisions, for a large party. The grazing is every where fine, but an animal turned out at night is not fit for the next day's travel. At least this can not be followed up for many days successively. The people cultivate only the essentials of life. Corn, though abundant and cheap, is never stored, but sold, as soon as gathered, to the merchant of some neighboring village. One rarely sees bread, except in certain thrifty families, where is found the *chipa*, made of the flour of the bitter mandioca, an excellent substitute for that of wheat.

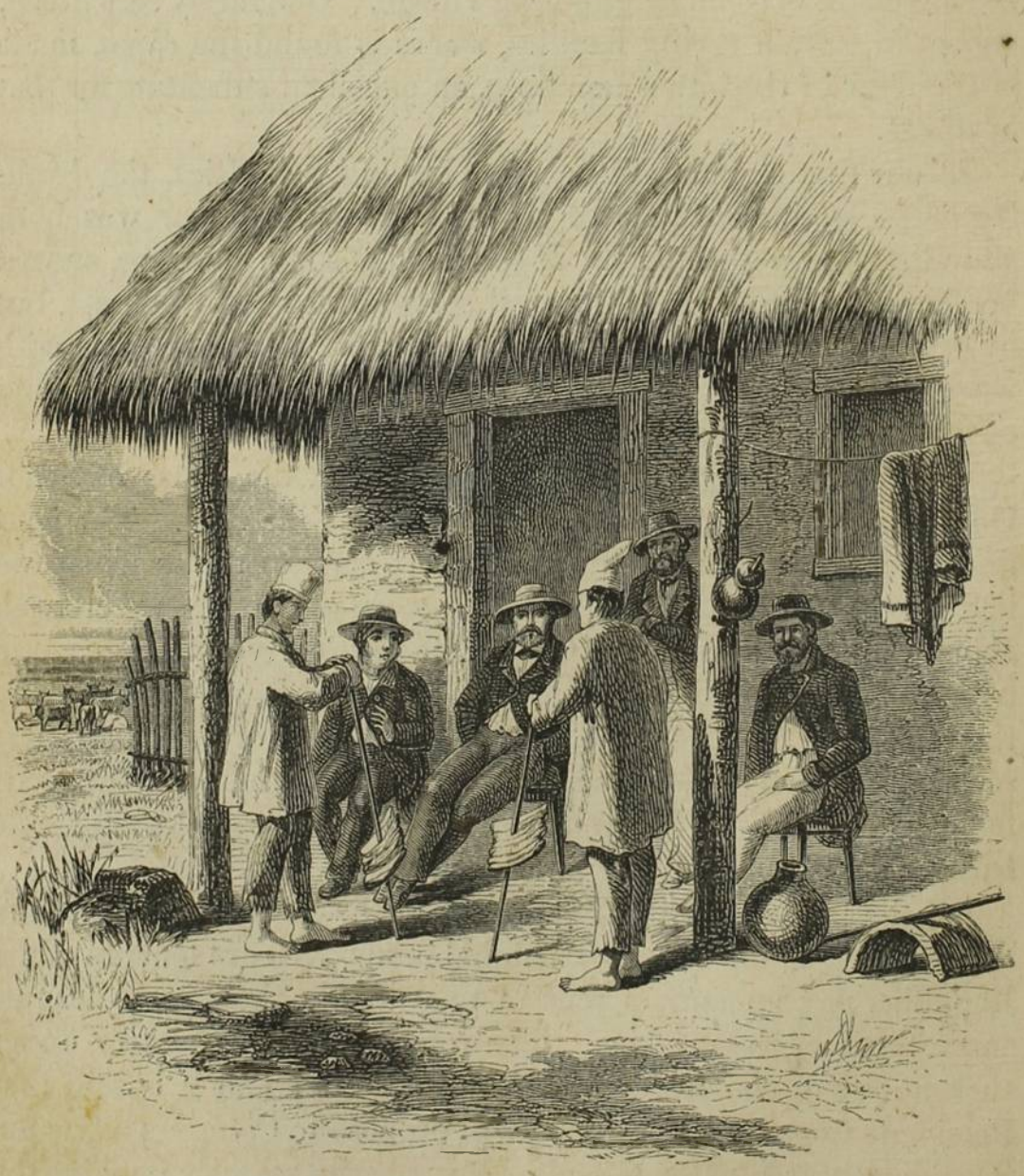
At our first stopping-place, after leaving Villa Rica, the dwelling wore an unusual air of comfort, and the dinner was both abundant and well cooked. It consisted of soup, chickens, stewed beef, hominy, eggs, and milk; all served in as many courses, but in one and the same earthen dish, out of which we ate with wooden spoons. Plates, dishes, and knives are the luxuries only of the higher classes.

We spent the night at Capilla Yacaguazu, the house of Señor Dorothio Duarte, about thirteen miles from Villa Rica. The next day, after some trouble with one of the cargaro mules which we had hired at Villa Rica to replace our worn-out horses, we crossed, about nine miles from the Capilla, the little river Yacaguazu, a tributary of the Tibiquari, and twelve miles beyond arrived at the village of San Francisco, in the department of Caasapa. The physical features of the country to that point continued unchanged; mountains and hills, covered with superb forests, inclosing fertile and populous campos.

All the lands from the Yacaguazu to the Parana, eastward, are the property of the state. The inhabitants, who are tenants of the Republic, pay an annual rent of two dollars the square league, and a tenth of the produce. The resources of the country under such a system can never be fully developed; and it is said that President Lopez, aware of this, will propose to Congress a law authorizing the sale of these lands. But one can scarcely imagine the

action of that body necessary to enable him to carry out his will. The proclamations and edicts of his Excellency are the laws, and they command the strictest observance.

Leaving San Francisco, we reached the Puesta del Estado de Jesus Maria, one of the numerous government estancias, after a travel of six hours, very hungry and tired. In this journey through Paraguay, wherever we were not tempted to enter by the neatness of a dwelling, our dining and sleeping room was always under the projecting roof common to all country-houses. We now occupied the usual place, feasting eye and imagination upon the landscapes before us, but impatiently watching for the appearance of food for the material man. At last a servant of the state appeared, and announced with dignity, "Dinner is ready." We rose



DINNER AT THE PUESTA DEL ESTADO.

from our seats, looked around and within, but could see nothing of the mysterious dinner. Presently out stepped two of the gallant defenders of the Puesta del Estado, each holding a long stick, upon which hung a piece of *asado*. They moved before us, grounded arms, and stood at rest.

"Is that our dinner?"

"Si, Señor," was the answer, accompanied by a profound obeisance, but uttered with an air and voice which implied

"What more would you have?"

We drew our knives, and, without salt, bread, or vegetables, commenced the attack, only to experience the mortification of a defeat. The meat must have been taken from a bullock as old as a Chaco Indian. Our knives were sharp, and we assaulted vigorously only to be repulsed, and this too while our hungry eyes wandered over the luxuriant campos, where two thousand sleek beeves were tranquilly grazing. Surely I had offended Jupiter. I had let in "Los Portugases," and this was my punishment; but it was not everlasting. A few fowls were running about; and one of our party, in a happy fit of inspiration, suggested eggs, on which, with a little Villa Rica bread found among the baggage, we made our dinner. For this luxurious meal and corn for our horses, the charge was one dollar. I never reported the capitan of this puesta, or he would probably have lost his place.

Six miles from this hospitable posta we crossed a tributary of the little river Peripo, and dissipated our ill-humor and disappointment by taking a delicious bath, little thinking that we were soon to taste the same luxury in another way. Night closed in before we reached any habitation, and with it came a terrific storm. The pitchy darkness was only relieved by blinding flashes of lightning, and we moved on step by step, not knowing where the next would lead or end; for the vaqueano, unable to see the road or even the head of his horse, had lost his way. The rain fell in a continuous torrent, while the lightning flashed only to leave us again in more profound darkness. Hark! the bark of a dog. Following the sound, we found ourselves before a miserable thatched shed, or hut, open on one side. It could scarcely be called a house, but it sheltered kind hearts and innocence: a man, two women, and a young child. Any port in a storm, where there is safe anchorage, is to a wearied mariner preferable to drifting he knows not where. We "came to," and asked for shelter. The man sprang from his bed, and without hesitation gave us a

kind welcome, while the women soon busied themselves in kindling up some slumbering embers in the centre of the earthen floor, over which stood a pot. Wet and weary, we gathered round the fire, and regaled ourselves with maté. The man offered me his only bed, a well-stretched hide; but, declining it, I slung up a hammock, wet as my clothes, and turned in "all standing." Light repasts, fatigue, a good conscience, are the best opiates, and under their influence I was soon asleep, dreaming of home, airy chambers, and soft couches.

Nothing could be more lovely than the appearance of the country through which we traveled the following day. The storm had freshened and enlivened all vegetation. The air was soft and balmy; the sun cast a flood of radiance upon the grassy plain, which was inclosed on all sides, apparently without outlet, by wooded mountains, and overspread by herds of horned cattle, exceeding in size and fine condition any we had seen. The district was as populous as that immediately around Asuncion. Every hill-side had its adobe houses, orange-trees, and little fields of corn, tobacco, and mandioca.

Amid all this wealth of pastoral agriculture we came to the residence of a man of refinement and education—a Hungarian engineer, Mr. Francis Wisner, who had here, with his young wife and children, probably pitched his tent for life. Mr. Wisner reached Paraguay in 1845, and rendered good service to the people by assisting them in preparing their defenses against an expected invasion from Corrientes. His labors were poorly requited after the danger was passed. He had made a topographical survey of the country bordering on the Tibiquari, and, at the time of our visit, was working out a beautiful map for the President. My only astonishment was that so intelligent a person should, without the protection of any nationality, be willing to live under such a government. But a strong tie connects him with the country: his wife is a Paraguayan. The laws permit no woman to leave the republic without permission of the President; and the well-known and useful accomplishments of Mr. Wisner would probably only increase the difficulty of obtaining it. He enjoys, however, the privilege of an estate, a league square, in one of the finest regions of the earth, for which he pays the established rent of two dollars per annum, and the "diezmo."

From this quarter of Paraguay the cost of transportation to the capital is twenty-five cents the aroba. Taking the one article

tobacco, we find it encumbered with the following charges: Transportation to Asuncion, twenty-five cents the aroba; exportation duty, twelve and a half cents; the "diezmo," or tenth, fifteen cents. Net proceeds, at the present price of tobacco (one dollar and fifty cents the aroba), eighty-three cents the aroba. The profit would be three and one third cents the pound.

I was anxious to determine the position of Mr. Wisner's house, but the weather would not permit. We however established, by barometric measurement, its height above Asuncion, which we found to be 71 feet, and above Buenos Ayres 328 feet. It will be seen by comparison with the observations at Villa Rica and Asuncion, that the former is the highest of these three points, and that after passing it there is a slight though gradual descent eastward to the Parana; but the country bordering on the Parana, in the same parallel with Asuncion, is more elevated than that on the Paraguay.

After dinner and a few hours of pleasant conversation, we continued our journey, and before dark reached the residence of Señor Sergente Lopez, distant fifteen miles, making in all thirty traveled this day through the *partido* (district) of Bobi. The limits of the various partidos, unless defined by some natural boundary, are difficult to ascertain; and from the difference of opinion on this subject among the inhabitants, we came to the conclusion that they troubled themselves but little to arrive at the truth.

We were kindly received by Don Sergente, who gave us a substantial supper of roast and stewed beef, with the after luxury of cots and neat bed-linen in our usual airy sleeping apartment under the projecting roof. I missed in this journey the refreshing luxury of a cup of tea. Although a lover of maté, and a believer in its virtues, it was to me a poor substitute for the China leaf, which in Paraguay is sold only as a medicine in the druggists' shops of Asuncion. The maté is never served at meals, as tea is with us, but is always the accompaniment of a cigar.

At an early hour the next morning we crossed the little river Uputa, a tributary of the Aguapay. Eight miles beyond is the dividing line between Bobi and San Casmi. Seeing a house with fine patches of corn around it, we thought it a good place for breakfast. It proved to be the residence of an old lady, who, unlike Señora Dalmacia, gave us a kind reception. The dwellings of the country people are uniformly on the public roads; and by

keeping a bright look-out for the significant indications of good cheer, cattle, small fields of corn, and mandioca, a traveler may generally, without fear of disappointment, find enough to satisfy his appetite. We had been but a short time at the Señora's when an agitation among the chickens, and certain other unmistakable signs, gave a pleasant forewarning of dinner. The good woman soon placed it before us, then placidly seated herself at a table near, and continued her work, making cigars from tobacco which hung from the roof, and had only a month or two before been cut from the field. To all appearance the leaf was of a fine quality; and after rolling one up in the neatest manner, she gravely placed it by my plate, with a request that I would smoke it. I asked her to make me a few, and though so fresh they proved excellent.

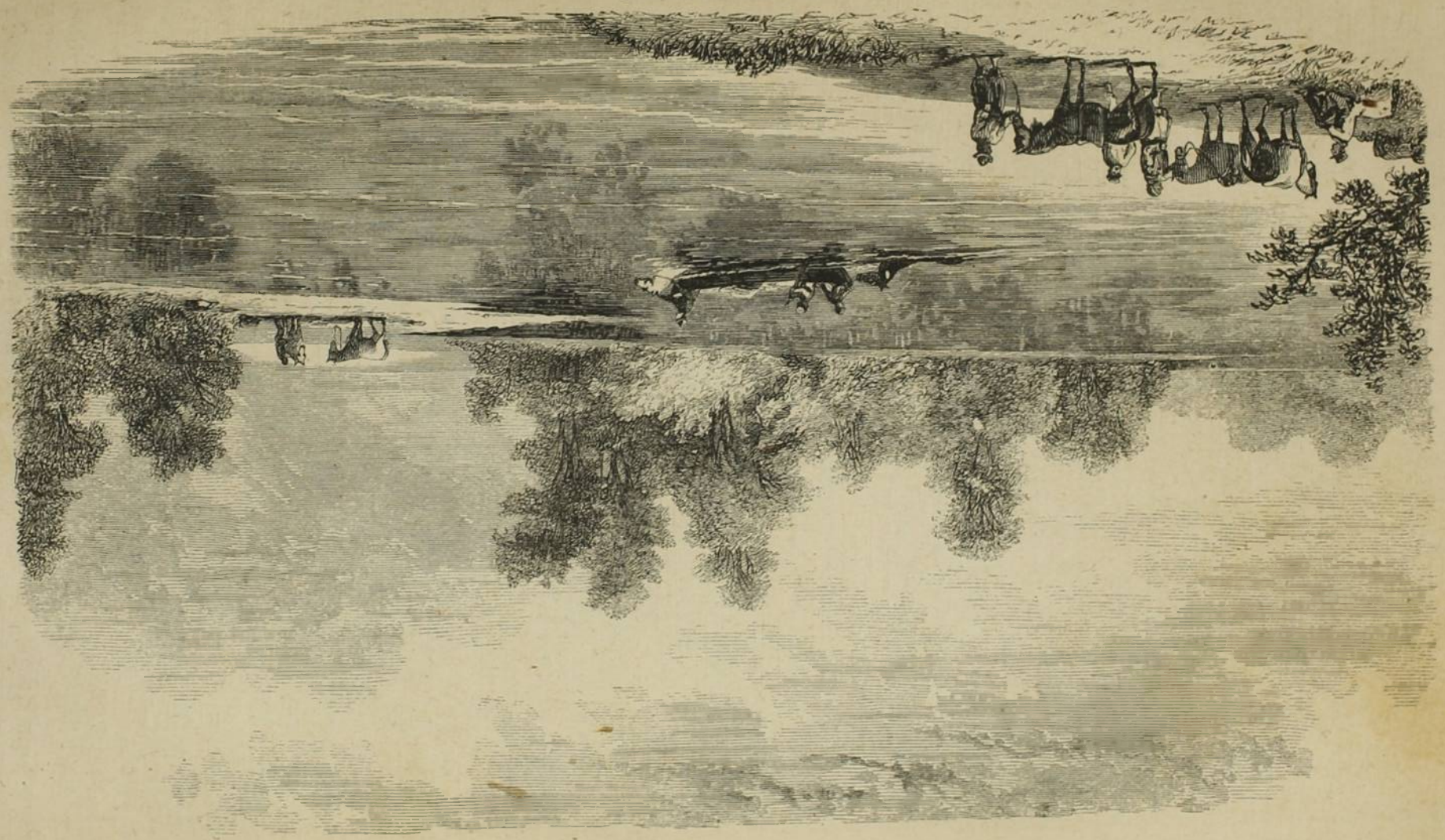
Until the arrival of the American Company there was not, even at Asuncion, an appointed place for making or selling cigars, though many thousands were exported monthly. Individuals who bought for their own use, or merchants requiring them for domestic trade or exportation, ordered them from different country families, and they were always punctually delivered—their shape and size varying according to order.

Twelve miles beyond Doña Clara's we reached the Taquari, a tributary of the Parana, and the dividing line between the partidos San Casmi and Carmen. It was so much swollen by the backing up of the waters of the Parana that we were obliged to cross in canoes; the horses swimming alongside and literally carrying us over by "horse power." After passing this river we came to our resting-place for the night, the "Capilla Carmen," where we were well received by the commandante, Mariano Senturian, at whose house we had been advised to stop.

The country from Villa Rica is generally campo, intersected by several streams and skirted by wooded ridges of rolling lands. The soil of the latter is argillaceous, while that of the plain is a rich dark loam. The estancias are not so numerous as between Asuncion and Villa Rica, the largest being those of the government; but the herds of cattle are superb.

There was no great variety in the articles cultivated. Every where we saw tobacco, corn, mandioca, pumpkins, onions, oranges, and melons. The latter, though small, were of delicious flavor. This poverty in the variety of fruits and vegetables arises only from the extreme indifference of the people, who have no market

CROSSING THE TAGUARI.



for such products, and care little for what we consider the luxuries of the table.

It is almost impossible to name a tropical fruit which, if planted here, does not thrive with the least possible care. Bananas, plantains, and pine-apples are cultivated on a limited scale; but in no country do they mature in greater perfection. So with coffee. I saw it growing in one place only, but it was particularly fine.

Give the Paraguayans maté, beef, and mandioca, and they are satisfied. Their forests yield the first, and the native pastures support their cattle. Shut out, first by the policy of Spain, and again by the tyranny of Francia, from all communication with other lands, they neither know nor desire their luxuries. The climate is deliciously soft; and with the festivals of the Church, and an occasional "dance," to break the monotony of existence, they dream it away, imagining that the true and only Elysium is Paraguay.

We saw a few deer. Among the domestic animals are sheep, but no hogs. The woodlands are probably rich in flora and birds; but traveling almost continuously through a level open country, we saw very few. Jaguars are rarely seen in this part of Paraguay, but infest the forests bordering on the rivers. Among the birds, the most common was the small partridge.

As we approached the Parana the country continued fertile, populous and picturesque; beautifully diversified by plains and wooded ridges. Under beneficent legislation, with such a wealth of soil and climate, surely the happiness of a golden age might here be realized.

In all Paraguay I have not yet met a medical man. At Asuncion, and a few of the towns only, "curanderos" are found. These are men supposed to be skilled in the knowledge and application of the *remedios* drawn from the vegetation of the country. Falconer,* both physician and botanist, says: "Paraguay is enriched by the bounty of nature with so many wholesome plants, roots, gums, woods, and fruits, that whoever is skilled in the knowledge of these things would have no occasion for European druggists to cure any disease." Nearly all families of the country understand the power and use of these remedies.

We made this journey in February, the last summer month, the

* An English Jesuit. When he wrote, all La Plata was called Paraguay, but the Jesuits were particularly acquainted with all the northern and western provinces.

hottest of the year. In the course of each day and night we entered three or four different houses, and yet heard of no sick individuals or families. Malignant fevers are unknown. On several occasions we met with men over eighty, vigorous in mind and body, who assured us they had never experienced a day of indisposition. We generally slept under the projecting roof, and I remember no night that was not deliciously cool—so much so, that my blanket-shawl was always an essential covering.

The barometer and thermometer were both accidentally broken, which I regretted, as I wished to measure the height of Ytapua—now Encarnacion—with Asuncion, and continue meteorological observations. Our register of temperatures up to the 17th, inclusive, gave a maximum of heat, at 3 P.M., of 94°, minimum 86°; and yet, with the wind from the north—for it is only from that quarter that so high a range is produced—this temperature was not oppressive. The position of Carmen, latitude 27° 12′ 30″ S., longitude 56° 14′ 21″ W., was determined by Lieutenant Powell at a subsequent period. In consequence of an accident to the pocket-chronometer before my return to Asuncion, which prevented a comparison and verification of its error and rate with our standard, I was unwilling to assume the results of our work as correct. Lieutenant Powell, who afterward visited the interior of the country, was directed in his returning to take the same route from and after his arrival at Villa Rica—a place satisfactorily determined—and to make all necessary observations at each of the prominent points where they had been previously made, and the geographical positions of which I deemed it important to establish with every degree of accuracy.

The Puebla Carmen is a new place, built after the abandonment of Ytapua, and contains about one thousand inhabitants. Why was Encarnacion deserted? After considerable negotiation with foreign powers, Paraguay opened a port on the Parana. She regretted the concession; but there was only one way of avoiding the stipulations of the treaty and keeping the portals closed. This was by building up a new village twenty-one miles in the interior, and making it the centre of trade for all the neighboring country. President Lopez proved in this instance that if he can not move mountains he can change the position of towns. He who dares look back to Encarnacion will be turned into one of the pillars of the state—a soldier.

Nothing could have been kinder than our reception by Don

Mariano. He added to our obligations by the offer of fresh horses to Ytapua. We started in great spirits, and soon came to the river Yun, a tributary of the Parana, which was crossed in a canoe, the horses as usual carrying it over by swimming alongside. This river is the dividing line between the departments Carmen and Encarnacion, being distant from the former fifteen miles. One mile beyond this we passed over the Boicaja, also a tributary of the Parana. The country from Carmen to Ytapua is rolling, with an argillaceous soil, bearing a little wheat of indifferent quality.

When within a mile of Ytapua we missed one of our party, "El Secretario" of the Paraguayans, the "Colonel" of the younger officers, and, in truth, the captain's clerk. He was a son of the Emerald Isle; one more "skilled in the tongues" than in horsemanship. Mounted on rather a mettlesome steed, with dragoon saddle and holsters, containing a formidable pair of horse-pistols; with feet barely touching the stirrups, lengthened to the last hole, the colonel was, when mounted, a true knight—a scion of the royal O'Neals. From the first elevation we looked back anxiously for our missing companion. A riderless horse was flying over the plains, lashed at every step by holsters and saddle-skirts; while on foot, and in hot pursuit, was the colonel. Judging from his agile movements that the physical frame was unharmed, and knowing that both rider and steed must "bring up" at some neighboring corral, we quietly pursued our way. While hob-nobbing over a glass of caña with the commandante, in walked our friend, a little worn from his exercise under a temperature of 90°, but declaring earnestly that he had only dismounted to arrange the equipments of his steed, when he gave him the slip.

Ytapua was one of the most famous of the Jesuit reductions; but its glory has passed away; that is, the glory of Jesuitic civilization; yet nature is still beautiful. The Parana—already by the accumulated waters of many navigable streams a mighty river, one mile and a quarter wide—rolls on majestically between a bordering of lofty trees. It will probably be found navigable from Ytapua to the ocean for river steamers, for the Jesuits descended to Corrientes from this point in vessels of four and five feet draught. The falls of Apipé, one thousand miles from the capes of La Plata, obstruct, for the first time, its navigation by large vessels; such, at least, is the generally received opinion; but having reason to doubt this fact, I sent the Water Witch to examine those rapids, while I was engaged in prosecuting another

branch of the work. In passing the Paraguayan fort of Itapiru, she was dastardly fired into, and one man killed.

But I am anticipating.

CHAPTER XIII.

Francia.—Religion and the Churches.—Ytapua.—The Commandante and Soldiers.—Navigability of the Parana.—Carmen.—Equipments of Horses.—Mission of San Cosmi.—Estancia San Rafael.—Maté.—Frescoes.—D. Ignacio's Horse.—Capilla San Martin.—The Supper.—Missions Santa Maria and Santa Rosa.—Estancia of Señora Casara.—The Merchant President.—Señor Cabeñas.—Capilla Caapucu.—Señor Vasconcellos.—The Diezmo.—Public Lands.—Señor Bergarran.—Iron Works.—The Waiter.—The Superintendent.—Ibicui.—Mineral Districts.—Products and Exports of Paraguay.—The Surgeon of the Water Witch.—Beauty and Fertility of the Country.—Presidential Election.—No Admittance.—A Motion to make the President Emperor.—The Constitution.—Individual Wealth.—Cotton.—Lists of Exports from Asuncion.

THE ruins of a church and a few dilapidated houses are all that remain of one of the most celebrated of the Parana missions. Francia finished what the immediate successors of the Jesuits spared. The Dictator was no hypocrite in religion. On all occasions he manifested an indifference to its outer observance and contempt for the priests, who, he was repeatedly heard to say, "rather tend to make these people believe in the devil than in God." Even within the memory of living Paraguayans, some of these churches were rich in vessels of precious metals, statuettes of the twelve apostles in solid silver, paintings, and carving. The church of Ytapua was one of the most beautiful of these. A massive foundation, three hundred and twenty feet by eighty, and a few feet of the superstructure, are all that remain of this edifice. It was despoiled, but not demolished, by Francia. In 1846 service was still held within its walls. They were taken down in this year by order of President Lopez, who was told that the condition of the building made it unsafe. But the work of demolition showed its strength; and the President, I was informed, greatly regretted his agency in the destruction of one of the finest Jesuitic monuments of the country. The residences of the Fathers, built of stone and brick, were in excellent preservation, and seemed to defy the ravages of time. One of them was occupied by the commandante, who assured me that it had never, within the memory of living man, been repaired, and yet the wood-work, especially those parts that had not been exposed to the elements,

was perfect; the bamboo slats, laid transversely across the rafters as a support for the tiling, looked untouched by time.

The commandante was hospitable, and celebrated our arrival by making himself gloriously happy with caña. He entertained us with marvelous stories of battles fought and won by Paraguayans; of his own deeds of valor and single-handed combat; all of which impressed us profoundly with the vivacious imagination and talent for military narration of this officer of the republic. Tired, sleepy, and fearing that he might mistake us for the enemy, we retreated at an early hour to our hammocks.

When Bucurelli carried out the instructions of the Count of Aranda, the Jesuits were constructing a church at the "Mission Jesus," near the Pueblo Trinidad, about twenty miles above on the Parana—the highest point on that river to which the Paraguay missions extended. But neither the magnificence of its design nor the beauty of the masonry and wood-work—much of which was completed—could save it from the vandalism of Francia, who ordered it to be destroyed. Some few of these churches—San Cosmi, Santiago, Santa Rosa—were spared, and we visited them in the return route to Asuncion.

On the 22d of February—a day remembered by all Americans, wherever they may be—we left for Carmen, carrying with us, as a souvenir of Ytapua, a bit of the stone of the old church, which seems to be veined with copper. With the exception of one district, and this extending but a few miles, the country was as thickly populated as that immediately around Asuncion. The dwellings were of a better order, and the cultivation very fair. The Parana, unobstructed to the Atlantic, is an outlet for all Eastern Paraguay. I have several times alluded to the determination of the President to concentrate the whole trade of the country at the capital; and if he tells the people of the East that the Parana is not navigable to Corrientes, no charts based upon the most reliable data could convince them that his Excellency's assertion was incorrect. When I told them of the floating palaces carrying millions of freight over our interior water-courses, with a draught of only two or three feet, they looked as if they thought I was entertaining them with a "yarn." The cataract of La Guayra and the rapids of Apipé are regarded by President Lopez only as magnificent fortifications provided by nature for Paraguay, against all outside enemies; more particularly against her neighbors, "Los Portugases." The resources of this district are as unbounded as

those of the West; and the wealth of the Jesuits, derived from their agricultural labors in a small part of it, is the best evidence of its fertility. The soil of the hills between Encarnacion and Carmen is a reddish clay, while that of the flat lands is a black argillaceous loam, resembling alluvial deposit.

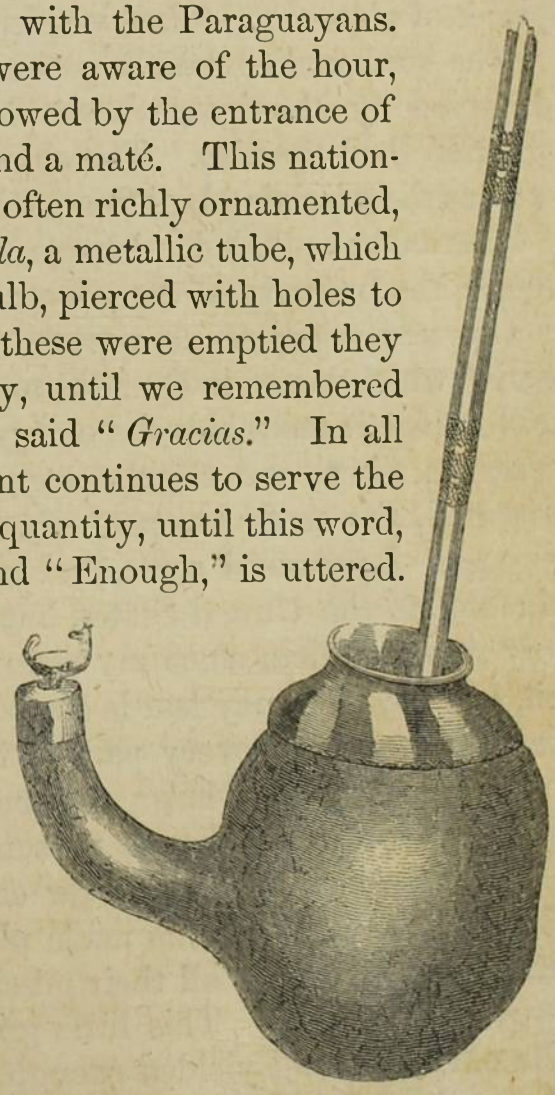
The Paraguayans, like all Spanish Americans, take much pride in the equipments of their horses. The Bolivian officers whom we met in Brazil had presented me with a saddle-covering, made of the skin of the "pareroso" (the sloth), an animal not found in Paraguay. It had apparently excited the admiration of many during this journey. On leaving Carmen, I gave it to Don Mariano, as a souvenir of our party. My offering was received with unaffected pleasure, and we parted with many expressions on his part of esteem for us all.

As I had determined to return to Asuncion by a more southern route, we started for San Cosmi, another of the abandoned missions. It is but twelve miles from Carmen, and in that distance we passed in canoes over two small tributaries of the Parana, the Taquari, and the Aguape. This mode of crossing was troublesome, for it always involved the unloading and loading of the cargaro mules. This mission, according to our observations, is in latitude 27° 19′ 9″ south, and longitude 56° 24′ 48″; variation 7° 35′ east. It is within half a mile of the Parana, of which and the neighboring country it commands an extensive view. The church and other buildings were in excellent preservation; but the jefe was absent, and the next dignitary, "el secretario," would not take the mighty responsibility of opening the sacred edifice, so we were obliged to content ourselves with admiring the exterior. It was three hundred feet by seventy; constructed of a red sandstone of fine grain, not unlike that so much used in our country at present, but of a lighter hue. The front entrance was supported by octagonal columns of the same stone, twenty feet in length, two in diameter, each of one piece, and beautifully cut. "El secretario" told us that the columns and flagging of the interior were of this material, which had been taken from a neighboring quarry on the Parana.

Leaving San Cosmi the following morning, we stopped, after a ride of five hours, for siesta, at the Estancia San Rafael. Between the two missions, distant from each other thirty miles, we crossed one stream, the Arroyo Atingi, nine miles east of Santiago. The first part of the day's travel was made through a campo,

but before reaching the mission we entered a rolling country. On one of its wooded elevations, twenty-seven miles from the Parana, stood the buildings of Santiago. Riding into a large court, formed by the church and adjoining houses, we were most kindly received by the jefe, Señor Don Francisco Ignacio Silvero, who ushered us into a clean, comfortable dining-room, where maté and cigars were soon followed by an excellent supper. I was much impressed by the extreme neatness of the jefe's dwelling, and the simple manners, but perfect ease and good-breeding, of his wife and daughter. After supper we retired to sleeping-rooms, where were snowy beds and hammocks—another evidence of the comfort and refinement of this home, not less refreshing than astonishing, when we reflected that we were in a remote corner of an isolated country.

Early rising is a fixed habit with the Paraguayans. The next morning, before we were aware of the hour, there was a tap at the door, followed by the entrance of a little negro holding in each hand a maté. This national beverage is served in a gourd, often richly ornamented, and is imbibed through a *bombilla*, a metallic tube, which at the bottom expands into a bulb, pierced with holes to act as a strainer. As often as these were emptied they were replenished by the darkey, until we remembered the custom of the country, and said "*Gracias.*" In all well-regulated houses the servant continues to serve the national beverage, regardless of quantity, until this word, which means both "Thanks" and "Enough," is uttered.



MATÉ AND BOMBILLA.

Refreshed by this tea, and well supplied with fine cigars, the breakfast of the early morning was made. Accompanied by our host, we went to visit the church, a grand old building three hundred feet long and in excellent preservation, so far as time and the elements had worked; but cupidity and vandalism had despoiled it of its ornaments. The ceilings were elaborately frescoed, and there was a vast deal of gilding, statuary, and carving in wood; but, mutilated and defaced as they were, only

the eye of an artist or connoisseur could have traced any beauty, in subject or outlines. It must be remembered that I had neither written record nor garrulous guide to aid my eye or imagination; and, having little knowledge of art, I will not mislead by attempt at description. This was the second church erected by the Jesuits in Paraguay, the first being that of San Ignacio. It must, therefore, have stood over two centuries, and yet its solid stone walls looked as if they might battle with time for a thousand years to come. Enough remained to fill the most indifferent observer with wonder, in remembering that a half-dozen Jesuits and their Indian neophytes were the architects, builders, sculptors, and painters of this wilderness. The people of the country dwell much upon the wealth and beauty of these churches, even to the time of "*El Defunto;*" and in the course of this journey we saw frequently pieces of plate that looked suspiciously like "sacred vessels."

The surrounding buildings were in good order, and generally occupied by Meztizos, whose physiognomies were much more Guarani than Spanish. The church, its columns and flagging, as well as the adjoining buildings, were of the red sandstone to which I have before alluded. In one of the latter were several hand-looms, the property of the government, for weaving cotton cloth.

Our next visit was to a grove of "yerba," the "*Ilex Paraguayensis*," which is not indigenous to this part of Paraguay. In size and foliage it resembles the orange-tree; its flowers grow in clusters, are white, and closely resemble those of our elder. When matured, the seeds are perfectly black, and very like grains of pepper. I procured some, and sent them, carefully sealed in a tin box, to the United States, but have never been able to learn any thing of them since my return. The yerba is found in Brazil, but the Paraguay leaf is considered greatly superior, and is so eagerly sought in every part of Spanish America that it might become a source of large revenue both to the government and people, were it not that at present the trade is monopolized by the former, and the supply for export consequently very much diminished. The Jesuits made plantations of this tree, had several varieties of it at all their missions, and found the quality improved by culture. This little grove had been propagated from the old stock, and yielded enough for the wants of the few families at the mission.

We made the usual observations, which, for reasons before given, were imperfect; but this was among the places subsequent-



SUPPER AT SAN MARTIN.

ly determined by Lieutenant Powell, and found to be in latitude 27° 7′ 39″ south, longitude 56° 50′ 21″ west, variation 7° 4′ east. The position of Santiago is perhaps not so attractive as that of either San Cosmi or Ytapua; but from the better condition of the church and other buildings, and from the fine cultivation of the surrounding country, it was far more interesting. I thought I could see the influence of the jefe's example, and that presented by the order of his household, upon the whole community.

Wheat was growing in this neighborhood, but the grain was not well matured. The morning's work was followed by an excellent dinner; and when about to continue our journey, Don Ignacio asked my acceptance of a horse: I begged him not to add to my obligations; but he said the animal should be sent to Asuncion, where he would himself again see us, as he was one of the representatives of the new Congress to assemble in March for the election of President. He was true to his word. Only a few days had elapsed after our arrival at the capital, when one of the finest horses I had yet seen in Paraguay was brought to my quarters, with the compliments of Don Ignacio.

At sunset we reached the "Capilla San Martin," our resting-place for the night, after a ride of eleven miles through a country sparsely wooded, but cultivated and populous. The soil is a reddish clay. The occupant of the one house at this place met all the demands of hospitality by giving us the best his larder afforded. This was a supper of stewed beef served in a large earthen dish, which was placed in the centre of a small round table, without knives, forks, or plates. But armed, as each was, with a wooden spoon, and aided by good appetites, and a little instruction from our host, Don Antonio, we made an excellent supper. At its conclusion, a negro boy, who had stood during the repast like a statue behind the chair of his master, suddenly clasped his hands, and with the gravity of a bishop returned thanks in a clear, distinct voice. Cigars followed the "grace," and soon after we retired to our hammocks, slung up as usual outside of the house.

In the morning, before day had fairly dawned, I was awakened by voices near me. Some ten or twelve peons, or laborers of the estancia, were standing before the entrance of the dwelling. One of them knocked upon the door, giving the salutation "*Ave Maria.*"—"*Sin pecado concebida,*" said Don Antonio solemnly, as he stepped out to give them a blessing, in Guarani; after which they

dispersed. I afterward learned that this was the daily custom of many estancieros of the neighborhood.

We were yet within the limits of the Missions. The old churches with their surroundings, and these domestic religious observances, are the only traces of an order that dominated over this region for a century and a half.

Starting at an early hour from the Capilla San Martin, we traveled for twenty-seven miles through a fine, fertile, populous country, diversified by rolling lands and plains. On the route we visited two other abandoned missions, Santa Maria and Santa Rosa. The church of the first was of the same material and dimensions as those we had already seen; the frescoes, carving, and gilding were even more elaborate. A few pictures still hung around the sanctuary, and what remained of the wood-work was extremely beautiful. The exquisite color and fine texture of the Paraguay woods make them invaluable for such a purpose. Santa Rosa was also constructed of fine sandstone, and differed only in size from those already described, being rather smaller. It was in such admirable condition that I regretted the loss of our daguerreotype instruments, which would have enabled me to present some representations of its frescoes. Ulloa tells us that the churches of these Paraguayan missions equaled the finest ecclesiastical structures in Peru; and other writers give us the impression that those of Peru were unsurpassed by many of the finest in Spain.

We met with a hospitable reception at the estancia of Señora Maria Petronella Casara, in the Partido of San Juan, where we stopped for the night. The position of her dwelling, on a wooded hill, was beautiful, and the improvements within and around it were superior to any we had yet seen. There were touches of foreign taste and comfort, which were explained when Señora Maria informed me that she was the widow of a "Frenchman," as all foreigners are called in Paraguay, the people troubling themselves little with geographical science. We were repeatedly asked if we were Frenchmen, and were regarded doubtfully when we answered in the negative. It is whispered that President Lopez is both a sleeping and wide-awake partner in a "Paraguay House" at Paris, and that the periodical arrival of certain gay fabrics and fashions serves to keep alive this impression of French ascendency among the female portion of the population. Señora Maria gave us an excellent supper, but was much annoyed at not receiving more assistance in its preparation from her two fair daughters,

who evidently found the society of the young officers of my party more agreeable than household duties. The next morning, after being served, as usual, with maté, we said "*adios*" to the ladies, and continued our journey. For twelve miles this lay through an unbroken plain, without apparently any unoccupied spaces, so numerous were estancias and farms. Near the Capilla San Miguel we crossed the Tibiquari, which at low water has a depth of from three to four feet. This river forms the northern and western boundary of the "Missions."

Six miles beyond we stopped for dinner and siesta at the house of a rich estanciero, Señor Cabenas, where we met with unusual luxury. Dinner was served on massive plate; water-goblets and salvers were also of pure silver. All other appointments of this establishment, though simple, were exceedingly comfortable. In Paraguay the siesta follows dinner as naturally as day is succeeded by night. So, after cigars and a chat with our host, who was a man of intelligence and polished manners, we were shown to sleeping apartments, where the extreme neatness of beds and hammocks invited repose.

Our next resting-place for the night was the Capilla Caapucu, distant from the estancia of Señor Cabenas nine miles. Since leaving the Tibiquari we had found the lands fertile. Mountains, forests, and plains, all brilliant with verdure, made the aspect of the country impressively beautiful.

In Paraguay foreigners are a "sight," and when we reached Caapucu all occupants of the surrounding houses collected to see us dismount. We were well received, but I thought the poor jefe looked embarrassed at the arrival of so large a party. However, relief was at hand. A gentleman rode up on a fine spirited horse, and, from a whispered conversation, with many glances at us, I "guessed" that we were the subject of a talk. The horseman dismounted, came forward, and invited us cordially to return with him to his estancia, which he represented as being near. We were very tired; but presuming that this arrangement was made to relieve the jefe, who found it inconvenient to accommodate so many persons, we followed Señor Vasconcellos. His dwelling, which I had supposed within a short distance of the Capilla, gave us a ride of six miles; but the jovial conversation of our new friend, the courteous reception given us by his wife and daughter, and a bountiful supper, fully compensated for the trouble. He was a Portuguese, who, thirty years before, had stepped over from

Brazil into Paraguay, had married a daughter of the republic, becoming one of its citizens, and the father of a large family. It was novel and refreshing to meet a man of intelligence who seemed neither disturbed by the ghost of Francia, nor the living power of Lopez, and who could converse freely and with spirit upon the state of the country. The absence of statistics, and the timid reserve of the inhabitants in alluding to the government, made it very difficult to arrive at a fair estimate of the condition and resources of Paraguay. The people always spoke with hesitation and in a low voice, as if they feared that the walls had ears or we were spies.

Señor Vasconcellos was surrounded by much to make him happy. It is true his lands were the property of the state, but he had fine herds of cattle, a garden, a spacious stone house, pleasant family circle, and a daughter happily married, and residing upon an adjoining estancia.

Bad weather detained us three days, and gave me the opportunity of visiting his son-in-law, whose house and grounds were in better condition than many we had seen, and showed, I thought, the influence and energy of the father-in-law.

While strolling over his land I observed indications of iron, and said to him, "I think you have a vein of iron ore on your estancia?"

He replied gravely, "My dear sir, it is the last thing I should care to find; for my land is public domain, and if ore is discovered I must be forced to relinquish it to the government, and make another home."

In the course of our walk, I saw a magnificent copaiba; the ground beneath was covered with its seeds, a few of which I collected and sent to the United States. From a small tree in the yard of Señor Vasconcellos I also gathered seeds of the huruĉu, which were likewise sent home. The latter yield a fine red paint, greatly sought by the Indians to adorn their bodies, and occasionally used in Paraguay for painting the interior wood-work of houses. The natives extract the color by the very simple process of soaking the seeds for some days in glue water. I experimented by leaving them in a glass of pure water for twenty-four hours, when, finding the coloring matter well extracted, I poured the whole through a piece of gauze; the sediment remained, a fine powder of brilliant hue.

Though two dollars the square league is the fixed price for the

rent of these lands the *diezmo* is a heavy impost. It is, in fact, *half of the "royal fifth."* Among the last and very few good decrees of Francia was one abolishing this tax, but it was imposed anew by Lopez. A tenth part of the increase of the herds I saw upon these two estancias would be no inconsiderable rent, and the revenue of the government from this source, though not made known, must be very considerable, for the tenth of every product, even that of vegetables and fowls, is exacted. As the actual collection and sale of the diezmo in kind would be a troublesome business, each partido is farmed out to the highest bidder, who again bargains with the producer, or estanciero, for his portion, or its equivalent. The small farmers rarely have money, therefore their produce is sold at the nearest village.

The people, as might be expected under such a system, evade the law by the most amusing and ingenious expedients, such as planting nine rows of mandioca, and declaring that there *can be no tenth.* If government would pursue a more enlightened policy, sell the public lands, reduce the export duties, abolish the diezmo, the monopolies in timber, yerba, caoutchouc, etc., the enterprise of the Paraguayans would be awakened by the stimulus of trade, and the public revenue would probably greatly exceed its present amount. There might be, even for Paraguay, a "manifest destiny." Lopez has the ability, if he had the will, to imitate Urquiza, and put the ball in motion.

The public lands embrace three fourths of the whole country, and there is a governmental control even over the actual products of each partido. The commander of a district may order one tenant to cultivate tobacco, another corn, making them all in fact but laborers of the state.

I parted with regret from our new friends, but with the expectation of meeting Señor Vasconcellos soon at Asuncion, as he had been chosen a member of the ensuing Congress.

Our road, for twenty miles, lay through a fine rolling country, and at noon we reached the Estancia Bergarran. I proposed stopping at this place for dinner and siesta. As we approached the dwelling, which was placed upon a hill and embowered by magnificent trees, a venerable old man, who was seated before the entrance, came forward, and with a dignified but courteous manner, said, "*Pasa adelante, Señores.*" How pleasantly that greeting of Señor Bergarran sounded to our tired party! and yet literally it meant but "Walk in, sirs."

Books are rarely numbered among the luxuries or resources of Paraguayans; I was therefore somewhat astonished to find that our host possessed a small but admirable collection. The title of a little Spanish pamphlet attracted my attention. It was the "Articles of the Confederation of the Thirteen Original States of North America: December 4th, 1776." Señor Bergarran has been a prominent man in Paraguay, and is said to be still very popular with a large party, who, after the death of Francia, wished to place him at the head of the government. He was very cautious in alluding to the present condition of his country, but was evidently a man of more than ordinary intelligence.

Our next resting-place was to be at the Government Iron Works, the buildings of which are at the foot of the Sierra Mbonaypey, upon the banks of a small river navigable for boats to the Tibiquari. The mountains were covered from base to summit with forests of gigantic trees, and the superintendent of the works—a Swede, Señor Don Augusto Lidiedat—told me that they teemed with a precious vegetation, rare medicinal plants, gums, resins, dye-stuffs, and woods valued for all mechanical or ornamental purposes. He had made a collection of plants, studied their properties, and now used them exclusively and successfully in medical practice among the workmen of the mines. With all the eagerness and the indomitable perseverance that characterized the Spanish conquerors in their search for gold, and all the energy of the Jesuits in developing the resources of Paraguay, it seems inexplicable that they should have totally overlooked its mountain ranges. No scientific explorations have yet been made in these districts, and up to this time iron ore and zinc are the only discoveries.* Like the ranges of Northwestern Brazil, they will probably be found rich in a variety of minerals.

The ore of Caapucu yields seventy-four per cent.; that of San Miguel forty-eight. The latter, though smaller in quantity, is said to be unequaled in quality. The superintendent gave me specimens of these ores, also some of zinc; and though the lands yielding the last have been but partially examined, they indicate an abundant supply. Properly worked by private enterprise, the mines already opened would probably supply not only Paraguay, but the lower states of La Plata. All works of this kind must necessarily be initiated by foreigners; but their labors are not

* And these have been pronounced, by former writers on Paraguay, as not existing within its territory.

properly appreciated or rewarded. The machinery for this place was commenced by an Englishman, who died before its completion; and the present superintendent, though a man of ability and energy, was, before we left the country, coolly informed that his services were no longer needed. Don Augusto made some additions to our botanic collections, and seemed delighted to have an opportunity of unreserved conversation with foreigners, who could appreciate and understand his labors.

My attention was attracted by the appearance of a man who waited on the table during dinner; his dress was more that of a country gentleman than a servant, and his countenance peculiarly sad and subdued. I found my eyes continually wandering toward this individual, whose manner disquieted me, for he moved about heavily, and as if his task was a weary one.

After dinner the superintendent asked me if I had observed the waiter.

"Yes. What is he? Who is he?"

"The richest man in Eastern Paraguay. He has a very large, well-stocked estancia."

"And yet is here as a servant?"

"Yes; he was guilty of the ungallant act of whipping a woman, and the President has degraded him to be a servant at the Iron Works. He will, at last, liberate himself only by paying a large sum, or its equivalent in cattle."

So much for the rights of women and the summary administration of the law.

The next morning, after a cup of coffee—an unusual luxury in Paraguay—we continued our journey. The rain poured in torrents; and, thoroughly drenched, we arrived at Ibicui, unfortunately at the hour of siesta. We called first at the house of the juez. He was asleep, and could not be disturbed. We rode on to the "Padre's;" and as I told the vaqueano that shelter must be found, he assumed the great responsibility of having the reverend gentleman awakened, and we were shown by his orders to a vacant house. The horses were turned into the plaza to graze; and the vaqueano, who went in search of supplies, returned followed by a woman who undertook to cook a supper of asado and pucharo. Then slinging up hammocks, or settling ourselves upon the brick floor, with saddles and ponchos for bedding, we prepared to spend the night. Ibicui was one of the few places at which we met with inhospitable treatment; and this I attributed to our un-

fortunate arrival at the time of siesta. One might arouse a Paraguayan at any hour of the night, and find him good-natured; but at the hour of siesta, never.

The next morning we left this village, the position of which, at the base of the Sierra Tatuqua, a truncated cone, was very beautiful. Traveling through a fine campo, watered by the small stream Cañavaz, we reached the house of Señora Maria Patrone Aldena, where we breakfasted. From this place our road lay through a narrow valley, hemmed in on either side by high mountains, their low ridges covered with the adobe houses, or thatched huts, of a comparatively dense population. Passing the Pueblo Paraguayri—the nearest approach we had yet made to our outward-bound route—we arrived for the night at a government posta, and with difficulty obtained provision for man or beast. Our next and last day's journey to Asuncion, 45 miles, was through a fertile, populous, rolling country, with magnificent forests. The soil is sandy.

I had now, by a circuitous route, traveled 600 miles, through what was represented to me as the most populous districts of Paraguay, and found them every where abounding in natural resources. Science has made no progressive innovations in the processes of culture. The agricultural and mechanical implements are still of the rudest description; the plows are of wood; cotton is spun and woven by hand-looms; sugar-cane is pressed in wooden mills; and cigars are manufactured by families at their own dwellings. The actual products are undoubtedly meagre, when we consider the adaptation of both soil and climate to agriculture; and yet the aggregate amount, even under the present primitive system, is considerable. The indigenous vegetation is extraordinarily prolific. Forests and plains teem with medical and edible plants, gums, resins, and dye-stuffs. Many woods possess the value of metals, in their power to resist the action of water and atmosphere. The fibrous tissues of several abundant species of aloe furnish a new raw material for manufacturing enterprise. The yerba, as the experiments of the Jesuits proved, can be grown in quantities to meet any demand. I might be suspected of exaggeration if I should enumerate the many articles, such as caoutchouc, wax, palm oil, indigo, cotton, rice, sugar, and coffee, that could be added as staple commodities to those named, as legitimately recognized in the trade of this country. Indigo, though cultivated to a most limited extent, might become one of

the most valuable articles of export. There are several varieties growing wild, and their quality, so far as tested, seems little inferior to the cultivated plant. According to Azara, silk could be produced, as the mulberry is indigenous.

Before the Revolution the exports of Paraguay to Buenos Ayres and the interior provinces of La Plata reached nearly a million and a half of dollars. Among them were eight million pounds of yerba and a million pounds of tobacco. After the monopoly of the sale of tobacco by the "Regia" of Spain, the supply for the mother country fell from 15,000 to 5000 quintals. I have made no allusion to the culture of the sugar-cane. It grows readily, but receives little attention; a few rows yield molasses enough for home consumption and a small quantity for exportation. Though "yerba" is found in the humblest hut, the people generally prefer "*maté amargo*" (bitter maté).

Though our journey was made during the last summer month, February, we found it warm, but not oppressive. The nights were uniformly pleasantly cool, and I avoided the heat of a meridional sun by stopping for siesta and dinner. The temperature ranged from 76° to 90°—not often above the first. These extremes are produced more decidedly by the shifting of the wind than by a change of seasons; those from the south causing a rapid fall in the thermometer, while those from the equatorial regions produce the reverse effect and the greatest degree of heat. I often slept in the open air, but experienced no bad effects. The usual sleeping-place of both officers and crew of the Water Witch was on deck, under an awning, yet we had but a few cases of slight chills, which yielded readily to the usual medical treatment, and very often were escaped altogether by avoiding unnecessary exposure and too great indulgence in fruit. In referring to my journal for the months of March and April, my attention is particularly attracted by the very great range of the thermometer for this latitude—25° south. It says:

"*March* 31*st.* 4 P.M. Wind north; thermometer 80°; cool and pleasant. *April 4th.* Yesterday and to-day, at 7 A.M., thermometer 63°; wind northeast; weather clear. *April 7th.* Thermometer 93°; wind northeast; weather clear."

Such changes are sensibly felt, and would doubtless produce sickness were not the variations from a high to a low temperature of very short continuance.

In no part of Paraguay that I visited, not even at Asuncion,

could a physician find full occupation or obtain a maintenance. When at the capital, the surgeon of the Water Witch was occasionally sent for; but he made no charge, not even the established one of twelve and a half cents the visit. So unusual is such attendance that, when he gave a prescription, he was frequently questioned by the patient or a member of the family as to the price of the medicine.

There is little individual wealth. The property of the richest man would scarcely bring $50,000. But there are few or none positively needy; for Nature, with wondrous bounty, supplies the necessities of her children almost without exertion, and the comforts essential to health under the seasonal vicissitudes of other latitudes are here unnecessary. The principal exports at present are yerba, tobacco, oranges, mandioca (converted into starch and sweetmeats), ground-nuts, molasses, caña, and rum. It will be observed that cotton is not enumerated, and yet Ulloa says, in speaking of the resources of Paraguay: "Cotton contributes considerably to their riches, growing here in such quantities that every little village gathers of it annually above two thousand arobas, and the industrious are very ingenious in weaving it into stuffs for exportation." Both climate and soil are admirably adapted to its growth; but the low rate at which merchants are enabled profitably to introduce the foreign manufactured article, which now, in value, exceeds the aggregate amount of all other importations, has caused the abandonment of its culture. The retail price of domestic cottons, previously to the opening of the rivers, varied, according to its quality, from fifty cents to one dollar and fifty cents per yard. Now the foreign article sells from $6\frac{1}{4}$ to 20 cents, and the raw product, in very small quantities, for $12\frac{1}{2}$ cents the pound, *in the seed*. It is spun with the distaff, woven in hand-looms, worked into embroidered skirts and house-linen, which are sold abroad only as specimens of Paraguayan handiwork.

I can convey no faithful impression of the beauty of the face of the country. It presents throughout, from river to river, the most varied physical features; fine alternations of mountains, forests, and plains. The lofty Mbenaypey, crowned by primeval forests, and the Ytagua with its truncated cone, though but hillocks compared with the majestic eminences of the Andean range, are imposing objects in the mountain system. Through whole districts the sierras are covered by forests of gigantic trees, and slope by rounded wooded hills to the broad sunlit plains, which

were every where brilliant with verdure, and intersected by perennial streams. The hill-sides were enlivened by the habitations of a numerous population, and the plains were covered by herds and flocks, which, with the approach of night, could be seen seeking the protection of corrals that dotted the campos. We saw no sterile wastes. The whole land seemed to be enriched by the vegetable tribes of tropical and temperate zones. The air was laden at times with the rich odors of orange blossoms and aromatic shrubs; and yet the climate there, as in every part of the basin of La Plata that I visited, is free from the humidity and excessive heat, which, in other sections of this continent, exhaust the powers of man, or increase those of nature beyond his control. All that fine country is occupied by a people simple, kind, and hospitable. Thefts are not unfrequent, but a higher degree of crime is rare. The administration of President Lopez is, so far as I could learn, unstained by bloodshed. Though the Paraguayans groaned for a quarter of a century under the sanguinary tyranny of Francia, they have been saved from the demoralizing civil contests that have almost depopulated other states of La Plata.

But let not this beauty or fertility tempt foreigners to enter Paraguay for permanent occupation without the protection of treaties. The government owns three fourths of the land, and has numerous estancias; yet when beef is required for the army or public laborers, it not unfrequently draws on the stock of a private estate, allowing the owner half the value of each hide, for which he must receive, as payment, one third in paper* money, one third in cotton goods, and the remainder in silver. Store-houses are also established in every district. These are another source of public revenue; but they interfere at the same time with individual rights. The commandantes of partidos are but the stewards or agents of the principal merchant, the sub-venders of government stock in cattle and goods.

The period of the presidential election was approaching (the 4th of March, 1854), but among the members of the new Congress I missed our hospitable friend Señor Vasconcellos. He is, I presume, too independent in his views to please the party in power, and upon second thoughts was permitted to stay at home. I was anxious to be present at the sittings of the National Legislature, but to my inquiry, "Will strangers be admitted?" I received only a mysterious shrug of the shoulders, and a "*No se, Señor*,"

* Equivalent to specie.

(I don't know, sir). I intended to ask the President, but it was intimated to me that the request would not be acceptable, as none of the citizens were allowed to enter. His Excellency presided in person, and read a well-written message, afterward published, which gave, or professed to give, a minute history of the country since the last Congress in 1849. He represented in strong language its prosperity, which, with consummate tact, he attributed not so much to the ability of the executive as to the wisdom of the honorable Representatives. They had not met to legislate. His Excellency relieves them of that responsibility. So, dutifully giving their votes without a dissenting voice, after a sitting of three days they adjourned *sine die*.

One member had moved a resolution to make the President Emperor, with the honor hereditary in his family. This he wisely declined. In grasping the shadow he might have lost the reality. He is *de facto* Emperor, and the succession is probably secured to his son. The struggles of the Revolution are perhaps not forgotten, and imperial or royal titles might alarm even the simple Paraguayans.

I asked the President, on one occasion, if he could furnish me with a copy of their constitution, alleging, as a reason for the request, my ignorance of the existence of any such state paper, and my desire to become acquainted with the fundamental law on which their government was based. With some hesitation, he replied, "The constitution is not complete; it is now under revision." I had before made attempts to procure a copy, but without success; indeed, all my efforts to obtain information as to the state of the country were met by a timid hesitancy. I really believe that the habit of unquestioning submission is so fixed that few know themselves how they are governed. Still without political aspirations, as in the time of Francia, they humbly, and seemingly with confidence, confer upon the President the administration of all political affairs, a power the present incumbent is as prompt in taking upon himself as he is unscrupulous in its exercise. "Bandos" are issued as occasions call for them, having a retrospective as well as prospective bearing.

The following table gives the exports from Asuncion during the year 1854:

Yerba	85,676 arobas.	$282,489
Tobacco	103,868 "	148,164
Cigars	5,264 thousand.	12,568
Timber	30,313 varas.	49,050
Raw hides	38,957 pesadas.	156,287
Tanned hides	15,566 hides.	66,650
Horse-hair	3,205 arobas.	9,833
Tan-bark	15,920 "	2,719
Starch	23,325 "	10,596
Oranges	266,893 almudas.	11,288
Sweetmeats	29,588 arobas.	19,086
Molasses	30,668 asumbres.	1,279
Sugar	7 arobas.	20
Sugar-cane	35,600 canes.	53
Rum	12,534 frascas.	3,168
Maize (corn)	29,992 almudas.	597
Rice	54 arobas.	17
Beans	3,394 "	984
Meal (mandioca).	706 "	179
Ground-nuts	6,264 "	1,164
Algarrobilla	775 "	96
Paddles	196 dozens.	472
Bamboos	3,724	235
Lime	200 fanegas (= 12 almudas).	500
Earthenware		63
Total amount of exports in 1854...		$777,557
" " " 1853...		691,932
" " " 1852...		474,499
" " " 1851...		341,380

Number of vessels that arrived in Asuncion during the year 1854 was 160, with about 8000 tons; of which 2 were British, 31 Paraguayan, 116 Argentine, and 11 Oriental.

The export duty is 10 per cent. on almost every article, excepting starch, which pays 6 per cent.

Of the exports of 1854, 82,882 arobas of yerba, 2074 pesadas of raw hides, 52,670 varas of timber, and 311 arobas of horse-hair, paid no duty, being exported or sold by the government.

The value of these articles is about $300,000, leaving only about $477,800 worth of produce exported by the trade, making a balance against the market of $222,500, assuming $700,000 as the actual value of the imports.

CHAPTER XIV.

Expedition under Geronimo Metorras.--Colonel Arrias.—Murillo and Lapa.—Colonel Ariadne Cornejo.—Don Pablo Soria.—Steamer Pilcomayo.—Lieutenant Powell instructed to enter the Interior of Paraguay.—Want of Game and Fish.—Force of the Current.—Tobas Indians.—Nacurutu.—Palms.—Rio Saco.—De loi Carui.—Visit to the Toldo—Paso da Lurbi.—River ascended one hundred and twenty Miles.—Channel.—Descending a Cascade.—A Hunt with Dr. Carter.—Lost.—Signals.—The Howitzer replies.—Safe Return.—Descending the River.—Mr. Hickman.—Letter from Mr. Dana.

Our next field of operation was the Vermejo River. Even up to the last quarter of the eighteenth century the spirit of enterprise which distinguished the early Spanish settlers was not dissipated; and the navigation of the Vermejo—supposed to offer a communication between the eastern and western borders of the viceregal governments of Peru and La Plata—became a subject of absorbing interest to many of the most intelligent of the Spanish colonists.

Señor Don Geronimo Metorras, Governor of Tucuman, which then embraced a large portion of the territory now known as the

Argentine Confederation, was the last and most successful explorer by land in that part of the Chaco through which the Vermejo flows. His object was to establish, if possible, a friendly understanding with the numerous Indians living upon or frequenting its borders, from Salta to Corrientes, and thence, by the Parana, to open a communication between the former town and Buenos Ayres.

In 1774 he began this exploration, escorted by one hundred and ninety-six Indians, under the command of Don Francisco Gabino Arrias, a colonel of the army. He followed the right bank of the river for two hundred and forty leagues; received no annoyance from the savages, but was induced by a council of his escort to abandon the further prosecution of the enterprise when he was, according to his own estimate, within sixty leagues of Corrientes. This success inspired him with confidence in the practicability of forming new reductions, and opening a safe passage through the Chaco from east to west. He died when his hopes were most buoyant. His successor, Colonel Arrias—a man of great force of character, and fully imbued with that spirit of enterprise which had distinguished his predecessor—continued the work, and the following year formed two "reductions" among the Tobas and Macobi tribes; one of these at the "Lake of Pearls," and the other at Cangayé, both in the vicinity of the river. In an incredibly short time several thousand Indians were assembled at those places, under the "banner of the cross and the tuition of the church."

In 1778 these successes were followed up by two Franciscan friars, Murillo and Lapa, who, in a canoe, and accompanied by only four men, floated down the Vermejo from the junction of the Senta to the new reductions. This exploration was continued in 1781 by Colonel Arrias, who, with a large escort, in a number of canoes, descended throughout the remainder of the river to its junction with the Paraguay, and thence to Corrientes. Journals of these expeditions were kept, and transmitted to the Viceroy of Buenos Ayres, who carefully buried them. It was in vain that Arrias urged the opening of this river communication through the Chaco. His entreaties were disregarded; but so impressed was he with its importance, that before his death he enjoined upon his son to carry out the work in which he had so zealously labored.

These efforts were followed by several others for civilizing, or

rather subjugating the Indians, but no farther attempt was made to verify the navigability of the Vermejo until 1790, when Colonel Adriane Cornejo, a citizen of Salta, accompanied by thirty persons, descended in a boat from the junction of the Senta to its mouth, a distance, according to his own estimate, which is probably exaggerated, of four hundred leagues. The account of this descent, accomplished in fifty-five days, during the months of July and August, is more authentic and detailed than that of any that preceded or followed. The navigation was reported as practicable throughout, and the Indians as having exhibited no hostile spirit.

No farther attempt was made under the colonial government to open this river. The reductions upon its borders were abandoned, though, as may be well understood, the civilization of the savages and the addition of their territory to the viceregal governments were measures freighted with honor and profit to Spain.

In 1826, and at the season before chosen by Cornejo—July and August—Don Pablo Soria, the agent of an association in Buenos Ayres, set out in a boat fifty-two feet long and of two feet draught. He descended the Vermejo in fifty-seven days, from Senta to its junction with the Paraguay, where he was entrapped by the soldiers of the opposite guardia. His papers were taken from him, and he was sent a prisoner to Asuncion, where he was detained five years by Francia. His journal, which had been kept with great care, was never returned to him; and the only record known of it is a narrative and map, drawn from memory, five years later, when the commander, having been liberated, returned to Buenos Ayres. He describes the descent as having been attended with no obstacles or difficulties except such as arose from the hostilities of the Indians.

Such had been the expeditions down the Vermejo when we made the attempt to ascend it. The accounts given of them, though vague and unsatisfactory as to the peculiar characteristics of the river, agreed somewhat in representing the current as "*muy manso*" (very gentle). Nothing is said as to the means used to test its velocity, and it is easy to understand the origin and continuance of this error. Those parties only floated down, and, dreading or actually pursued by hostile Indians, we can imagine their anxiety to move a little faster. The current was only too sluggish for their impatience.

So soon as the necessary arrangements could be made, after the arrival of the Water Witch from Montevideo, I went on board the

Pilcomayo, and on the 18th May, 1854, started for the Vermejo, accompanied by the following officers: Acting Lieutenant G. P. Welsh, Acting Master W. H. Murdaugh, Passed Midshipman E. W. Henry, Assistant Surgeon Robert Carter, Third Assistant Engineer Stump, and a crew of eighteen men.

The boat, built of the cedar of Paraguay, was sixty-five feet in length, fourteen feet beam, twenty-three inches draught, flat bottom, depth of hold three feet, deck laid in hatches, sides of deck-house of half-inch cedar boards to the height of five feet, and covered with painted canvas. Upon this deck the officers and men



STEAMER PILCOMAYO AND PARAGUAY GUARDIA.

slept. A table, four feet by two and a half, on movable legs, served on one side as a drawing-board, while on the other we took our meals. The seats, which were boxes fourteen inches square, served as lockers for clothes. Two small high-pressure engines of six-inch cylinders, eighteen inches stroke, with two locomotive boilers, which proved worthless, and wheels of twelve feet diameter, constituted the propelling power. Such were our equipments.

Judging from the performance of the little craft, which had been tried several times in the Paraguay off Asuncion, I supposed she could make five knots in slack water, and, anticipating a current "*muy manso*," we started upon the work in fine spirts.

I instructed Lieutenant Powell to visit, in my absence, an interesting section of Paraguay, embracing a part of the "Yerbales," to observe the process of gathering the leaves and preparing the

yerba, and to note the cultivation and general resources of that quarter of the republic. He was also directed to determine the geographical positions of the principal points in his route; and, in returning, to re-determine those in the interior, the positions of which, on account of the accident to the instruments during my journey, were unsatisfactory. Extracts from his report will be found in the Appendix.

The Water Witch remained at Asuncion to undergo extensive repairs to her engine and wheels, notwithstanding those so recently put upon her at Montevideo.

With four months' rations for twenty-four persons, ten tons of coal, and one and a half cords of wood, we entered the Vermejo, May 22d, 1854.

Expecting to find the river and adjacent country teeming with animal life, I thought I had made unnecessary provision for food, but I was mistaken. What may be the resources in this respect of the upper and middle sections of the Vermejo I can not say, but up to the point of our ascent—one hundred and twenty-two miles—there was little game, and very few fish. At one place only—the mouth of a small tributary stream, which I afterward named "Acacia River"—we saw a great number of fish.

The scarcity of game is doubtless owing to the hordes of neighboring savages, who subsist by the chase. Their skill with the bow and arrow and with the lance is extraordinary, and a vast number of skins of various animals are annually sold by the more civilized of them at Corrientes.

The mouth of the Vermejo is marked by no striking peculiarities. Its banks are low, and covered with a stunted scattering growth. After advancing three or four miles, we found, on either side, an older formation, and fine skirts of curupayna, curupay, algarroba, and espinilla; while beyond, inland, was the pampa, with its usual characteristics in this latitude—palms and grass. For a few miles the river maintains a width of from one to three hundred yards, with a depth of from twelve to eighteen feet. Tortuous, turbid, confined within narrow limits, we soon discovered that the current, so far from being "*muy manso*," was even then, at its near approach to low water—and from the appearance of the banks it had little more to fall—not less than three knots; it would doubtless reach at some places from four to five. At times we found it impossible to stem the current, or avoid being carried down with it, when working with full steam, and a pressure of

one hundred and twenty pounds. To keep out of it was an object, and when this was impossible we only advanced by the aid of a line made fast to some tree ahead.

In addition to the usual means for ascertaining its velocity, it was tested on two occasions by selecting suitable ground, measuring a base line of four hundred feet, and noting the time in which a chip cast upon the waters would pass from one end of the base to the other. They agreed within a very small fraction, making the current three sea-miles, or from three to four statute miles an hour; and, judging from the width, uniform depth, and appearance of the river at those two points, I believe the current was there weaker than in many other places.

Perhaps I have been more minute in dwelling upon this than its importance at first glance would seem to authorize; but should the Vermejo become, as I believe it very soon will, a channel of communication with the West, upon a proper understanding of its currents will depend the success of the first enterprises for its navigation.

It would weary the reader to follow us step by step through the thirty-two days of perplexing, toilsome duty in our fruitless attempt to ascend this river in a boat with the power of the Pilcomayo. I will only give some extracts from my journal for the benefit of those who may feel a particular interest in the subject. Each morning we resumed our labors, only to find with the setting sun that we had made little or no progress.

"*May* 27*th*. Under way at 6 A.M. Soon came to anchor to get up steam; unable with eighty pounds to stem the current. At 9½ had made two miles; saw a few 'patos reales.' Width of river from one to three hundred yards. On either side, grass and magnificent lofty palms. This palm timber is in demand at Corrientes, and it could easily be carried down on rafts. Made several ineffectual efforts to round a bend, with eighty pounds of steam. Our little boat went, crab-like, against the banks by the force of the current, and had five arms of the starboard wheel broken; a vexatious accident, but one against which the utmost precaution will not guard us in such navigation as this. Cut from an algarroba on the right bank arms for the broken wheel. This wood, which is as easily cut, split, and worked as Southern pine, is very durable, and unequaled, even in its green state, as fuel for steamers. In five hours the arms were replaced, and we were again under way.

"Anchored at sunset, and determined our position by stars north and south, east and west. Our men have thus far failed to catch fish with the seine or line. Shot five pavos del monte—mountain turkeys—a delicious bird. Nothing could be more acceptable, as our breakfast for some days has been hominy and coffee, and our dinner pork and beans, the last a diet of which even sailors tire when forced to live upon it for many days consecutively.

"29*th*. Creeping along, we keep as much as possible out of the current. Banks rise abruptly twenty-five feet, presenting strata of argillaceous earth, estuary mud, and reddish clay, with a surface soil from one to two feet in depth. Whenever they rise to the same height, the formation is very uniform. Several mounted Indians have presented themselves on the right bank. They manifest a friendly disposition, and say they belong to the Tobas tribe. They are fine-looking men, without paint or covering except a piece of cloth around the loins, and are armed with bows, arrows, and lances. They subsist by the chase and fishing, and hold some communication with Corrientes, where they dispose of their skins, principally those of the jaguar, deer, and nutria. We gave them tobacco, fish-hooks, and a few trinkets, with which they were pleased. But, much to our astonishment, the steamer seemed to awaken among them neither fear nor curiosity.

"30*th*. Made four and a half miles this day, and have been compelled to stop four times to get up sufficient steam to stem the current. We started with one hundred and twenty pounds, and as soon as it worked down to eighty we were obliged to anchor. Weather cloudy, with rain at intervals.

"31*st*. Reached Nacurutû, a small, thickly-wooded island, rising thirty feet above the water. A good channel on either side, the eastern being the deeper. In nine days our efforts to advance have been unflagging, and yet we have made but thirty-five miles. Saw to-day a jaguar on the banks, but he escaped before we were within shooting distance; also a few motus and pavos del monte. We have made two and a half miles; this is encouraging. I am disappointed in the scarcity of flora, animals, and birds. Anchored for the night near the island in a heavy rain, accompanied with thunder and lightning."

During this ascent of the Vermejo it was the habit of the officers at our stoppages to "get up steam" to go on shore in search of specimens. From the aspect of the country one might suppose

it a tolerable field; but we met with poor success. We saw only a limited number of the small partridge, moving always in pairs—the habit also of the larger species, of which there were very few. It is probable that many are annually destroyed by the habit the Indians have of firing the grass, a few months after which the pampas present the appearance of fine wheat-fields in May.

"*June* 1. Weather misty. Underway at 6 A.M.; at 10 A.M. had stopped three times to get up steam. Channel contracted somewhat by imbedded drift-wood. While at anchor I went ashore, and, passing through the woods that skirted the banks, found myself on the borders of the pampa, with a boundless extension of palms—those 'kings among grasses'—before me."

It was a vast temple to the Living God, that palm forest, with its long aisles and noble colonnades; its symmetrical columnar trunks rising to the height of more than seventy feet, with their feathery-foliaged capitals. The plain from which they sprung was unbroken by the smallest inequality except the conical structures of the ant, rising some three or four feet in every direction above the grass. Though this fair region has a varied zoology, and is the domain of fierce unsubjugated nomads, scarce the buzz of an insect was heard; not a form of animated life crossed my path. Yet the whole aspect of nature was indescribably cheerful. There were pleasant illusions, too, of picturesque villages; for, as we turned from the palms and followed the course of the river, marked by its wooded belt, in the varying height of branching trees we descried houses, pointed roofs, and miradores, so sharply defined that it was impossible to believe them unreal. What a crowning glory the palm forests offer to the vegetable system of this basin of La Plata! The varieties seen by us in the last few months would furnish supplies of nourishing farinaceous food, drink, medicine, arms, lodging, and clothing, to a vast population. We have seen them, not in patches, or groves, or park-like groupings, but in vast forests, extending many miles upon the rivers, and inland far beyond the reach of the eye.

"In this Vermejo pampa, though the palms are extraordinary in size and beauty, the variety in the species is appparently limited; but, owing to varied professional duties, my investigations into all subjects pertaining to natural history are at best superficial; and so teeming is the wealth of unexplored nature in La Plata that each department would furnish a study for years, or for a long life.



RIO VERMEJO—INDIANS FISHING.

"The position of the Rio Saco, as given on Descalzi's map, near the Island Nacarutu, is erroneous. There is no trace whatever of a river at that place. Sixteen miles above there is the dry bed of a very small stream, which, during the seasons of rain, may be a river, or have the appearance of one, for the waters of the Vermejo would back into it.

"*June 4th.* Had a talk with a group of Indians—men, women, and children. In stature and form the women are inferior to the men, and are much disfigured by tattooing, which is their preparation for marriage. Some of the men sported old cloth jackets, picked up probably in their trade with Corrientes, but the women and children were entirely naked except a piece of cloth about the middle. They had a few sheep, which they drive from place to place as they move their *toldos*.

"10 A.M. Anchored, with forty-five pounds of steam, unable to stem the current; though not exposed to its strength, we had worked down from one hundred and twenty pounds. Again under way at 11 5 A.M., with one hundred and twenty pounds of steam. Worked down to forty-five; throttle closed as much as possible. At 1 50, under way; in twenty minutes at anchor for want of steam. How can headway be made at this rate? Remained at anchor one hour and a half; moved twenty minutes, making each time from two to four hundred yards, and now and then dashing into the bank, when off would fly from two to four arms of the wheels. Hoping for better times, we will not give it up yet. '*Paciencia y mañana.*'*

"*June 6th.* Stopped to communicate with a number of Tobas Indians, who appeared on the banks, mounted on fine horses." The cacique "de Soi Carui" seemed to be regarded with profound respect by the whole party. He was dressed in a blue jacket, scarlet trowsers, and red conical cloth cap, measuring about eighteen inches in height, and having on its front a brass plate, with the motto of Rosas, "*Murien los salvages Unitarios!*" (Death to the savage Unitarians!) I sent a boat for him, and with a few attendants he came on board. "The Tobas live in toldos, which they move at pleasure; for they possess neither cattle nor sheep, and subsist by the chase and fishing. They mentioned a tribe of Indians some distance west, rarely seen by the white man, who have the hair and color of the negro."†

* "Patience and to-morrow!"—the Spanish cure for all ills of disappointment.

† At Asuncion I was informed that there existed in the northeastern part of Paraguay a tribe of caudated savages.

While wooding, I pulled ahead a short distance in the boat. The river is very tortuous, and seems to have undergone great changes. At one place it had formerly coursed in a semicircle, cutting into the left bank, while a point of land from the opposite side projected a considerable distance into this semicircular bend, at right angles to the course of the stream above. The action of the current had severed this neck from the main land, and, leaving the curve for the more direct course, had formed shoals at each end, which, with accumulated deposits, had in time joined the island to the opposite main land, and made one unbroken bank, leaving in the abandoned bed of the river a crescent-shaped lake of clear water.*

I landed near two Indians, who were fishing. They manifested no alarm, and gave me some nutria skins, which they called *chiquisi*. I offered them in return a few cigars, the only thing I had with me. The formation of the banks and the face of the country are unvarying, so far. From time to time bodies of mounted Indians, or small groups engaged in fishing, are seen.

The zoology of this pampa differs very little from that of the shores of the Paraguay. We have seen the jaguar, capibara, deer, nutria, and in a few instances the tracks of the tapir. The noise of our high-pressure engine may have driven some animals into the interior, but I think the scarcity may be ascribed to the skill and activity of the Indian hunters, and the traffic in skins carried on with Corrientes. The algarroba and espinilla are abundant upon the banks, but the flora—principally creepers—offers no new species.

"13*th*. Another party of mounted Indians were seen on the right bank. They resemble physically those before seen, and are indeed of the same tribe. Received an invitation to visit their toldo, distant some miles from the river. Three officers and five men accompanied me, and after a tramp through the long grass we reached their habitations, a collection of hide and grass sheds, closed only upon the south side. In this toldo were five men, as many women, and ten children. The women were preparing the seed of the caraguatay, an important item of food with them. It resembles parched corn, and is not a bad substitute when roasted. They gave us fruit of the algarroba and guayca-

* Lyell's description of the curves of the Mississippi—"Principles of Geology," p. 212—could not illustrate more truly the above and similar changes in the Vermejo had it been designed for them.

rurembayû, as it is called in Guarami, but these savages call it loquerai. They reduce the first to a fibrous powder, and find it so nutritious that it will alone sustain them on a march of many days. Mixed with the meal of parched corn it makes an excellent article of food, which is much used in the province of Santiago. These Indians had a few sheep and chickens; but they prefer horse-flesh to beef, and mules to either. A quantity of the former, cut in long thin slips, was hung up to dry. We gave them hatchets, knives, and a few yards of cotton cloth, in exchange for two sheep and some chickens. The former, in size and quality, were fully equal to any I had seen in Buenos Ayres or Entre Rios.

"All the women wore about the middle a piece of woolen cloth, blue, white, and red. The yarn is spun with the distaff, and very well done. It is woven by fastening the warp at each end to a stick, and confining it horizontally by four others driven into the ground. The woof is passed between the threads by a shuttle of the rudest contrivance, and driven into its place by the blows of a flat board. Such is their primitive mode of making what appeared a coarse but durable article. The colors were particularly bright.

"One mile above this the banks rise twenty-five feet, showing a deep stratum of ferruginous clay, and a sandy loam.

"A nest, built eight feet below the surface, and exposed by the caving in of the bank, gave us a curious evidence of the instinct and intelligence of the bee. A little beyond this I saw a vein of small fresh-water fossil shells, Planorbis, in a stratum of sandy mould, and on the opposite bank, imbedded horizontally, and projecting fifteen feet, was the trunk of a large tree twenty inches in diameter, hollow, and much worn on the outer side, leaving a shell five inches thick. It lay about twenty feet from the surface, and seventeen above the level of the river, in a stratum of sandy clay. It was so hard that for some time it resisted the axe. Again saw three other imbedded trees; the first lying horizontally in dark argillaceous earth, five feet from the surface; the second standing vertically; and the third twenty feet under ground, lying horizontally, the roots projecting from the banks.

"19th. Came to a pass, a narrow rocky reef, *tosca*, extending across the river, having on it a depth of three feet, with deep water immediately above and below.

"This, I presume, is the 'Paso da Lurbi' of Descalzi's map,

for it approaches more nearly to his description of it than any thing I have seen, although it does not correspond in position, which is, according to our determination, in latitude 26° 12′ south, longitude 59° 38′ west; variation 10° 52′ east. Many physical changes have doubtless taken place since Soria's descent of the Vermejo in 1826.

"23d. While wooding the vessel I pulled ahead and saw two Indians fishing; they were alarmed, and moved off when they saw us; but I reassured them by calling out '*Amigo!*' They stopped, and as we approached one of them said piteously, '*Mi amigo, mi malo.*'* I administered a few cigars, which had an instantaneous and salutary effect upon the frame and nerves of the poor savage, who, in return, insisted upon my acceptance of two large cat-fish. In their trade with Corrientes some have picked up a few words of Spanish, and '*amigo*' would probably be found, on all occasions, a safe pass-word with them.

"They exhibit both skill and ingenuity in their modes of fishing. A wattling breakwater is extended from the shore for about six feet, at a right angle to the current, forming a small space of slack water below it. Here the fish resort to avoid the current, and are caught by the well-baited hooks of the Indians. Again, they shoot them with the bow and arrow, and generally with unerring aim.

"*May 24th.* Latitude 26° 10′ 09″ south, longitude 59° 39′ 08″ west. We have ascended the river by its course one hundred and twenty-two geographical miles; the aggregate distance, by the various points of observation, of which there were nine, being eighty-three, and in a right line seventy-six. Having persevered for thirty-two days, at an average of less than four miles per day, and not made more than one tenth of the distance I anticipated in this time, I have determined to return, make some changes in the boat, and additions to the steam space of the boilers; their defects being the cause of all this toil and disappointment. The failure of the attempt, and the experience gained, only give me confidence in the practicability of ascending this river with a steamer of suitable construction and ordinary power.

"Though there may be sections of the Vermejo where the waters on either side expand into lagoons, wherever confined by high banks, the current is rapid, and those expecting to navigate this river must not be deceived by the '*muy manso*' of Spanish

* I am a friend, I am sick!

Americans, an expression they use lightly on all occasions. Our dear-bought experience in thirty days' work is sufficient proof of the difficulties of the navigation. Nor is it probable that they decrease in advancing; for it can flow through no country presenting a more unbroken level than this.

"Our examination shows a current from 3 to 3¾ sea miles the hour, or from 3¼ to 4½ statute miles, and at some points an increase upon this: a force to meet which the defective machinery of our little boat is not equal.

"We have advanced some distance above the 'passes' (the 'Paso de Lurbi' and 'Salta de Iso') mentioned by Soria, as offering the principal and only obstacles to the navigation at low water. The river has ceased falling, and I can discover no trace of the latter point, and but a faint correspondence with his description of the Paso de Lurbi, which may be accounted for by the great physical changes constantly going on."

The least depth in the channel was three feet; and the estimated rise, judging from unmistakable marks on banks and trees, was ten. The season of least water is July and August, which continues until the rains of November in the region of its source and those of its tributaries. I have before mentioned that it was impossible to obtain any data relative to the Vermejo, therefore its periodical changes beyond what I actually observed are unknown to me; and to repeat what has been given at various times as positive and reliable information would mislead others as it did me. The physical changes to which I have alluded, as occurring within a few years in the Parana, will explain those of the Vermejo in a quarter of a century. The simple fact of its having water at all seasons for vessels of two and a half feet draught, must set at rest any anxiety about its rise and fall, inasmuch as few would care to navigate it with a greater draught were its depth twenty feet throughout. The advantage gained at high water would be a slight increased width of the channel, which would, however, be counteracted by the increased velocity of current; at other seasons obstructions, such as trees fallen or imbedded in the bottom, would be exposed to view.

We made our mark at the point of return by felling a noble algarroba, measuring three feet through the stump, from which the little Pilcomayo was loaded with fuel to her utmost capacity, leaving a good supply for the next party of explorers, and hoping it would be our own.

On the 25th we commenced the descent, and four miles below anchored to examine a small tributary stream from the left, to which I have before alluded. Accompanied by some of the officers, I followed the bank on foot, while Lieutenant Henry, with two men in the dingie, entered its mouth. The current was there strong, and a hundred yards beyond, a fall of about three feet presented itself, with rapids extending a hundred yards—a foot for every ten. One of the boys in the boat, hearing the noise, turned to Mr. Henry, and said laughingly, "That looks, sir, as if it would stop us." "It will take more than that to stop us," replied the officer, and over the stern he sprang, in mud and water to the waist. The men followed his example, and, by great exertion, they drew the boat up the little cascade and through the rapids into the comparatively still water beyond. Mr. Henry again took the tiller, the boys the oars, and they continued the ascent for a mile or two. The sluggish current above the rapids, and the general appearance of this stream induced the belief that it had its source in some neighboring lagoon; that it was, in fact, the river described by Cornejo as flowing from a lake five miles from the Vermejo. The water was limpid and sweet.

We determined to return in the boat, thinking the pleasurable sensation of gliding down the cascade would be worth a capsize. On both banks were large acacia trees in full blossom, their branches in many places meeting and forming a bower over the water. The whole atmosphere was filled with their delicious perfume. It was, in truth, a scene of rich beauty. Gliding beyond this lovely avenue, with Mr. Henry, oar in hand, in the stern, and one of the boys in the bow, we dashed into the rapids. The little craft went like a shot, "straight on end," and in an instant we were pitching at an angle of forty-five degrees down the cascade. The boat seemed to be turning "end for end." Her bows went under, but in another moment she glided gracefully into the current beyond, and we quickly passed into the Vermejo, through numberless fish, among which were the golden dorado, leaping and dashing about as if defying the skill of our men, who were in vain trying to bait a mess. They were dainty, sensible dorados, wisely preferring the delicate provision brought down from Acacia River, as I shall call this stream, to the "salt grub" of the Pilcomayo. After some hours of angling, a few cat-fish alone rewarded our patience by taking to the pork baits.

The next day we made little progress. A short time after get-

ting under way, the boat became unmanageable and was carried by the force of the current against a snag, from which she was with difficulty extricated. After getting off, it was too late to fire up, and I determined to pass the hour before sunset on shore with my gun.

Dr. Carter and myself started off, marking the point of our departure from the bank opposite the boat by what we considered easily recognizable objects; but in the sameness of the woods skirting the river, not found again so readily as one might suppose. After walking some distance, occasionally turning to mark the starting-point—a clump of lofty trees—our attention was attracted by a vast number of birds very like plover, and apparently confining their movements to a low marshy piece of ground some distance before us. We forgot starting-point and courses in the pleasurable excitement offered by this shooting-ground. It was a wild-goose chase. The birds, like the fish of Acacia River, were too wary for us. At last we looked back for the clump of trees. It was undistinguishable, and there was not the smallest object to indicate our position or that of the boat. By our own estimate we were one or two miles from the river, with grass two feet high to tramp through, the shades of night upon us, and the comforting thought of savages and wild beasts for neighbors.

When we reached the Vermejo it was night, and no Pilcomayo was in sight. We hailed. The sound ran along the river, and Echo answered from the opposite bank. A second time we shouted, with the same response. The doctor and myself differed in opinion as to the position of the boat. Now following the bank for about half a mile, pitching occasionally over ant-hills three or four feet in height, with which the pampa was covered, we arrived at what the doctor had considered the point of our departure, but no Pilcomayo was there. We shouted and fired our guns. Again that provoking Echo responded. Jaguars and Indians were the only enemies we feared, but they were formidable ones, and might be lurking in the luxuriant grass; and it was questionable whether the report of our guns would invite or deter the approach of these inhabitants of the Chaco. I must confess that the prospect of being, within the next hour, the supper of one or prisoner of the other was by no means a comforting reflection. The doctor proposed that we should spend the night among the branches of the algarroba; but not caring to be treed like a coon,

I preferred a running fight, and kept to the banks. We retraced our steps, passed "my point," meeting with no incident more alarming or noteworthy than an occasional tumble over the ant-hills. Again we fired. Hark! the one howitzer of the little steamer replied, fainter and more distant than we could have imagined possible, but it was cheering. The doctor thought his eyesight better than mine, and proposed to lead, while I was to keep him in line by a star I had taken as the direction of the report. The pilot proved an indifferent one, for he suddenly disappeared, and a pair of heels above the sea of grass showed that he had pitched over an ant-hill. I again became the guide, and another gun from the boat assured me that we were in the right direction. We came to a bend in the river. The bank was high, and densely covered with lofty trees. Turning it, we saw the light of the Pilcomayo, and hailed her.

Officers and crew were anxious for our safety, and a detachment was about starting off in search. They had burned blue lights and fired small-arms repeatedly; but the height of the banks and the skirting of wood had hidden the first and deadened the sound. We had a hearty laugh over our adventures, and joked the doctor unmercifully for his "tree proposition." He had been a great coon hunter down in Old Virginia, had a vivid recollection of the difficulties of the siege, and thought that from such a leafy fort as an algarroba a garrison of two men might bid defiance to the jaguar and Indian of the Chaco.

At an early hour the next morning we were moving down stream, and in the afternoon of the following day again entered the Paraguay. In twenty and a half working hours we had descended the distance it had taken thirty-two days to ascend, and, stopping only at three points to wood, we arrived on the 5th of July at Asuncion.

I had not been unmindful of the 4th. One bottle of cheer had been kept for the occasion. It was passed round, and "Jack," with patriotic promptitude, responded to the call of "All hands splice the main brace."

We made the run from the mouth of the Vermejo to Asuncion in ninety-one running hours against a current, ascertained to be from two to two and a half sea miles an hour. In both rivers we had kept out of the currents as much as possible, but working by night the boat was doubtless contending with that of the Paraguay the greater part of the time. This was conclusive evidence

that the Pilcomayo, bad as she was, had made from four to four and a half sea miles an hour; and yet in the Vermejo we could make no headway with the greatest pressure of steam. I may then justly conclude that those who navigate it must encounter a current of four sea miles an hour in those parts confined between banks, and this, too, at low water.

About the time of our ascent of that river, some American and English merchants of Buenos Ayres entered into a commercial enterprise. They intrusted the execution of some preliminary arrangements to Mr. Hickman, a citizen of the United States, particularly enthusiastic and energetic in all transactions relating to trade. Their object was to open intercourse with the northwestern provinces of the Argentine States and Bolivia by the navigation of the Vermejo. Accompanied by four men Mr. Hickman set out by land, hoping to meet us at the town of Oran, and expecting from my party facilities and aids which would certainly have been rendered.

His purpose was to inform himself of the resources of the country accessible by this river; to construct a small boat, load it with samples of such articles as might enter into immediate trade, float down the river to Corrientes, and thence descend to Buenos Ayres. He reached Oran, built his boat eighty feet in length, sixteen feet beam, and five feet depth; loaded her with hides, wool, chinchilla skins, specimens of copper and lead ores, and left Oran on the 12th of March, 1855. The current dashed the boat against the bank near the point called Lima Muerta, about twenty-five leagues below, where he was detained until the 4th of April to repair damages. He died on the 6th of May, and was buried near the old "reduction" of San Bernard. The boat arrived safely at Corrientes on the 24th of the same month. According to a journal kept on board, she was under way two hundred and fifty hours, and floated a distance of three hundred and fifty leagues. This would make the current four miles an hour. The most intelligent men of this party were of the opinion that steamers of three feet draught could ascend within twenty miles of Oran at any season of the year. Having to cut lumber from the woods, they were ten months engaged in the construction of this boat and in preparations for leaving Oran.

By Mr. Hickman's death the projectors of the enterprise probably lost much valuable information that would have hastened the development of trade in that direction. But the time is only post-

poned when steamers will enter Corrientes, Rosario, and Buenos Ayres, freighted with the products of the North and West, a ton for every ounce that now finds its way into those markets for foreign shipment. To effect this, however, one thing is essential: the free and uninterrupted navigation of the river; that is, freedom from obstacles and annoyances arising from the territorial differences of neighboring nations. As to the Indians, they may become valuable aids in opening this new avenue of trade.

To show the resources of the country accessible by the Vermejo, and the immediate trade it offers, I quote from an interesting dispatch of Mr. J. W. Dana, our minister to Bolivia, addressed to the State Department.

"The whole region of country in the vicinity of the Vermejo, both in Bolivia and the Argentine States, including the cities above named (Oran, Jujuy, and Salta), abounds in horses, cattle, and sheep, and produces cotton, sugar-cane, tobacco, rice, cocoa; and at points a little more distant the alpaca is found in great numbers. The Rio Grande, a branch of the Vermejo, which enters it a little below Oran, is navigable to a point forty leagues distant from each of the cities Jujuy and Salta . . . . . .

"Estimates by the leading merchants in various parts of the country, which I have heretofore obtained, compared, and corrected, one by another, indicate the sum of $5,000,000 as an approximation to the amount of imports. These may be reclassed as follows: Iron and steel, all that is used in the country for mining and other purposes; large quantities of brandy, wine, and ale; all the table-service, cutlery, etc.; nearly all the good furniture, pianos, for which there is a very great demand; carpetings and paper-hangings; jewelry, watches, etc.; a large quantity of our coarse brown and blue cotton for outer clothing in warm climates; a large quantity of thick heavy baize, from England, which is universally used for the Indians and lower classes in the high cold regions; silks, broad-cloths, and all the various materials for male and female dress used in Europe and the United States. Hats, boots, and shoes are imported to some extent, but they are manufactured here, though badly, and at very high prices. In fact, all the necessaries and luxuries of a civilized society are brought from abroad, except the productions of the soil . . . . . .

"The exports of the country, a series of years considered, must of course be regarded as at least equal to the imports. These consist of copper, tin, silver coined, gold coined, cascarilla and Peruvian bark; to which may be added a small quantity of wool. Copper mines are abundant throughout Bolivia, including the region that would conveniently centre at Sucre; but, on account of the great cost of transportation, none are worked except those nearest the coast. They are so productive, however, that it is a very prof-

itable business when the transportation does not exceed seventy-five leagues. The same cause, distance and transportation, operates upon the mines of tin. When tin is high, they are worked to a considerable extent; when it is low, the works are in a great measure suspended. Those which are now worked are chiefly situated in the vicinity of Oran, between that and Sucre. The most productive silver mines are also in the region of Sucre, or properly of Potosi. One establishment near there produced $360,000 in the year 1856. But the cost of machinery, brought from abroad over the Andes on mules, is so immense that most of the mines are worked in the most primitive manner; and, consequently, only those which are very rich afford a remunerative business. As an illustration I will state that a company that has recently introduced European machinery is now working over a second time the substance from which the silver had been previously extracted, and doing so at great profit. If facilities were afforded for the introduction of improved machinery, I have no doubt that it would immensely increase the production."

CHAPTER XV.

Visit to the President.—Boat-cruise up the Riachuelo.—Victoria Regia or Mais del Agua.—Orange Groves.—The Plow.—Posta Contaro.—San Cosmi.—Ytati.—Hacienda Yrisbugua.—Race with an Ostrich.—Breaking a Horse.—Troubles at Asuncion.—Visit to the President.—Consultation with Mr. Hopkins.—Return to the Government-house.—Last Interview with his Excellency.—The Permit.—Correspondence with Mr. Falcon.—Council at Head-quarters.—Americans on board, descending the River.—The Navy heaves in Sight.—Passing the Admiral.—The President's Indignation and the Seminario.—The Treaty.—Mr. Falcon's extraordinary Letter.—False Charges in the President's Message.—The French Colony.—The Brazilian Squadron.—Outrage committed upon the Water Witch.—What our Policy with South American States should be.

I NOW remained at Asuncion merely to make all necessary arrangements for the alterations of the Pilcomayo, and to bring up a fair copy of parts of the work of the expedition, to be sent to the Navy Department. The latter duty was assigned to Lieutenants Murdaugh and Henry, and the former to Engineers Stump and Taylor, who furnished a plan for the proposed changes. Lieutenant Welsh had been suffering from a severe attack of neuralgia, aggravated by exposure in the Vermejo; and his general health was so much impaired that I felt reluctantly obliged to dispense with his services, and gave him orders to return home. I then determined to proceed to Corrientes, with the view of examining the northern and western parts of the province, and

to obtain the aid of a machinist for some repairs needed by the Water Witch.

I was going to a state for which the President of Paraguay had no friendly feelings; but in my visit of leave the manner of his Excellency was not only civil, but actually approached to cordiality. He desired me to call upon the government, without reserve, for any aid needed in the reconstruction of the small steamer, and to remember that my requests would always meet with a favorable reception. So entirely did he relax from his usual reserve on this occasion, that he accompanied me to the door, and taking my hand, expressed himself kindly for my success and speedy return.

Arriving at Corrientes, I called on Governor Pujol, who met frankly my request to visit the interior of the province, and said he would have orders issued from the postal department to afford every assistance. In the Argentine States, as in Paraguay, postas (post-houses) are established at distances of one, two, or three leagues throughout the country, and a sufficient number of extra horses are kept at them to meet any emergency that may occur. The traveler will always find his movements expedited by adding a few pennies to the usual charge per league; for the master of the post has generally some good animals, his private property, while those of the government are often so much broken down that I was compelled, at times, to turn my horse upon the road, and procure another from the nearest house.

Wishing to see the country adjacent to the river during the rainy season, and with the hope of adding something new to our collections, I determined to make a little boat-cruise up the Riachuelo, a small stream that rises in the interior and empties into the Parana nine miles below Corrientes. I was fortunate in obtaining some rare birds, and in seeing—what alone would have repaid for a longer journey—the "queen of the nymphæaceæ" upon its native waters. Extensive shallow lagoons, pure and limpid, were gemmed with islands of the "Victoria Regia," or "mais del agua" (corn of the water), as it is called in the country; for it is not only the queen of the floral tribes, but ministers to the necessities of man. Its seeds, which are about the size of large buck-shot, consist of a thin shell inclosing a white mealy substance. They are gathered by the Corrientinos and pounded into meal, from which they make excellent and nutritious bread. I procured a quantity, and sent them carefully sealed to the Navy Department.

I did not perhaps see the "regia" in all its glory, for the season of full flower, May and June, had passed; but it was still budding and blooming in sufficient perfection to delight the eye. A plant, with some of its native soil and water, was placed in a cask, but with all my care it died. What infinite study is found in its leaves—those great pages of Nature's book! I never wearied in examining their mechanism. Here, spreading over the lagoons, they looked as if they would bear the weight of men, and were covered at all times after dawn with myriads of water-fowl, gleaning the "corn," unless anticipated by the natives. The description given of this plant by Mr. Schomburgk, its discoverer, while exploring the river Berbice in 1837, renders unnecessary any description from me of the "mais del agua" of the Riachuelo of Corrientes. The regia of the former is of superior size to that of the latter place.*

I frequently left the boat and walked over the neighboring country. The soil is a rich dark loam, covered with fine grass. The sod had in many places perhaps never been turned, but where attempts at cultivation had been made, the product of corn and tobacco was excellent.

The orange-groves were generally neglected. I must except, however, a superb orchard of six thousand trees, one half of which, too young for bearing, were growing vigorously, while three thousand were bending under the weight of their golden fruit, and yielded an income, I was told, of $2500 per annum. These oranges are inferior to those of Paraguay. Indeed, those grown on the Parana, east of the capital, are not so fine as the fruit of the opposite shores.

* Schomburgk says: "The leaf, on its surface, is of a bright green, in form orbiculate, with this exception, opposite its axis, where it is slightly bent in: its diameter measured from five to six feet: around the margin extended a rim about three to five inches high: on the inside light green, like the surface of the leaf; on the outside, like the leaf's lower part, of a bright crimson.[1] The stem of the flower is an inch thick near the calyx, and is studded with sharp elastic prickles about three quarters of an inch in length. . . . . The diameter of the calyx is twelve or thirteen inches: on it rests the magnificent flower, which, when fully developed, covers completely the calyx with its hundred petals. When it first opens, it is white, with pink in the middle, which spreads over the whole flower the more it advances in age, and it is generally found the next day of a pink color; as if to enhance its beauty, it is sweet-scented; and, like others of its tribe, it possesses a fleshy disk, and petals and stamens pass gradually into each other, and many petaloid leaves may be observed which have vestiges of an anther."

[1] The color of those I saw was very much the same on both sides, a light green; and the size four feet in diameter.

Civil wars have so desolated this part of the province and so diminished the cattle that now the orange-groves form the principal source of income to landed proprietors. They require little attention, and a ready sale is afforded by the fruit-vessels that ply up and down the river. As the best estancias are generally owned by wealthy individuals residing at the capital, their only buildings are the rude dwellings of the capitazes or herdsmen. At these or in some abandoned hut we generally slept, spending the days in seeking ornithological or botanical specimens, and taking our meals wherever chance found us.

In our wanderings we came to the land of an industrious French immigrant, who, with a large family, had established himself on the Parana. He was breaking up his ground with a modern plow after the most approved system; and, from the appearance of the rich, dark soil, his labors were probably well remunerated by the return crops. From this farm we passed to that of a native, who was standing lazily looking on, while a boy with a fine yoke of oxen and a wooden plow, probably such as was used in the days of the Conquest, was scratching the surface of a piece of ground about fifty yards square.

"Did you see my neighbor plowing?" asked the Corrientino.

"Yes."

He broke into a long, loud laugh. "What a plow! Ha! ha! na! that fool of a Frenchman! He's crazy, sir! Why, sir, he is opening the ground as wide as the streets of the capital!"

The Frenchman's crops will, I presume, prove an unanswerable argument upon the merits of the two plows, and turn the laugh against his neighbor.

The Riachuelo did not extend far into the interior; but in following its course I was enabled to see a part of the province south of the capital, much better adapted to agriculture than that bordering the Parana, east of it. Population is alone wanting here, as in all parts of the Confederation. What homes these expanded plains and the delicious climate offer to immigrants! What a percentage on labor and capital might be drawn from these fertile wastes!

We returned to Corrientes; and with our saddle-bags (*alforjas*) packed with tea, sugar, bread, and a little caña, recommended as "cooling in summer and warming in winter," were soon equipped for a longer journey in the interior.

Upon a fine September morning, the doctor and myself. mount-

ing our rather sorry horses, started eastward, seeking science and adventure. Our first stopping-place was Posta Contaro, about twenty miles from the capital, where we were kindly welcomed, refreshed with supper of "asado" and mandioca, and, after cigars, made quite members of the family by having our hammocks slung up in the same room with the master of the post, his wife, three other women, and five children; one of these an infant, who entertained us during the night with solos and snatches of song that indicated good lungs. These poor people did their best to accommodate us, for this little adobe house had but one room, with a couple of benches, two chairs, and a rickety table for its furniture. Surrounding it was an inclosure with a few rows of corn, mandioca, and tobacco.

The following day we reached San Cosmi, and, by the activity of the *Juiz de Paz*, were assigned an empty room, which was transformed into a cheery, comfortable apartment by the thoughtful kindness of a lady, Señora Casales, to whom we had letters of introduction. Two cots, tables, and chairs soon made their appearance, followed by what we could not have expected, meals at stated hours. These consisted of beef, bread, chickens, eggs, and, what was really a luxury, snowy table-linen with plates, knives and forks, all temptingly clean. The hospitality of this place was repeated wherever we traveled in the Argentine States, and never limited but by the means of our entertainers. San Cosmi has about four hundred inhabitants, with a plaza, around which stand the church and the best dwellings. The latter are generally adobe houses of one story, either tiled or thatched. From a hedge in this neighborhood I procured the silk of a small black spider, long, exquisitely fine, and yet so strong that, as I wound it upon a card, the branches of the hedge would bend without breaking the web.

Our next ride was to Ytati, a village of several hundred inhabitants, twenty miles from San Cosmi, and in the immediate vicinage of the Parana, of which it commands an extended view. We went first to the house of the Juiz de Paz, whose pretty young wife received us with all the tact and ease innate to the women of that country, however humble their position. She chatted without embarrassment, and, probably discovering from our hungry faces that we had fasted for twelve hours, soon busied herself earnestly in preparing a supper which, to my surprise, comprised not only beef, chickens, and honey, but cow's milk and tea. The

last was a delicate attention that we appreciated. A native of the capital, the señora had perhaps there learned that this was the favorite evening beverage of foreigners. The plaza and its adobe houses were, in this place, overshadowed by an old Jesuitic church, then dilapidated, but which was about to undergo repairs that will make it one of the finest buildings of the province.

The appearance of the country thus far—forty miles east of the city of Corrientes—was singular but picturesque, and needs but dwellings and culture to make it extremely beautiful. It was not low or level, but broken by verdant *lomas* (hillocks) and gentle undulations, intersected by lakes, some insulated, others connected by miniature straits. These lakes were covered with myriads of water-fowl, and, as we looked back upon them from some ridge of land, their waters sparkled in the sunlight, and the birds sported as if alive to the beauty and security of haunts rarely or never invaded by man.

Civil wars have desolated this land. Hedges alone marked the inclosures where once stood the buildings of a now abandoned estancia. The soil was rich and light; the corn and tobacco in quality quite equal to the best of Paraguay; and the yield, in proportion to the extent of ground cultivated, is the best evidence of adaptation for such produce. I thought the pastures of the *lomas* better adapted to the rearing of sheep than of horned cattle.

A visit to the Hacienda Yrisbuqua, about twenty miles from Ytati, enabled me to see the management of one of the largest grazing estates in the province, its owner, Don Anjel Bedoya, having given us letters to his capitaz. In approaching it, the lowlands were much under water, but the general appearance of the country was improved. The dwellings were placed upon the lomas, above the influence of inundation, and, though few and far between, were substantially built either of burned brick and tiled, or of adobe and roofed with palm. There was no cultivation; but the pastures were fine, the cattle, horses, and sheep superior in number and size to any yet seen in Corrientes; and the growth of algarroba and espinilla, the only woods there of any value, abundant. A hacienda, or grazing farm,* embraces generally an area of six miles square, with about 6000 head of cattle, 500 sheep, and a few hundred horses. Although a great proportion of the land seemed to be not only arable, but of superior quality,

* A hacienda is exclusively a grazing farm, while on an estancia cultivation is combined with grazing.

we did not observe on one of them a yard square under culture; not even a garden around the dwelling of the capitaz.

In riding over the property of Don Anjel I had quite a novel amusement. An ostrich crossed my path, and, as I was well mounted, with an extended plain before me, I determined to try its speed with that of my horse. I kept up the chase for more than a mile, when I abandoned the pursuit; for it was evident that the ostrich "had the heels" of the horse.

Mares were not worth more than fifty cents a head, there being an absurd prejudice against their use, even as beasts of burden; and a man mounted on one would create as great a sensation and excite as much ridicule as a dandy upon a donkey in one of our thoroughfares of fashion. They are kept for breeding, and the increase is so enormous that they are slaughtered by hundreds, merely for their hides and grease, the latter being esteemed, for some purposes, superior to beef's tallow. The hair is worth about one dollar fifty cents the aroba, or six cents the pound; and large herds are driven into corrals exclusively for the shearing. A mounted gaucho throws the lasso over the neck; another on foot secures the hind legs, when the mare is brought to the ground; a third seizes the mane, a fourth the tail; and thus, in an incredibly short time, the poor animal is despoiled.

We also witnessed the "breaking" of saddle-horses and milch cows, the latter by no means a common operation; for few things are less cared for than milk by the natives of La Plata.

A wild horse is taken, by lasso, from a troop in the corral, to a post where, with his head closely confined, he is left for some hours kicking and pitching. To accustom him to the touch, the domador (horse-breaker) from time to time throws a lasso about his legs, which so maddens the animal that his struggles become frightful, and end in his falling exhausted upon the ground. The guacho then bridles him, and, as the horse regains his feet, puts on the "recado," while another releases his head and springs upon his back. This is all the work of an instant. Now the battle between rider and animal begins. The latter plunges, pitches, and rears, but in vain. There is no unhorsing the domador, who dashes on at full speed, whipping and spurring until, completely subdued, the horse is brought back to the post, to be exercised in the same way the following day, and again and again, until he is pronounced *muy manso*, broken, but rarely gentle.

The cow is caught and thrown down by the lasso, when a wom-

an tramples upon the udder to cause a discharge of milk. The animal is then led to a post, where she is bound head and legs while the milking goes on. In a few days she is sufficiently tamed to be classed among domestic animals.

On returning to Ytati I found a letter from Lieutenant Powell requesting my presence in Asuncion, where a serious difficulty had arisen between the United States Consul and President Lopez.

This controversy had passed through many phases when I arrived at the capital, and I have no idea of entering into details, farther than to state that the immediate cause of its outbursting, at that particular time, was an assault made by a soldier on the person of the brother of Mr. Hopkins while riding with a lady, also a foreigner. The man was driving cattle to the city, and on being met or overtaken by the riding party the herd was dispersed into the woods.

There was no personal injury to the lady or gentleman, but the insult was to be considered, and justly made a subject of complaint. In other countries it could have been settled without being a government affair; but here the President, as I have before so often stated, is the law, judiciary, and, *de facto*, head of all things.

President Lopez took exception to the language in which the complaint was made. A paper war ensued; crimination followed recrimination. The consular *exequatur* was revoked, and the wrath of the Chief Magistrate extended to the members of the American Company, of which Mr. Hopkins was agent. They had been permitted to occupy the quartel of San Antonio; had improved the grounds, purchased some adjoining lands, erected a saw-mill, and established a cigar-factory. They were now forced to give up the quartel. The controversy waxed hotter and hotter. Decrees or *bandos* intended to embarrass their operations were issued, and at last the cigar-factory was closed, thereby virtually closing the business of the company in Paraguay. I give a few of the *bandos*, which, though applied to all foreigners, were at this time issued for the special embarrassment of the Americans.

"1. No servant shall engage in the service of a foreigner without a written agreement or notification given and approved by the government, as to the amount of wages.

"2. All meetings of foreigners, except for the ostensible object of visiting and innocent diversion, are forbidden, by day and by night.

"3. All foreigners must take out a license to engage in any commercial or industrial ursuit."

This last article was reasonable; but the company, though going on for a year, had not before been required to take out a license, and when Mr. Hopkins made an application for it, in the character of "general agent," having paid sixteen dollars for the stamped paper, it was refused on the ground of his being "general agent." This title was objectionable to the government, and would not be recognized. He must apply as "agent," without the "general."

I am to this day mystified by this phase of the difficulty. There was but one General in Paraguay, the son and heir of the President; but by what process of reasoning the title of the "General Agent" reflected upon the head of the military arm I am unable to say; neither do I see why it should not have been relinquished. There were other petty annoyances, seemingly of a general bearing, but in fact aimed at the American Company.

Affairs had reached this crisis when I arrived at Asuncion, and found Mr. Hopkins determined, by reason of the course of the government, to leave the country with the members of the company and such of their effects as could be conveniently removed.

To show my course in this controversy, and the part I took toward effecting a restoration of the former state of things, to enable the company to proceed with its operations, I shall quote from my journal:

"*Sept.* 21*st*, 1854. This morning, at 9 A.M., I called on President Lopez; was courteously received, and discussed the difficulty between the government and Mr. Hopkins at some length. The President said the soldier had been severely punished by the infliction of three hundred stripes in "running the gauntlet" through the regiment to which he was attached. He complained of the intemperate language of Mr. Hopkins. It was, he said, insulting to him, and he had in consequence withdrawn his exequatur.

"I desired to be informed if the American Company would be allowed to carry on its operations under a guarantee of protection. He assured me that it would, and that it should receive every protection enjoyed by other business associations, whether foreign or native; but that the agent, Mr. Hopkins, was personally obnoxious to him, and he would not consent to his engaging in any business in the country.

"I informed him that other Americans belonging to the company had complained to me of insulting remarks made to them since that occurrence, even by officials; and said, 'I wish to know,

Sir, if, in the event of their remaining, they will be treated personally with respect, and shielded from the possible recurrence of insult or indignities.' He replied, 'They shall.'

"I met Mr. Hopkins by appointment, and informed him of the result of my interview with the President. He then informed me that the business of the company had been broken up by the action of the government, regardless of all pre-existing contracts; and that he should hold it responsible for the damages, looking to the United States Government for the enforcement of the reclamation; that, under these circumstances, he wished, with the company, to withdraw from Paraguay, but that no trading vessel would take them, the master fearing that the odium in which he was held by the government would be visited on them.

"I replied, 'I will see the President, and if no arrangement can be made for your leaving the country by a trading vessel, I will receive the members of the company and their effects on board the Water Witch, and convey them to Corrientes'—this being the point at which he wished to establish them.

"I called again at the government-house, stated to the President the apprehensions of Mr. Hopkins, and suggested that he should allow the Captain of the Port to procure a vessel, which would at once set at rest the fears of any shipmaster as to the consequences of receiving the Americans. He said, 'This shall be done.' 'Now, Sir,' I asked, 'what forms must be complied with to enable the company to leave Paraguay with their property?' He replied, 'They will simply be required to procure passports, and a "permit" from the custom-house for the shipment of their effects and merchandise, all of which they are at liberty to take with them, paying the export duty on such articles as are products of the country.' They had about eight hundred arobas of superior tobacco.

"A vessel was engaged, passports obtained, and I concluded that all was satisfactorily arranged for the departure of the company, when one of its members came on board the Water Witch and complained of fresh insults by the Chief of Police.

"Again I called on the President. It was my last interview with his Excellency. I reminded him of the assurances he had given me as to the personal treatment of the members of the company, and stated the new complaint, informing him, at the same time, in decided but courteous language, that my duty obliged me to watch over the rights of American citizens wherever I

should meet them abroad. The Chief of Police was summoned, and in a few minutes was announced as waiting the orders of his Excellency. He was directed to enter. The door opened, the Chief of Police stood on the threshold, and made a low bow. 'Approach,' said his Excellency. The Chief of Police approached. 'Take a seat.' He sat down, but uneasily. It was an unusual honor accorded him. The President stated the charge made against him. He of course denied every word, rising to his feet as he spoke.

"'Be seated, Sir,' said the President.

"The Chief of Police could not be kept seated, and rose at every word addressed to his Excellency. He was at last ordered to withdraw. The President was apparently as well satisfied of the truth of his statement as I was of the contrary. He then said that as the American in question had been the superintendent of the factory, he wished him to remove the sign (a piece of tin) and take a receipt for it, as he did not wish to give the company occasion to say that any of its property was withheld. I told him the individual in question could not do this, but I would relieve his Excellency from all embarrassment by directing one of my boat's crew to receive it. With some hesitancy, he acceded to this arrangement.

"In this interview I expressed myself very decidedly, but with the courtesy due to the President's position, and we parted apparently without any rupture of our friendly relations.

"I had scarcely got on board the Water Witch, congratulating myself that the difficulties were over, when another note was received from Mr. Hopkins. On applying for a 'permit' to ship the goods, it had been refused until he should surrender the papers, deeds, etc., which secured to the company certain lands, purchased and paid for.

"Before taking any farther steps I sent my clerk to ascertain from the Collector if I must understand that he refused a 'permit' for the dispatch of the company's merchandise on the grounds mentioned. He returned with a reply in the affirmative.

"I had been long enough in the country to know that the Collector would not dare to take such a step without instructions from the President. It was in direct violation of every promise his Excellency had given me, and I saw clearly that the moment had arrived when my action in this difficulty should be matter of record. I addressed a note to the Minister of Foreign Relations,

stating the facts of the case, repeating the assurances of the President, and telling him what would be my course for the relief of the members of this company if they were not allowed to depart by the usual mode of conveyance.

"On the afternoon of the same day I had received no reply; but a verbal message came from the Minister of Foreign Relations to the captain's clerk, desiring him to call at his office. I gave him permission to go; but, suspecting that the object of this call was to question him as to my correspondence, I enjoined silence. The secretary desired him to take my notes and request me to have them translated. I replied verbally that I must correspond with the government in my own language, and could not allow my letters to be translated by any one associated with me. Accompanying the note in question was one informing him that I had just received dispatches from our Minister at the Court of Brazil inclosing permission from his Imperial Majesty's Government to explore the Paraguay and its tributaries, within the limits of the empire, and expressing the hope that his Excellency would allow me again to pass through the waters of his territory to reach those of Brazil. This note shared the fate of the others. But that the contents of both were known to the President is evident from the tenor of subsequent articles in the *Seminario*, the government organ, published at Asuncion.

"President Lopez, I am told, reads both French and English;* added to this, there is an intelligent Englishman residing at Asuncion who translates for him, and much more correctly than I, my clerk, or any one associated with me could possibly have done.

"Failing to coerce me into this measure—the sole object of which was to exhibit to the people of Paraguay his authority over a foreign officer—my notes were returned the following day, with one from the Minister of Foreign Relations, Mr. José Falcon, informing me that the President did not read English, and desiring that I would translate them into Spanish, when they would receive proper attention.

"I replied to Mr. Falcon,† stating that the contemptuous treatment of my official communications, addressed in courteous language, was a thing unprecedented in this age of civilization; that it deprived me of the means of arriving at the intentions of his government relative to the departure of the Americans, and forced

* But imperfectly, I presume.

† See Appendix F.

upon me the inference that my request had been refused, thus making it an imperative duty to remove them from Paraguay in the Water Witch. At the same time I informed the Captain of the Port that I should receive them and their effects on board, and leave Asuncion at a certain hour.

"Scarcely had this announcement been made when President Lopez issued the 'permit,' showing conclusively that his Excellency was fully informed of the contents of my notes, if he did not read English."

It was late. The Americans were in the act of coming on board before its issue was made known. It expedited matters, however, for it was accompanied by an order to the Port Captain to afford them every facility in shipping their goods.

My last written communication to the Government of Paraguay was returned, accompanied by a note, of the same tenor as the previous one, from Mr. José Falcon. This was sent by an officer or employé in the office of the Captain of the Port, who, without coming on board, delivered the papers at the gangway, and made off in an instant, as if he feared infection or capture. I gave them in charge of an officer of the Water Witch, and directed him to return them to the Captain of the Port; and should he object to receive them, to place them in his office. The officer reported that he had acted in accordance with my orders.

Before getting under way, having occasion to pass through a good portion of the town, I observed that it presented an unusual appearance; not a soul was abroad. Asuncion was not at siesta, for it was not the hour; moreover, heads were peering through half-opened doors, showing that curiosity was stronger than fear or sleep. Something was wrong, and the people were anxious to know what difficulties were brewing with the "supreme government."

The plaza, usually the gayest and noisiest place imaginable, was deserted. I missed the picturesque groups of market women, with their white cotton mantas, seated upon the ground, encircled by fruits, vegetables, and an eager crowd of buyers. Not a man, cart, or horse was to be seen, except a few conveying the effects of the American Company to the beach. What was feared? The following explanation was made:

"Last night (the 28th), at midnight, the President called a consultation of his advisers, at which your letter was considered. The wise 'heads' thought they saw in it another 'Greytown af-

fair.' His Excellency thought, as heavy bodies move slowly, it would be prudent to be prepared; so he sent for a machinist to examine his carriage, and see that all was in good *running* condition. Orders were issued that no one should appear in the plaza or streets after eleven o'clock this morning, and not a horse or cart, except those engaged in transporting the goods of the American Company, was to be seen."

I had observed, as I have before stated, an unquestioning submission to the authority of the President; and in giving another's statement, I do so without adding my own indorsement of the suspicion.

"The submission of the people to the present grinding system is only simulated. They are not insensible to their thralldom, and the President really feared that if you fired at the government-house, the people might avail themselves of the opportunity to rise and change the order of things. He was prepared to run."

I had held pleasant social intercourse, while at Asuncion, with the Brazilian Consul, an amiable, gentlemanly person, who came on board the Water Witch and expressed, with much anxiety, the hope that I was not really about to fire into the town. I assured him that I had no such intention, and had never by word or deed intimated that I would do so; but that it was utterly impossible for me to be responsible for the gossip of others, or perhaps the inspiration of some wag who wished to frighten the President. My language and conduct, up to that moment, had been studiously respectful to the government; and as it had yielded every point, as the Americans personally were safe and on board the Water Witch, and the "permit" had been issued to facilitate the shipment of their goods, there was no possible excuse for so extreme a measure. I was not at all ambitious of the inglorious achievement of firing into a town, destroying the property of unoffending citizens, perhaps the lives of women and children, and disturbing the course of a government with which I had been directed to treat for commercial intercourse. The preparation of the steamer, with her three howitzers, placed on board as a protection against savages, was simply a duty to meet any contingency that might occur. I pointed out to him a field-piece, apparently a nine-pounder, on a very beautiful and commanding position, near a well-stored magazine, and within good howitzer range, around which were a number of soldiers ready to apply



PASSING THE GUARDIA TRES BOCAS.

the match; and said to him, "Should not that admonish me to be ready? I shall certainly defend my flag."

I had, it is true, resolved that if the property of the Americans was retained by the President, or placed where it was beyond the reach of our guns, to return the compliment by capturing his "navy" at Tres Bocas. But I had made no such threat, had no excuse for such an act at that time, and did not regret it. Under the "permit" finally issued, the effects of the company which could not be taken on board the Water Witch were placed in the hands of an agent, to be shipped to Corrientes.

With the Americans on board I left Asuncion the 29th of September. On reaching Tres Bocas we observed an unusual array of soldiers, and the little navy of five vessels, with their armament, ranging from two to six guns, all doubly manned, and ready, as the President had said, to "salute or fight." The vessels were moored so close to the bank that a plank from each would have enabled the personnel of the marine to make an excursion into the interior of the country at the shortest possible notice. On the deck of the flag-ship, a prominent figure in the picture, stood my old friend the "Admiral." Salutes would have been dangerous; for, from the evident state of hostile preparation, the first flash of one of their guns might have been returned by a fire from our howitzer, without delay for explanation. We passed slowly and in silence; many a soul on the Water Witch devoutly hoping, perhaps, that some brave son of Paraguay would provoke a fight.

I was glad that we were able to leave Paraguay peacefully. From our first entrance into her waters and the "Admiral's" reception at Tres Bocas; in our cruise to the northern frontier; during my land journey through the interior from west to east, from river to river, and in that subsequently made by Lieutenant Powell through the Yerbales, we had been hospitably and kindly received. And, indeed, the course of the President toward us, until his outbreak with the Consul, was characterized by extreme consideration. In all my official intercourse with him, in applications for facilities which the government alone could grant in forwarding the expedition—and it has been seen that they were not unfrequent—he met my propositions readily and observed his promises to the letter. I was aware of the faults of his political system, but even that was better than I had been led to anticipate before entering the country. My business there was not that

of a regenerator. On the contrary, while acting firmly and, to the best of my ability, conscientiously, for the protection of the American Trading Company, the dignity of our flag, and with a due regard to our national interests, I studiously avoided wounding the susceptibilities of the people and rulers.

Paraguay had scarcely joined the family of nations. Our people in the United States knew nothing of her social or political condition. We had never, until 1853, been represented there by even a Consul. I should, therefore, under all circumstances, without any personal feeling toward the President, and without reference to him as a man, have deemed it as much my duty to give the result of my observations upon the political state of the country as I should upon the rocks and shoals of her rivers. I believe my impressions to be correct. They were formed without prejudice, and may possibly assist us in directing our future diplomatic and commercial relations with Paraguay.

For trade, Paraguay was unoccupied ground. I had been sent there to negotiate a commercial treaty, to examine her rivers, and report upon her resources. I thought at the time, and still believe, that a valuable commerce might grow up with the United States. For manufactured articles it must be for many years a considerable market.

Again: the long-sought and much-desired permission of Brazil to explore her waters—the result of a negotiation upon the part of two of our Ministers for eighteen months—reached me in the midst of these difficulties. My future labors there and in Bolivia I had contemplated as the most interesting, and the most fruitful in results for science and commerce. Paraguay controlled the entrance into their rivers, and could embarrass my anticipated movements. I had every reason, official and personal, to use forbearance and discretion; and yet President Lopez, in his dispatch to our government, complains of the hostile attitude I assumed. The position of the President is perhaps an uneasy one. His people. know nothing of other countries. He governs them by maintaining an impenetrable reserve, and impressing them with the infallibility of his own acts and his commanding position among "rulers." He forgot that the members of the American Company were not Paraguayans, and that I was the representative of a republic where there are no "state secrets." He could not give my notes to a third party for translation. They were couched in respectful but decided language; their contents would

have become known to the citizens; and the declaration to pursue a certain line of conduct, with or without the permission of the "supreme government," was an assertion of independence, even on the part of a foreign officer, that the President did not care should be known.

I have been as concise as possible in the foregoing statement. It unfortunately led to a radical change in the feelings of President Lopez toward myself, and placed me in a position of antagonism which, as will be seen, I carefully endeavored to avoid. His vials of wrath seemed, like the widow's cruse, inexhaustible. On the 3d of October he issued a decree designed to break up my intended exploration of the waters of Brazil and Bolivia,* and, through the columns of his organ, the *Seminario*, poured forth his indignation in language marked by great asperity—a tone and style recognized in the countries of La Plata as peculiar to his Excellency.

On the 15th of October Mr. R. C. Buckalew arrived at Corrientes in a river steamer, the Buenos Ayres. He was bearer of the exchange of ratifications of the treaty of the 4th of March, negotiated by Mr. Pendleton, and ratified by the Senate of the United States. He also brought letters from the Secretary of State, Mr. Marcy, instructing me to propose the exchange. The treaties negotiated at the same time by the Ministers of France, England, and Sardinia had long since been ratified, and their consuls for Asuncion were on board this steamer.

As the Water Witch was excluded from entering Paraguayan waters by the decree of the 3d, I dispatched Lieutenant Murdaugh and Doctor Carter by the Buenos Ayres, with a note to the Minister of Foreign Relations informing him that I was commissioned to exchange ratifications, and desiring to know when and where I should meet a person duly authorized to act on the part of the Government of Paraguay. On delivering the paper, Lieutenant Murdaugh, as instructed, informed him verbally of its contents. He received the following reply, with my note returned. I insert it as a specimen of diplomatic writing:

* The following is a translation of this decree:

"Article 1st. In the navigation of the rivers of the republic, foreign vessels of war are excluded.

"2d. The exploration of the rivers of upper Paraguay, which are embraced within the territory of the republic, or of other neighboring states, can not be made through the lower Paraguay, pending the settlement of limits with the neighboring powers, Brazil and Bolivia."

[TRANSLATION.]

"ASUNCION, October 21st, 1854.

"MR. THOMAS J. PAGE, *Commander of the Water Witch.*

"In accordance with the conditions of my previous dates of the 29th and 30th* of the past, I return you your note dated the 16th of October in Corrientes, written in English, without accompanying it with a *signed* translation; astonished that you should persist in your idea of mortifying me.

"De V. L. atento servidor,

(Signed) "JOSÉ FALCON."

When we remember that the Spanish Americans are scrupulously observant of all form and ceremonial in official correspondence, the *quo animo* which dictated the above note is manifest on its face. It does not concede to the Water Witch her nationality; it is addressed to no particular place, and is not concluded in accordance with diplomatic usage.

Every effort on my part, consistent with a proper consideration of the position I occupied, to effect an exchange of ratification having been made without success, I reported the result to the State Department. After my return home, Colonel Richard Fitzpatrick was deputed Special Commissioner to Paraguay for the same purpose, but failed in the effort.

President Lopez repeats, in his message to the Paraguay Congress of 1857, certain statements relative to the part I took in the "American Company's affair" which he had made in a dispatch to the United States Government, dated October 3d, 1854.

He says, in alluding to passports taken out by the Americans when they expected to leave in a trading vessel: "Commander Page dashed those passports into the office of the Captain of the Port, saying that Americans had no occasion to carry them."†

I neither saw the passports nor gave any directions about them; and, as far as my memory serves me, I heard nothing of them. If this vulgar and unnecessary exhibition was made by any American it never came to my knowledge, or it would have received a merited rebuke.

Again, the dispatch says: "At the same time he ordered the

* These two I am unable to insert, as they were returned, in retaliation for the treatment my previous notes had received.

† "El Commandante Page hizo arrojar esas pasaportes en la Capitania del Puerto, deciendo no las necesitaban para llevar Americanos."

notes of the Minister of Foreign Relations to be dashed down with the passports."*

I have before stated that the notes alluded to were given to an officer, who was directed to deliver them to the Captain of the Port, and to say that I desired no longer to continue communications with the government, as my notes were returned unanswered. And should the Captain of the Port object to receive them—which I thought probable, judging from the manner of his messenger to the Water Witch—the officer was directed to place them on his table, and return. This officer was also accompanied by the captain's clerk, Mr. Bushell, who spoke the Spanish language. I can not believe that either of them would have been guilty of so great a breach of respect. Whatever might have been their feelings toward President Lopez personally, they perfectly understood the respect due to an official correspondence; added to this, I believe that all of the officers of the Water Witch entertained the most friendly feeling toward the Port Captain.

I have alluded to our final departure from the waters of Paraguay. In referring to this, the Minister of Foreign Relations says, in his dispatch of February 4th, 1855: "It is known throughout the world,† the surprising departure of Señor Commandante Don Thomas J. Page, who left highly offended and irritated at the people‡ of Paraguay. On the 30th of September last, from early dawn of the day there was evidence of fire proceeding from the smoke-stack of the steamer. Her guns were ordered to be loaded; and being asked by a certain stranger relative to this hostile preparation, he had the coolness to say it was to prevent any impediment to the departure of the Americans in the steamer. Page knew well that Hopkins and other Americans obtained passports on the 27th of the aforesaid September. Hopkins, in addition to his passport, took out a permit for his effects, tobacco and cigars."

In giving the date when they "obtained passports," why should the date "when he took out a permit" be omitted? Because, if dated at all, it would have borne that of the day on which the Americans came on board; and President Lopez thought to preserve his prestige intact by granting permission to do what he had failed to prevent.

* "Tambien mando arrojar con las pasaportes las notas que le ha despidido el Ministro de Relaciones Esteriores."

† What an extensive circulation he imagines the *Seminario* to have!

‡ He is mistaken: he should have said *government*.

I think all will agree with me that such inaccuracies become a national insult when introduced into an official correspondence.

If the government of the United States desire to establish and maintain commercial relations with Paraguay, if it intend that the citizens of our country shall peaceably reside there in carrying out the pursuits of trade, shall enjoy the privileges and immunities usually secured to foreigners in other states of South America, its course toward that republic must be decided, or it should abandon the idea of intercourse, and let our commercial community understand its policy.

The respect entertained by President Lopez for any foreign government is measured by the estimate he attaches to its power and determination to enforce its just rights. This opinion is not speculative. It is based upon facts; upon acts of that government which have occurred within a very recent date, to my own knowledge. Its disregard of treaties, contracts, and obligations, regarded as binding in honor as in law, is established by numerous instances of bad faith.

A treaty was signed, without due consideration, by General Urquiza, granting to Paraguay the exclusive right to navigate the Vermejo; but when submitted to the Congress of the Argentine Confederation, it was rejected. What was the course of President Lopez in this case? The rejection of the treaty rendered it null and void, and one would suppose that the question remained *in statu quo*. But, instead of acting on this principle, his Excellency claimed the power which a ratification would have given him, and closed the navigation of this river to "all, but especially to vessels under the Argentine flag." This is his mode of treating where he possesses the power.

A French colony was brought over in 1854, under the guarantee of a solemn contract, and established—not, as its deluded members supposed, in Paraguay proper—but opposite, in the Chaco, a territory in dispute between Bolivia and Paraguay, and actually in possession of the aborigines. Such was the treatment of these foreigners by President Lopez, that before the expiration of one year they broke up, and many of them escaped—not by the river, for the vigilance of its chain of guardias is not easily eluded, but through the Chaco, preferring to run the gauntlet of Indians, jaguars, and starvation to living under such oppression.*

* France has a treaty of friendship, commerce, and navigation concluded with Paraguay, and has a resident consul at Asuncion.

In 1855 the Emperor of Brazil sent a squadron of eleven men-of-war and as many transports, all well appointed, to adjust several questions between the two governments. Among the most important was that of territorial limits and the right of way to the Brazilian province of Matto Grosso. The squadron was stopped at Tres Bocas; only one steamer, the Admiral's, being permitted to ascend to Asuncion. Negotiations were entered into; some minor points were settled; and the expedition returned, foiled in its main object by the superior generalship and diplomacy of the President of Paraguay. The press of Brazil and the Imperial Legislature thundered their invectives not only against the Paraguay government, but against their own, for the failure. What was the course of President Lopez? After constructing a battery which would give some trouble to the Brazilian navy, with his usual astute diplomacy, and with a view of allaying the wounded feelings of his neighbors, and to lull their government into a confiding belief as to the sincerity of his motives, he dispatched a minister to Rio Janeiro to renew negotiations.

A treaty was concluded, granting to Brazil the right to navigate the Paraguay throughout, and reserving the question of limits for future adjustment. The Imperial papers were full of this treaty; honors were showered upon the successful diplomat; the struggle of years with Rosas and with Lopez was ended; Brazil had access by water to her northwest provinces, and vessels well freighted were dispatched to Cuyaba. But what is the end of it? Every imaginable obstacle is thrown in the way by the government of Paraguay. Vessels are unnecessarily stopped at guardias and towns; passports are viséd and re-examined at each and all; pilots are changed and cargoes examined—involving not only delay but expenses not anticipated. The treaty from which so much was expected turns out a nullity. Brazil then sends an embassador to Asuncion with special instructions to remove all difficulties. What is the result? He returns, having effected nothing.*

And yet the government of Paraguay is suffered to pursue this course. Well may the President imagine himself irresponsible, and impress upon his people the "supremacy of the republic." But the greatest of all outrages has been perpetrated upon *our* flag. While peacefully pursuing the objects of the expedition,

* Brazil, with certain warlike preparations, subsequently sent a minister to Paraguay, who brought that government to terms.

when her commander, all the officers (save the first lieutenant and engineers), and the better part of the crew, were engaged upon a distant work, the Water Witch was wantonly fired into from the Port of Itapiru, one of her men killed, and the steamer damaged. It will be seen, in the sequel, that the vessel was in neutral waters, and engaged only in the legitimate work of the expedition. It was the moment to give Paraguay a spirited rebuke that would have been remembered. In vain I sought the means of avenging the outrage without possibility of failure; but it remained unnoticed until President Buchanan, in his first annual message, called the attention of Congress to our relations with Paraguay, and requested that means should be placed at his disposal to demand redress for the insult to our flag and for the wrongs inflicted upon American citizens.*

It is made manifest by this enumeration of offenses that the Argentine States, France, Brazil, and the United States have tol-

* "I regret to inform you that the President of Paraguay has refused to ratify the treaty between the United States and that state as amended by the Senate, the signature of which was mentioned in the message of my predecessor to Congress at the opening of its session in December, 1853. The reasons assigned for this refusal will appear in the correspondence herewith submitted.

"It being desirable to ascertain the fitness of the river La Plata and its tributaries for navigation by steam, the United States steamer Water Witch was sent thither for that purpose in 1853. This enterprise was successfully carried on until February, 1855, when, while in the peaceful prosecution of her voyage up the Parana river, the steamer was fired upon by a Paraguayan fort. The fire was returned; but as the Water Witch was of small force, and not designed for offensive operations, she retired from the conflict. The pretext upon which the attack was made was a decree of the President of Paraguay of October, 1854, prohibiting foreign vessels of war from navigating the rivers of that state. As Paraguay, however, was the owner of but one bank of the river of that name, the other belonging to Corrientes, a state of the Argentine Confederation, the right of its government to expect that such a decree would be obeyed can not be acknowledged. But the Water Witch was not, properly speaking, a vessel of war. She was a small steamer engaged in a scientific enterprise intended for the advantage of commercial states generally. Under these circumstances I am constrained to consider the attack upon her as unjustifiable and as calling for satisfaction from the Paraguayan government.

"Citizens of the United States also, who were established in business in Paraguay, have had their property seized and taken from them, and have otherwise been treated by the authorities in an insulting and arbitrary manner which requires redress.

"A demand for these purposes will be made in a firm but conciliatory spirit. This will the more probably be granted if the Executive shall have authority to use other means in the event of a refusal. This is accordingly recommended."—*Message.*

erated indignities and wrongs of far greater magnitude than those which have often been the cause of war. We must at least admire the boldness of President Lopez, and the ability which characterizes his diplomatic course. At this moment he invites immigration. His offers to foreign companies wishing to engage in industrial and commercial enterprises are specious and plausible. I believe that under the guarantee of treaties, followed by able representation, a great and annually increasing trade could be established with all the interior states of South America, even with Paraguay. But, at the same time, a strict observance of the spirit and intent as well as of the letter of treaties must be exacted. The trimming and evasive policy, the constant effort to gain some advantage without the commission of open and avowed acts, which characterizes the course of the Paraguay government, should be arrested. That clause in treaties which secures to the resident foreigner the privileges and immunities extended to the natives would generally throw around him all needed guards against oppression. But what are the privileges of citizens of Paraguay? Isolated, ignorant of the political or even geographical divisions of the world; unable to contrast the operations of other governments with their own, they submissively acquiesce, and say "amen" to all the mandates of the "supreme government." A foreigner, familiar with constitutional laws and individual rights, is naturally restive in Paraguay.

But, on the other hand, "filibustering" will not create for us, as a nation, respect in the South American Republics. Neither will it promote our commercial interests nor advance civilization. The most brilliant oratorical efforts in our National Legislature upon the "Monroe doctrine" will be unavailing if we fail to convince them that our policy is genial and sympathetic. It is easy to have our flag respected without making it suspected. Among the states of La Plata there is a manifest struggle to advance. The course of Urquiza toward our representative, Mr. Pendleton; the Constitution of the Argentine States, modeled upon our own; the dispatches from Bolivia, show that they look for political sympathy, and at the same time earnestly desire to enter into commercial intercourse with us. I believe that President Lopez, from his reception of our expedition, desires it. A few rebukes and able diplomatic representation will soon make known to that astute personage the terms upon which it can be *maintained*.

CHAPTER XVI.

Lieutenant Powell dispatched to Montevideo.—Mr. Murdaugh ordered to explore the southern and western parts of the Province.—Extract from Journal of Lieutenant Murdaugh.—Cotton.—Saladas.—Sugar.—San Roque.—Return to Bella Vista.—Goya.—Rincon de Soto.—A Tour in the Governor's Galera.—A Bivouac.—Curuzu Quatia.—Return.—River Mirinay.—Estancia Bonpland.—Restauracion.—Uruguayana.—Note from M. Bonpland.—Imprisonment of the Naturalist.—Tobacco.—Coffee.—Lagoon of Ybera.

I HOPED that nothing more would or could break in upon the legitimate work of the expedition.

Lieutenant Powell was dispatched to Montevideo, with the Water Witch, for money, provisions, and ship-stores; Lieutenant Murdaugh was sent to make a detailed survey of the Pass of Bella Vista, one of the most difficult on the Parana; and to Acting Master Henry was assigned the continuation of the chart-work; also the astronomical and meteorological observations at Corrientes.

The Meteorological Journal given in the Appendix will show the daily state of the weather, but I quote from my own private journal its changes, and the temperature of the 2d December throughout the coolest and warmest hours of the day. This is the first summer month, and although the day selected does not exhibit the highest rise of the thermometer, it may be assumed as one of the hottest of that climate, and as showing the most sudden changes and greatest extremes of temperature.

"At 6 A.M., thermometer 80° in the coolest part of the house; at 9 A.M., in the patio, where there is a free circulation of air, it stands at 89°, wet-bulb 79° 5′; clear light air from N.N.E.; oppressively warm. At 12 M., thermometer 92°, wet-bulb 79° 5′; partially cloudy; wind N.N.E. At 12 45 P.M., a few drops of rain, cloudy; thermometer 90° 3′, wet-bulb 79° 5′. At 2 P.M., showers of rain; wind east. At 4 P.M., thermometer 78° 5′, wet-bulb 73°; cloudy; wind S.S.E."

After completing the examination of the Bella Vista Pass, Mr. Murdaugh was sent on a tour through the southern and western part of the province. His course was south to Goya; east to the Uruguay River, passing through Curuzu Quatia; north, along

its banks, to Restauracion; and thence to San Roque, on his return to the capital: thus passing through the finest land of Corrientes. He traveled by post—the most convenient way of passing through the country, notwithstanding the miserable horses usually found at the postas. By paying a small sum extra, good ones, which are generally the private property of the master of the post, can be had.

I quote from Mr. Murdaugh's journal:

"From the Riachuelo (about nine miles from the capital) to the Arroyo Empedrado, the country is flat, with considerable woodland in patches. These are happily called in Spanish *islas* (islands). The road good. The Emepedrado is now about two feet deep, but at times it is not fordable. There is much fine timber, principally quebracho, on its banks, but it is never transported by the river.

"These countries have an extensive system of natural canalization in the *riachos* (streams) and *riachuelos* (rivulets) that course through the interior provinces. Yet it is wonderful to observe how carefully they are avoided as means of transportation or communication, while the ox-wagon, the vehicle of centuries, moves lazily on—so slowly that at a distance an observer can scarcely detect its movement; carrying comparatively little, and consuming time, money, and labor unnecessarily.

"About five miles south of this river the country becomes undulating, which is a great relief to the monotony of the pampas. At the distance of about eight miles from it stands the Capilla del Señor, on the banks of the Parana, containing about 500 inhabitants. At the port were several vessels loading with timber (quebracho), which is brought from about eighteen miles in the interior, in ox-wagons drawn by six oxen, with a relay of the same number. Each wagon carries three or four pieces of this timber. Each piece is eighteen feet in length and nine inches square; three feet of which weighs one hundred pounds. The quality of the soil is much better than that generally found on the Parana. Considerable quantities of sugar-cane and corn are cultivated. At the posta, seven miles south of the Capilla, we stopped for the night. We managed to get a couple of little chickens for supper, and room enough to stretch our hammocks. Fifteen miles south of the Capilla we passed the Arroyo San Lorenzo, in the neighborhood of which the scenery is the finest I have seen in the province. The lands, sloping gradually to the river, remind one of

those pretty localities about Asuncion del Paraguay. For the same distance south of San Lorenzo the scene changes; the country is rather desolate, and so continues until reaching the neighborhood of Bella Vista.

"Here we were warmly welcomed by our friend Mr. Henry Hall, one of an English firm engaged in dry-goods and hardware trade. This little town has the prettiest situation on the Parana, and bids fair to become a place of consequence.

"Corn, tobacco, and sugar-cane are cultivated more extensively than in any other part of the province. Hides and timber are shipped from here; the latter is brought from a distance of 18 to 36 miles in ox-wagons, at a cost of 20 cents the yard. Our countryman, Mr. Yeatman, is struggling hard against weeds, thistles, want of labor, etc., in the cultivation of cotton. He has been at work for a year and a half, and thus far has failed entirely. He is now planting American cotton, with the hope of better success. He intends planting every year. He found that the perennial plant, after it has attained a growth of a year or more, deteriorates, and if not worked the annual product would be less and less. I am satisfied, after all that has been said in favor of it because of the economy of labor, that the cultivation of the annual plant would prove much more profitable, notwithstanding the necessary yearly preparation of the ground. The best yield of a perennial plant is said to be four pounds of cotton in the seed.

"Mr. Yeatman's selection of ground was, doubtless, unfortunate; and yet, so far as we have seen and heard, cotton is a product to which the soil of Corrientes is well adapted. No man should attempt its cultivation in these countries without first securing the necessary labor, for it is not to be had on an emergency. If the work could be done by a gaucho on horseback, there would be no difficulty. All inclosures must be made of iron wire, there being no timber in the province suitable for such a purpose.

"Outside of Bella Vista the horizon is as unbroken as that at sea. The town is hid among orange-groves. A good tree here is worth several dollars per annum; so that any one who has a grove of a thousand trees possesses a respectable fortune. Yet, because they do not pay for eight years, an orange-grove is rarely seen, save on the estancia of some foreigner.

"To pass through the little town of Saladas, we had to retrace our steps nearly to the San Lorenzo. At the posta just before reaching the town, a miserable rancho, the wife of the master is a

rubia—a woman with light hair and eyes. She is a native-born lady; the most pleasing woman of her class I have ever met with in the provinces. She never allows her children to speak Guarani, and always addresses them in Spanish—and very clear and pretty Spanish it is. Children of the pampas will mount a horse as soon as they are able to walk; but here is her son, a boy but four years of age, who has never done so. He shows an aversion to horses, and insists upon being a sailor. Living fifteen miles from the river, I doubt very much if he ever saw a vessel. This looks like natural adaptation. His mother's opportunities for acquiring such good manners were not superior to his for being a sailor in embryo.

"Saladas is situated amid *islas* of wood and surrounded by extensive lagoons, with fine fertile lands between them. These lagoons are the homes of innumerable wild fowl; and the land, where cultivated, produces most luxuriantly.

"Saladas is a very pretty place, containing about 500 inhabitants, principally employed in timber-cutting. A number of magnificent orange-trees around the town are each worth $2 per year. The soil is well adapted to corn and sugar-cane, but rather wet for cotton, although the plant is said to bear well for five years, yielding four pounds in the seed. The only cultivation is a little clearing around the roots.

"The making of sugar here would be a very profitable business. Labor, though scarce, may be had at four dollars the month. There is not a pound of sugar made in the country. All the demand is supplied with the most indifferent Brazilian, at prices that would pay well. Mr. Hall, in Bella Vista, makes molasses and rum of all the cane he can procure. Here is a fine field for immigration. The country must become agricultural, for the scarcity of cattle has made the raising of them in certain parts of Corrientes a thing that was.

"Steam saw-mills also should pay well in this part of the country. The large trees have been left standing because of the difficulty in their transportation. These could easily be reduced to transportable timber, and by the Santa Lucia River, distant nine miles, floated into the Parana; instead of, as now, carting it 36 miles at an expense of 20 cents the vara.

"Arrived at San Roque, distant from Saladas 24 miles. This village, situated on the left bank of the Santa Lucia, has about 300 inhabitants. The houses, as in all other towns of its size, are

built of adobe or of a net-work of poles, plastered and white-washed both inside and out; the roof thatched or covered with the trunks of palms. They generally have corridors, under which are the sidewalks. The plaza is large and the streets are narrow. I am told that at the lowest state of the river the Santa Lucia has four feet of water from here to the Parana, with a current of one and a half knots. The water is clear and limpid, but is said to be a little brackish when the river is low.

"The commandante told me that about three months past circulars were issued to all the commandantes, that in case of a visit from Captain Page they were to do all in their power to forward his views."

From San Roque Mr. Murdaugh returned to Bella Vista. He found the country between the two places very much intersected by lagoons, the road for miles in extent being six inches under water. There was very little cultivation, and it is altogether a desolate portion of the province. He says:

"Just before dark the postillion got so far ahead that I lost sight of him, and for an hour was floundering about in the high grass and water by myself, under the expectation of seeing my horse give out at any moment. But as there was no dry spot, I determined to ride him till he fell, and then lie upon him until he should get up again; or, should he lie so long, until daylight. I blessed the Spanish race. Three hundred years have these people occupied the country, and not one hand's turn have they done toward making a road. I managed to get out, fortunately, where the postillion was waiting for me. My remaining wrath was expended on him. We reached Bella Vista at 9 P.M.

"From this place to Goya—a distance of 54 miles—the country presented the same aspect: flat elevations (lomas), here and there a house, with half an acre under cultivation with corn, a little tobacco, and a few pumpkin vines, and no trees save a few *umbus*. The post-horses were wretched. I hired better ones from the master of the post. At 49 miles reached the town of Santa Lucia, about seven miles north of the river of the same name. It is one of the old Jesuit establishments, and has the best church I have seen in the province. Five leagues to Goya; hired good horses and a vaqueano at seven paper dollars ($1 60). In crossing the Santa Lucia River (75 yards wide, current 1½ knots) the water was up to the horses' backs. Two and a half leagues to Goya; land level, with espinilla growth.

"Goya is a thriving place. It is rapidly overhauling Corrientes and will soon be ahead of it. A large quantity of cheese and many hides are shipped from here for Buenos Ayres and Montevideo. Through it the back country to the Uruguay is supplied with all its necessaries. Many houses are better than those of the capital, and there is an air of life and activity that is refreshing in such a backwood country.

"Visited the governor, Señor Don Juan Pujol, who is spending a few days here in his tour of the province. He is a man of easy and pleasing manners, and is agreeable in conversation.

"The Rincon de Soto, a commanding promontory just above the mouth of the River Santa Lucia and on the Parana, is the location selected by the governor for the establishment of the colony of French immigrants who are expected to arrive soon at Montevideo.

"On Christmas eve we went at midnight with two señoritas to the 'Mass of the Cocks' (*Mesa da las Gallas*), and on Christmas night we attended the Club Ball, where we saw many very pretty girls, of graceful manners and dressed in good taste.

"Having accepted the invitation of the governor to accompany him in his tour, at least so far as across the province to the Uruguay, we took our seats in his galera. In this omnibus-like equipage were four of us inside—the governor, his secretary, Johnny Page, and myself. We were drawn by six horses mounted by gauchos, with attendants on horseback. We numbered four officers, two clerks, thirty-six soldiers, and three servants. Off we dashed at half speed, trumpets sounding, sabres clashing, ladies waving their adieus from windows and balconies. Each soldier carries a carbine, sword, cartridge-box with twenty rounds, a valise, and any quantity of nick-nacks useful on a journey. At two leagues from Goya we left the low flat lands and entered upon the lomas, with lagoons and palms. Stopping for siesta at the estancia of Don José Fernandez, we partook of a beautifully provided dinner, which was concluded with a draft upon the governor's cake and wine from the locker of the galera. The soldiers soon had a fat bullock converted into asados, round a blazing fire, each one laying in store a ration for supper, which was strung under the neck of his horse.

"We moved on after the refreshments of dinner and siesta, and, passing through a park-like country of palms, covered with fine fat cattle that had kept the grass short, we were overtaken at a

rancho by a heavy rain. Here we stopped for the night. The governor and secretary took the rancho, running the risk of being not a little annoyed; the two clerks took a covered cart, while Johnny and myself occupied the galera. Each soldier, having picketed his horse, procured a dry hide, and, bending it into a roof-like shape, crawled in for protection from the rain.

"We started early in the morning, and soon reached Corrientes River, over which, from its depth, we were obliged to swim the horses, and transport the galera on canoes. Trunks of palms were passed under it, resting across two canoes, one on either side. Three horses, made fast to it by 'lassos' from their tails, were started for the opposite shore by about twenty soldiers, who, swimming and shouting, kept them in the proper direction. The river here—the Santilan Pass—is about two hundred yards wide, with a current of two knots. The country in the immediate vicinity of the river is like an immense sweet-potato patch, of ant-hills from two to three feet in height, which greatly impeded our progress. It was necessary to level them for the galera to pass. This required the use of the pick axe, so hard and well-constructed are these dwellings of the ant.

"Passing this 'Malisal,' we got upon a fine rolling country, intersected by arroyos and skirted by espinillas. The soil is dark and rich. The grass here, called flechilla, is short, with a stem bearing seed similar to oats. The governor says that for cattle it is superior to the alfalfa, and, judging from the appearance of the animals, nothing can be better. This grass extends to the Uruguay. It is not found west of the Corrientes, nor in Paraguay. I regretted that it was not the season of bearing seed. The governor promised to have some of it gathered for our collection."

There is a gradual elevation of the land from the Corrientes to Curuzu Quatia, from whence it gently descends again to the Uruguay. This is certainly the most valuable part of the province; but, like most others, it is better adapted to grazing than cultivation. There are, however, wide fields of fine lands open to both. Cattle are now selling at $10 the head, and horses, equal to any in South America, at $16 for the best. Very favorite animals at times sell for as much as $30. Mares are valued only for their hides and tallow, and sell at about fifty cents per head. We found rich milk through the country, but it is used only for making cheese. Mr. Murdaugh speaks of the quality of beef as being superior to any he has eaten in South America.

"Soldiers had been sent on ahead; and on our arrival at the posta we found a fat beeve stripped of his hide, and ready for the asado. On the arrival of the galera the troops form a line to receive the governor as he alights; and at the sound of the trumpet each man dismounts, and in the shortest time imaginable his horse is divested of his trappings, and let loose. Four men at a time enter a well-stocked corral, and each man lassos his horse, and pickets him outside to be ready for the morning. The soldiers then collect in groups, light fires, prepare the asados, and arrange the beds out of the various parts belonging to the recado. All this, mingled with neighing of the liberated horses, the clatter of those in the corral, and the shouts of the men, presents a lively and exciting scene, to the enjoyment of which the savory odor of the asado adds not a little.

"We reached Curuzu Quatia in the afternoon at 4 P.M., near which the governor was met by all the principal men of the place, and escorted into town under salvos of fire-crackers, rockets, ringing of bells, etc. Curuzu Quatia is one of the oldest Jesuit stations. It has been several times destroyed during the civil wars, and now contains not more than two hundred inhabitants.

"Finding that the governor will be detained here longer than he anticipated I shall be constrained to leave him, and shall return to the capital, coasting a short distance along the Uruguay, leaving Johnny,* at the earnest solicitation of the governor, who has taken a great fancy to him. How far in advance of his countrymen generally is the governor! He is a liberal, intelligent gentleman. His politeness and kindness during our short journey together will not soon be forgotten. He has ordered a soldier to accompany me, with letters to the different commandantes on the route, and orders that I shall be furnished with the best horses.

"Set out January 1st, 1855, for Restauracion, *via* Santa Ana. At ten leagues crossed the River Mirinay, a tributary of the Uruguay, and taking its rise in the Lake Ibira. Its depth is four feet, width twenty-five yards, current 1½ knots. The country passed through very much the same. At sunset stopped at the estancia of Mr. Bonpland—the former companion and friend of Humboldt

* The governor's kindness to my son was truly paternal; he presented him with a horse, and, while indulging him in every roguish amusement, made him write Spanish daily. When he returned, after an absence of some weeks, it was under the protection of a soldier; and they made on horseback seventy-five miles in one day; quite a ride for a boy of thirteen, who complained of no fatigue.

—and was warmly welcomed by him. The governor had given me a letter to him. His conversation was exceedingly interesting. He talked much of the great Humboldt and his travels. His age is eighty-two, but he is still active; will mount a horse, and ride twelve to fourteen leagues a day; but says he does not now gallop. He has a house full of children by a native wife; possesses two estancias—one near San Boja, in Brazil, well stocked with cattle and sheep. He takes great care of his garden, in which he has growing some little of almost every thing, even to the tea plant. The soil is light. Cotton, he says, is not worth cultivating on the Uruguay; neither is the land east of the Corrientes River adapted to it. His Irish potatoes are very good. His house is situated about one mile from the right bank of the Uruguay.

"He accompanied me as far as the little river Santa Ana, on my way to Restauracion. He had received Captain Page's invitation, and expressed a strong desire to be with us in an exploration of the Upper Parana.

"Restauracion is a thriving little town of 500 inhabitants, situated on the right bank of the Uruguay, which at this point is about one mile wide, six to eight feet deep, current 1½ knots, banks sixty feet high. At the season of high water hides and yerba are shipped to Buenos Ayres or Montevideo, and merchandise is brought up in return, for the northeast part of the province. The fall (*salto*) between this place and Concordia, below, can be passed only at high water. There are a number of vessels waiting for the rise, for which there seems to be no invariable period.

"Just opposite is the town of Uruguayana in Brazil, containing about 1500 souls. The houses are well built, very superior to those in Restauracion. It is apparently a growing place. Wishing to recross the river, I was stopped by the custom-house officers, and told that it was after the hour when communication with the other side was allowed. On going to the commandante and collector they both promptly issued permission for me to cross.

"On my return to the capital, from which this place is eighty leagues, I took the route through the little village of Mercedes—of 150 souls. Crossed the Mirinay; depth 2½ feet, rocky, current strong. Made 72 miles—horses bad; and passed through San Roque, Saladas, and Capilla del Señor, where I entered the road already traveled. The Rio Corrientes, where I crossed it, was deep, with about a two-knot current.

"The country through which I had passed from Restauracion to San Roque is very much the same as that already spoken of between Goya and Curuzu Quatia."

On reference to the map the route taken by Lieutenant Murdaugh will be seen. It was so directed as to embrace different sections of the province, and give a comprehensive idea as to their agricultural and pastoral resources.

It will be observed that Mr. Murdaugh alludes to my invitation to Bonpland, whose presence as a member of our party would have been a pleasure, and a great privilege. I thought he would feel some interest in participating in our explorations, and addressed a letter asking him to join us, and go over again for a time the life of his early days. He now (January, 1855,) accepted the invitation; and we should have had the benefit and enjoyment of his company but for the occurrences that arrested our work on the Parana. Driven out of Paraguay by the Dictator Francia—for it could not be regarded as a release—Mr. Bonpland continued to reside in La Plata; and, being now over eighty, will probably never leave the country.

I subjoin a translation of Mr. Bonpland's letter in reply to my invitation to him to join our party in the exploration of the Parana.

"Santa Ana, January 2d, 1855.

"To Th. J. Page, *Commander of the Steamer Water Witch:*

"Sir,—I must appear very culpable in your eyes for not having before answered the letter you did me the honor to write to me from the town of Concepcion, November, 1853. Permit me, then, to state some circumstances which will lessen my culpability.

"I must first thank you for your obliging offers; they are in consonance with my wishes, and I had firmly resolved to accept them, when I left for Montevideo, where I was obliged to remain for a few days. On my return to San Boja I intended to proceed to Paraguay, and avail myself of your polite invitation, as well as your agreeable society, and that of the officers who accompany you.

"While engaged in preparation for my journey a report reached me that you were not in Paraguay, and that the Water Witch was commanded by another naval officer.

"You will see in these few words, Captain, the cause of my silence, and the suspension of my journey to Paraguay.

"Yesterday evening I was agreeably surprised by Mr. William Henry Murdaugh, who honored me by a visit at my humble cottage. I am now

certain that you command the Water Witch, and that you propose to ascend the Parana, for which reasons I hasten to address you these lines.

"From your invitation and the conversation I have had with Mr. Murdaugh I am going to ask the consent of his Excellency, Governor Pujol, to accompany you in the Parana, and if, as I hope, he shares my opinion, I will hasten to notify you, and ask beforehand if it will be agreeable to you. During fifteen years I have had in my service an Indian of the Guayana tribe, who has ascended the Parana above 'Corpus,' and with your consent he will accompany me, and he will perhaps be found of some assistance. He is a reliable Indian, faithful, honest, and possessed of good qualities. If I should be so happy as to accompany you, we will, I hope, be able to make some useful collections for the museum of your inimitable country.

"I have the honor to salute you, Captain, and beg you to accept the assurance of my respect.

"Your obliged and devoted servant, AMADÉ BONPLAND."

Bonpland's association with Humboldt in his travels, and his detention in Paraguay, are facts known to the whole scientific world.

Sir Woodbine Parrish mentions that, upon his arrival at Buenos Ayres, in 1824, in applying to Francia for the release of British detenues, he also interested himself in behalf of foreigners whose governments were unrepresented in La Plata. Among them were Rengger and Longchamp, but above all, Bonpland, who, when residing in an Argentine state, pursuing his botanic studies, had been seized and carried off a prisoner by an armed force sent for that purpose across the Parana. He was residing within the territory of a state at peace with Paraguay; but he was cultivating the yerba. This was a grievous offense to the dictator, who regarded the South American tea as his peculiar monopoly.

After a time the naturalist was kept as a prisoner at large; that is, restricted to a few leagues around the town of Santa Maria, where, with the philosophy of the French character, and undaunted by misfortune, he employed himself so actively, usefully, and acceptably to the simple Paraguayans, whose condition he endeavored to improve and ameliorate, that he at last excited the distrust and envy of the dictator, who sent him out of the country, as summarily as he had been made a prisoner, after a detention of nine years. Mr. Grandsire, the special agent of the Institute of France, and the British chargé d'affaires, had previously in vain sought to effect his release. An order finally came from Asuncion to the commandante of Santa Maria to remove him; and

on the same night he was placed in a canoe, paddled across the Parana to Corrientes, and there left, with nothing but a few clothes.

We find that he is again, at the ripe old age of 82, actively engaged in agricultural pursuits in Corrientes, with a Spanish American wife, and a large family of children.

Though the territory of Corrientes comprises an extent, from north to south, of nearly five hundred miles, with more or less width from east to west, its population, inclusive of that of the capital, which has from twelve to fifteen thousand inhabitants, does not probably exceed fifty thousand souls. It is intersected by several navigable rivers, and has a large number of lakes. Its lowlands, as well as the lomas, are highly fertile.

The city of Corrientes, one of the oldest of La Plata, founded in 1588, soon after the settlements of Buenos Ayres and Santa Fé, is admirably placed near the confluence of the Parana and Paraguay, and about seventy miles below the mouth of the Vermejo. It is the principal market of the Chaco Indians for furs. In addition to the resources of the province, which would undoubtedly be great under an improved system of culture, it has, by the rivers, a communication with the eastern and western shores of Paraguay and the western borders of Brazil; by the Vermejo with Bolivia; and again south by Buenos Ayres, its Atlantic outlet. The men are great horsemen, active and temperate, but disinclined to work. Inducements are held out to immigration;* and, under the present Constitution and the stimulus to trade produced by the opening of the rivers, it offers an admirable field for enterprise and industry. This province has suffered greatly from the civil wars that have distracted the country, and the decrease of cattle is enormous. In every direction we noted the marks of abandoned estancias, possessing an adaptability for grazing and agriculture apparent to the most casual observer.

With careful culture, the tobacco will probably prove, in quantity and quality, quite equal to that of Paraguay, and with the introduction of agricultural implements, both cotton and sugar may be grown with success. Indigo and cochineal have been exported in small quantities, and a new species of the former, called "yuzo," was some years since made known by Bonpland as an article that might become very valuable as an export. I have alluded to the silk of a small black spider, a specimen of which I collected from a hedge and brought home with me. Bonpland

* See Appendix G.

sent some of it to France, where it was pronounced unfit for manufacturing purposes; but the cocoons of another spider, some of which I also brought home, are, from their appearance, undoubtedly equal to those of the silk-worm, which they resemble in form and size. They are spun upon the orange-trees, and are exactly the color of its ripe fruit.

As an experiment, coffee has been cultivated, with success. I have alluded to the orange-groves. The fruit is not equal to that of Paraguay, but no product finds a readier sale. Parts of the province are well timbered, and the bark of the curupay is considered invaluable in tanning. Under the present system, hides, tobacco, timber, for Buenos Ayres, and wool, may be considered the staples.

The most extraordinary physical feature of this province is the Lagoon of Ybera, which I regretted that I was unable to examine. According to Azara, it is fed by filtration from the Parana; and yet is itself the source of four considerable rivers—the Mirinay, which flows into the Uruguay, the Santa Lucia, the Bateles, and Corrientes, which disembogue into the Parana. There are parts of it, inaccessible either to boats or horsemen, that are covered with aquatic plants, and even considerable trees. It was Azara's opinion that the Parana itself once coursed through this lake, and that it will, in the course of ages, resume its ancient channel.

It is difficult to explain the origin of the name *ybera* (brilliant water),* handed down among the Guarani race from the remotest ages, before the Conquest. Some convulsion of nature may have brought to its present marshy state what was once a beautiful expanse of water; or, probably, *y-bera* may yet be applied in no inappropriate sense to its unexplored interior. D'Orbigny, under extraordinary difficulties, though at a dry period, forced a passage some distance into this lagoon. So far as his experience went, he discovered it to be not so much one monotonous and extended marsh as a succession of lagoons, two or three miles in width, which seemed to have a uniformity of direction, and so confirmed, in some degree, the suppositions of Azara. The depth of water, though varying, was at no time very great, until reaching what was supposed to be the heart of the lake. What lies beyond has always been with the Indians a fruitful subject of superstition and marvel.

* *Y*—"water;" *bera*—"brilliant."

CHAPTER XVII.

The Dinner at Corrientes.—The Address.—Toasts and Wine.—A Cargo of Lumber.—The Saladero.—The Water Witch dispatched up the Parana.—Sudden Return of Lieutenant Jeffers.—The Steamer run aground by the Pilot.—Fired into from the Fort, killing the Helmsman.—False Claims of President Lopez to the Channel.—Erroneous Statements and Fancy Sketches of the President of Paraguay.—Affection for the Salto Grande.—Dispatch to our Government.—Its Contents refuted.—Return to Buenos Ayres.—Lieutenant Powell dispatched to Rio.—Arrival of the Savannah.—Indecision of the Commodore.—Refusal to grant the Guns.—United States Legation *versus* United States Squadron.—What should have been done.—Dispatch from Señor Vasquez.—The Commodore impressed with the Fact of the Parana containing sufficient Depth of Water to admit a Sloop of War.

Some of the crew asked permission to give a dinner to their foreign friends, principally the carpenters of Corrientes who had been engaged in the repairs of the small steamer. The request was of course granted, and a busier, happier set of souls can not be imagined than they were in their preparations for this feast. Pantry and stores were thrown open to them, but the best tablecloth the steward could produce was not equal to the dimensions of their table, which was set in the patio of the house we occupied, and made of planking designed for the repairs of the Pilcomayo; but some yards of bleached cotton supplied the deficiency, and the purchase of a few glasses, added to our stock, completed the preparations. By their own arrangement nothing stronger than wine was allowed, and a bottle or two from my nearly exhausted supply was sent, with a message that it was from "home," for none like sailors on foreign stations realize the magic of that word. An awning, which extended over nearly the whole patio, excluded the sun, and, with the assistance of our steward and cook, a substantial and excellent dinner was set out, not even lacking the elegant little adornments of grander occasions; for there were many bouquets of the prettiest flowers to be found in the city of Corrientes; and the American flag—considered an indispensable decoration in all foreign entertainments—was festooned between the columns of the patio at one end of the table, while that of the Argentine Confederation graced the other.

Toward the close of the dinner a deputation came and invited

me to look out upon the party in their enjoyment. I was in doubt as to the object of this call, but accepted the invitation, and found a chair ready for me at a little distance from the table. One of the company moved that Mr. Meredith should read the address. Mr. Meredith, a lad eighteen or nineteen years of age, from Baltimore, rose and from some sheets of foolscap read a speech, which would have been a little embarrassing—for, like the President of Paraguay at the ball of the Chief Justice, I was obliged to listen to my own praises—had I not been so much astonished at its admirable phraseology and style. I expressed gratification at seeing them thus rationally enjoying themselves, and retired. Then followed songs, toasts, and sentiments, which were unsparingly served out with wine and cigars.

On similar occasions in "high life," the "proprieties" could not have been more strictly observed; and there were "sentiments" indicative of good sense, wit, and intelligence, sometimes lacking at such festivities.

These men had been under my command for nearly two years, without a death or casualty. Some had been confided to me as "hard cases" by tearful mothers, who had always known a graceless "Hal" or "Bill" to mislead their Jack, who "had a good heart, but would be led astray;" and a "man-of-war" is considered an asylum for all such. But I must do them the justice to say that the conduct of this crew had been highly creditable, and to the end of the cruise—three years and five months—with one or two exceptions, all that could be desired.

The arrival of the Water Witch from Montevideo now expedited my movements. On board of her was Lieutenant Jeffers, who, on application to join the expedition, had been ordered by Commodore Salter to report to me.

One fact I must notice, to mark the progress of trade since the opening of the rivers. A vessel of the country arrived with a small lot of American pine boards and scantling, which was sold at 12½ cents the foot—the price I paid both here and at Asuncion per yard for sawing plank of native woods. This lumber had been shipped to Buenos Ayres from the United States, disposed of, purchased again, and re-shipped to Corrientes, where it sold for less than native lumber, paying at each change of hands a reasonable percentage. And yet timber is one of the export articles of this Province. Quebracho sells here, in stocks of eight inches square, at 75 cents to 87 cents the vara, or 25 to 29 cents

the foot. The operations of a steam saw-mill, nearly completed by an enterprising Frenchman, will do away with the old whip-saws now lining the beach.

I visited the *saladero* (slaughter-house) of an Englishman, which was just opened near the city, on the banks of the Parana, to witness the operation of converting cattle into jerked beef, hides, and tallow.

Each animal is brought up to the "bull-ring" by the lasso, pierced at the back of the head by a sharp-pointed knife, and rolled off on a rail-car, to be skinned. The corral was large and well stocked, Mr. Hughes having a few days before purchased from the southern part of the province a fine lot of cattle, for which he paid $9 the head, a threefold increase in price within a few years. In the Buenos Ayres market the hides were worth $6 50 each; the jerked beef—about 200 lbs. to the animal—$12; and the tallow—from 25 to 50 lbs.—about $3; the latter, intestines, bones, head, and feet, are thrown into immense wooden vats, and subjected for some time to steam pressure, which extracts nearly every particle of grease; it is then drawn off clean and put in hogsheads ready for shipping. The refuse of the vats is used for fuel.

On the 30th of January, the Taquari, a Paraguay steamer, half man-of-war, and half merchantman, with an armament of five medium 32-pounders, arrived at Corrientes; she received from the Water Witch the usual official visit and offer of service. This vessel was built in England, and purchased by General Lopez, son of the President, who had been on a general mission to several of the European Courts, and was now on his return to Asuncion, having crossed the Atlantic in her.

Hoping that the alterations in the small steamer would make her suitable for the exploration of the Salado, and intending to form there two parties, I detailed for the service all the surveying officers, with the exception of Lieutenant Jeffers. He was left in charge of the Water Witch, with instructions to ascend the Parana so far as the island Apipé, a distance of over one hundred miles from its juncture with the Paraguay, at which point there were supposed to be rapids—the first obstruction met with from the Capes of La Plata. Lieutenant Jeffers was instructed to determine their character. This short work, of a hundred miles or more, I felt assured could be accomplished before my return.

With Lieutenants Powell, Murdaugh, and Henry, Assistant

Surgeon Carter, Assistant Engineer Stump, and eighteen men, I left Corrientes on the 31st of January, 1855, for the Salado, expecting to encounter, from all I could learn, numerous inhospitable and daring bands of Indians. The performance of the Pilcomayo was miserable—worse than before the alterations were made in her. She was, in fact, worthless. This I had feared, and considered possible, and, as a reserve for surveying purposes, I had in tow two metallic boats. But I was not prepared for the new troubles that were brewing. The vials of President Lopez were not exhausted.

On the 3d of February, when we were about two hundred miles below Corrientes, the Water Witch hove in sight. What could be the matter? Speculation ran wild in our little boat. The suspense was soon over.

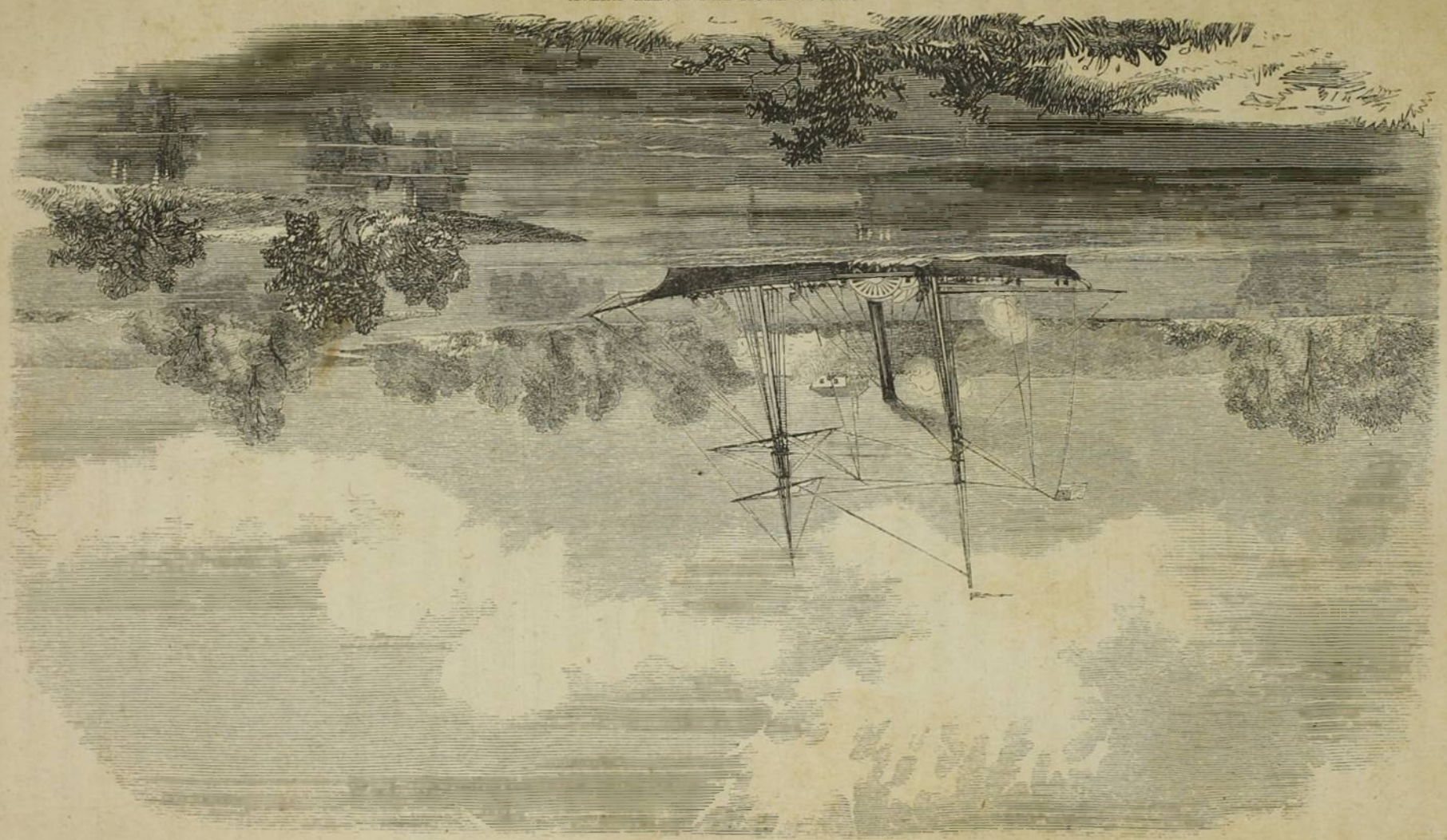
The Water Witch had been stopped in her ascent of the Parana; fired into from the Fort of Itapiru; the man at the helm killed, and the steamer slightly damaged in her hull. My feelings may be imagined at this outrage to our flag, while borne by a vessel under my command; for absence from her made me not less sensible to the insult. In a few words the tale was told. For a particular account of it, I append Lieutenant Jeffers's official report.*

The steamer had a native pilot on board, who was as well acquainted with the river as the wood-cutters of Apipé, or the orange-dealers along the shores of Corrientes usually are. Lieutenant Jeffers had advanced but a short distance above the junction of the Parana and Paraguay, plotting the work as he progressed, when, from very deep water, the vessel was run upon a sand-bank in six feet water, the lead at the gangway indicating no material change in the depth. While in the act of getting the steamer afloat, a boat came alongside from a fort on the Paraguay shore, where was a flag-staff, but no flag flying, and presented a paper to Lieutenant Jeffers, who returned it to the messenger, informing him that he did not read Spanish. This, with the substitution of the word "Spanish" for "English," was President Lopez's reply to my communication in behalf of Americans in Asuncion.

He observed some bustle and activity at the fort, and, to be prepared for any emergency, put the vessel in the best state of defense he could, but scarcely admitting even to himself the possibility of attack.

* See Appendix II.

ATTACK UPON THE WATER WITCH.



She was got afloat, and on asking the pilot where lay the channel, he unhesitatingly said that it was near the Paraguay shore; but he had supposed the river high enough to enable the Water Witch to pass over the shoals near the left bank, and made the attempt without informing the commanding officer.

The pilot, like many other Argentinos of the same class, looked upon Paraguay as a semi-civilized country, and was anxious to put a great distance between the Water Witch and Fort Itapiru. He was ordered to change the course of the vessel, and the nature of the work was again intelligibly explained to him, that he might understand the importance of keeping her in mid-channel, regardless of its vicinity to the Paraguay shore, or whether or not there was water enough outside of it.

I beg to call especial attention to the two drawings of the river at this point—the fancy sketch sent by President Lopez to our government and one from the actual survey. I do not hesitate to assert that they never would be recognized as representing the same locality. When the Water Witch was within close shot, two or three blank cartridges were fired from the fort in quick succession, followed by a *shot*. At what part of the vessel it was aimed I can only judge from President Lopez's dispatch to our State Department, where he magnanimously says it was directed so as to "pass ahead." If so, it struck wide of the mark, and was unfortunately effective; for it passed through the after port, cut away the wheel, and killed the helmsman. Lieutenant Jeffers had disregarded the blank cartridges, and up to this time had withheld his fire. Indeed, his means of defense, with three howitzers—one 24-pounder and two 12-pounders—were small against a brick or stone fort. But when this shot came, he returned it as rapidly as the reduced number of officers and crew and the disabled condition of the helm would admit. The accuracy of the fire was seen in cutting away the flag-staff and in the shrapnell grazing the low wall; for the guns were mounted *en barbette*. We learned afterward that several Paraguayans were killed; some reports said eleven, others fifteen. The Water Witch was struck ten times, but the first was the only shot that did any execution, though we learned that the firing from the fort was directed by a person formerly of the French navy, who had entered the service of Paraguay.

The pilot, very much alarmed, ran below; and during the shipping of the spare tiller the steamer drifted with the current

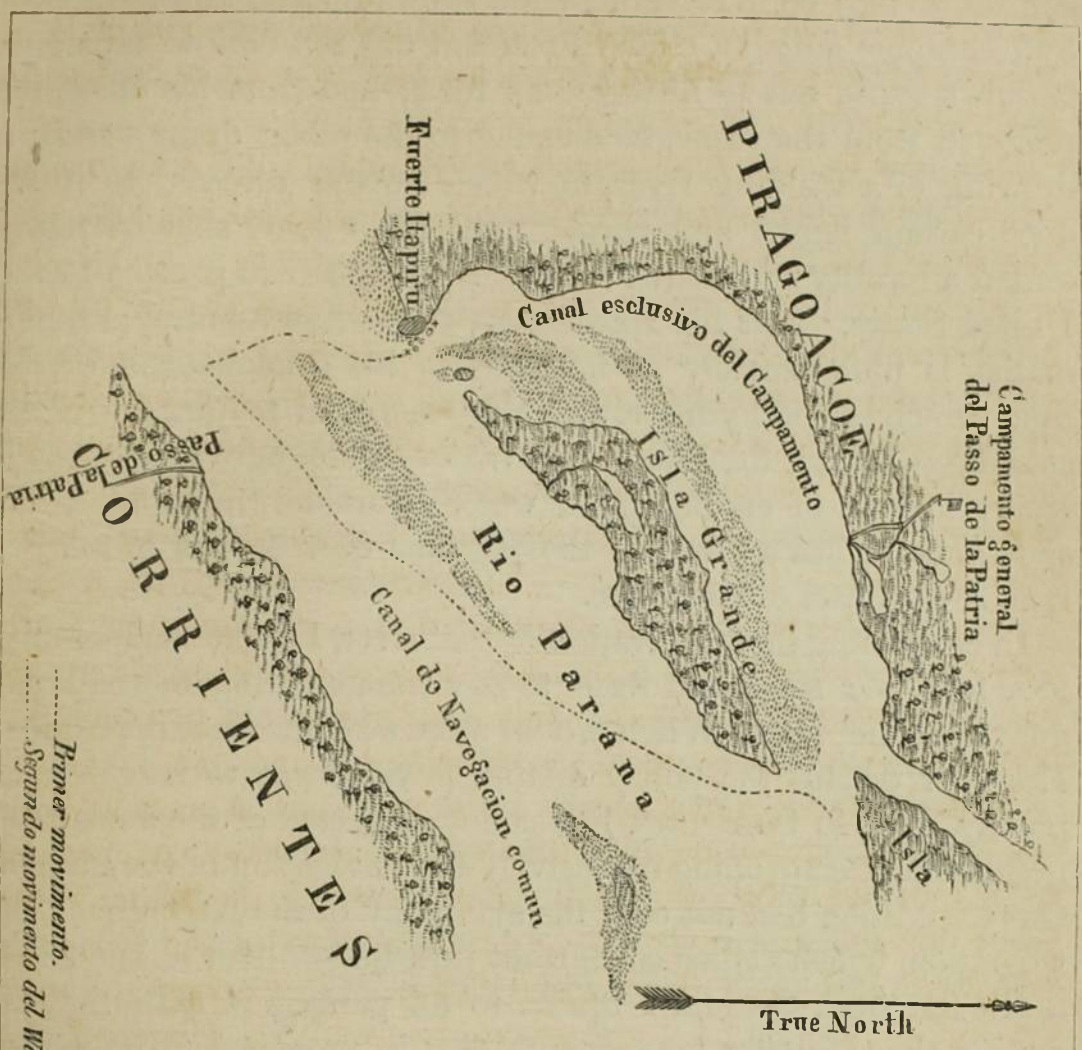
to the edge of the narrow channel into ten feet water. When hauled upon deck, he declared she would be aground if the attempt to proceed were persevered in, and insisted upon backing her down.

She had by this time passed all but one of the six guns, and would soon have been out of range, but, in backing, was again exposed to the fire of the fort.

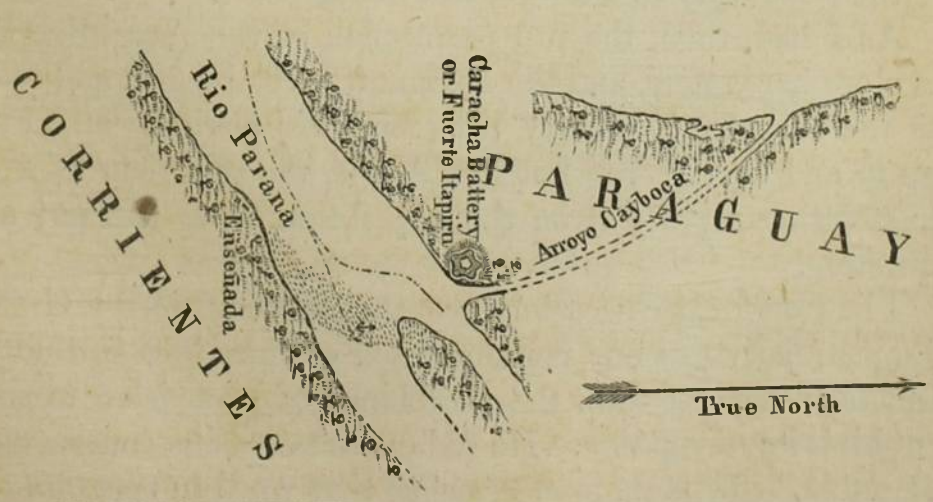
My first feeling of regret was that I had not, with the full complement of officers and crew, undertaken this corner of the work. Had it been so, this affair would never have taken place; for the detachment of officers and men from the Water Witch was doubtless as well known in Paraguay as to myself, and this hostile proceeding explained what had, I confess, claimed but a passing notice. For a day or two before our departure, a small Paraguay boat had been hovering about Corrientes, and as the Pilcomayo steamed off, this little craft passed close to us, and pulled rapidly up the river. She was doubtless a spy, and gave immediate information as to the division of our party.

That this outrage may appear in its true light, it must be borne in mind that the decree of the 3d of October, 1854, can not possibly be made to include those waters in which the Water Witch was when she was fired into. Indeed, no part of the River Parana is exclusively under the jurisdiction of Paraguay; and up to the fort Itapiru, and for one or two hundred miles beyond, that river is the common boundary between the Argentine Confederation (on the northern border of Corrientes) and Paraguay. The insult in itself is one that can not be tolerated; it is, however, eclipsed by the fraud which President Lopez attempts to impose upon the public through the columns of the *Seminario*, but, above all, in a dispatch to the United States government, inclosing a *fancy sketch* of the river, fort, and environs, representing the shots fired in defense by the Water Witch, after her helmsman was killed, as a hostile movement against the fort, and gravely requests that the officers in charge may be "*severely punished.*"

On the opposite page is a reduced copy of this sketch made by the order of President Lopez, and a true sketch of the River Parana, near the mouth of the Paraguay, from the chart of the Water Witch. The "fancy sketch" here offered is doubtless the work of a foreigner; for there is, I presume, not a native capable of making such a one, either from a survey or dictation; it was probably drawn by the ordnance officer of Itapiru, who, however



El Canal esclusivo del Campamento general del Passo de la Patria pertenece de costa à costa à la Republica, y cubre el Campamento, su transito está prohebido aun à los Buques mercantes Nacionales.



*Water Witch aground.
—Line on which the Water Witch was during the fire.*

*Primer movimiento.
Segundo movimiento del Water Witch.*

[*Scale 1 inch to the mile.*]

FANCY SKETCH OF LOPEZ.

TRUE SKETCH.

skillful he may be in directing shot, shows that he knows little of hydrographic surveys. The President did not care to represent Nature's work, but to illustrate an Idea; and from his office, far removed from the scene, he dictated to the pliant draughtsman a drawing of a winding river, in which he was directed to introduce certain banks and shoals, until the "fancy sketch" represented a locality to suit the "Idea" he intended to present to the United States. But his Excellency, though an admirable diplomatist, is unfortunately as ignorant as his draughtsman of the first principles of hydrography. He neglects to put down the soundings, to run the line of the Water Witch aground on sand-banks instead of ending it in water of unknown depth, or to show how he has arrived at the peculiar obstructions of the Parana at that part of its course.

In continuing the exploration of that river, I do not suppose the idea had ever suggested itself to any human being out of Paraguay that the Water Witch would meet with the least opposition. However defiant the policy of that government to neighboring powers, even in Corrientes, it was not suspected of the monstrous pretension of controlling exclusively the navigation of the Parana. Our expedition had not only the sympathy of the Argentine Confederation, which claims concurrent jurisdiction over it, but I had a circular from General Urquiza to all persons in authority, directing them to offer me every facility in prosecuting the work; and from Señor Pujol, the governor of Corrientes, I had received only the day before my departure, expressions of deep interest in our labors, and the anxious hope that the exploration would develop a channel practicable for all purposes of commerce, without making the slightest reference to the decree of October 3d, or to the possibility of Paraguayan interference.

As I had, then, the full permission of the Argentine States to explore her waters, and the Parana was established and recognized as the common boundary between their territory and Paraguay, up to and beyond the Falls of Apipé, the propriety of my course in ordering a party from the expedition there will not admit of question.

I had on former occasions repeated conversations with President Lopez relative to our contemplated explorations in that quarter, but he never let drop the semblance of pretension to control or prohibit its navigation. He did on one occasion congratulate "the Republic" (for he is fond of using that word in speaking of Para-

guay) that the "Salto Grande" (Falls of Guayra) was an insurmountable obstruction to the navigation of the river; and, as it was the first time that I had ever heard the idea advanced that an insurmountable obstacle to the navigation of a great river was a national blessing designed by Heaven, it made an impression upon me. I knew that he alluded to the much-feared encroachments of "Los Portugases," and looked to the Salto Grande as a bulwark against all attacks from that quarter.

As he does not presume to assert any entire jurisdiction over the river, it will naturally be asked on what grounds does he justify his act of firing into the Water Witch; for he admits that it was by his orders to the commander of Itapiru.

He says in his dispatch to our government, and in his message to the Congress of Paraguay,

"The Water Witch ascended the Parana by the channel that is common to the Republic and the Argentine Confederation; but, having stopped almost in front of Fort Itapiru, the commander observed that from that point the Americans seemed occupied in taking some measurements, and then proceeded on, through the same common channel, to beyond the general encampment at the Paso de la Patria, and nearly to the upper point of the Island 'Ceraya,' whence she returned through the same channel, passing below Itapiru, and, turning the point of the south bank, which here exists, took that which leads directly by the Fort Itapiru to the port of the general encampment," etc.*

This explanation answered his purpose perfectly in Paraguay, for he wished to prove that the Water Witch was seeking the Fort Itapiru, and not the main channel of the river; that she was bound on a fighting, and not an exploring expedition; but he should have made out a stronger case; should have added a few more operations—it matters not what—to complete the romance. His after-mistake was a great one, in repeating the same statements to the Government of the United States.

It is needless to explain that the value of a survey depends

* Extract from President Lopez's Message, 14th March, 1857.

"El 1 de Febrero de 1855, predicho Vapor Water Witch subio al Parana por el Canal comun de la Republica y de la Confederacion Argentina, pero habiendose detenido casi en fronte de la fortaleza de Itapiru, observa el Commandante de ese puerto que los Americanos paracien ocuparse en tomar algunas dimenciones, y luego seguieron por el mismo canal comun hasta mas ariba del campamento general del paso de la Patria, y casi hasta la punta superior de la Isla de Caryá, de donde vulvio á bajar por el mismo canal hasta mas abajo de Itapiru, y volviendo la punta de arena del banco qui alli existe, tomo el que conduce por la misma fortaleza de Itapiru al puerto del espresado campamento general."

upon its accuracy, and the course, depth, current of the Parana channel could alone be determined by the Water Witch's entering it. She had a pilot who attempted to pass up near the Corrientes shore, in what President Lopez designates as the *Canal Comun* ("Common Channel"), and there ran aground. Is it reasonable to suppose that, had there been a channel on that side, the frightened pilot would have sought the other, of which he seems to have had a great dread? and when asked "where lay the main channel," would he immediately have pointed to that which led to the "General Encampment," instead of the *Canal Comun?*

Suppose there had been more than one channel—and the pilot, who should have known, said there was not, for he certainly made the effort to find another way—how would this have justified the attack? If the river is a common highway for the two countries, the whole of it is common throughout the extent of the territories. It is not a highway if President Lopez appropriate the available channel, where alone a vessel can pass up, and say, "You shall not come on my side of the river."

As to the actual course and distance made by the Water Witch, the accompanying "real sketch" will show; and until informed upon what data President Lopez constructed his chart, or until he produces the observations made by his surveyor on shore, to determine the track of the Water Witch, and establish beyond doubt the superior accuracy of his work to ours by a fair comparison, I must pronounce one a "fancy sketch," the other a reliable piece of "track survey."

The President of Paraguay was evidently alarmed in anticipation of retaliation for this insult, and thundered forth in his little weekly organ, the *Seminario.* Its articles, intended to impose upon the credulity of Paraguayans, generally excite much amusement in La Plata. Personal attacks upon myself—the burden of its editorials since the removal of the Americans—I did not notice, for I rather suspected that his Excellency wished to draw me into a paper war. But when, awakened to a sense of the enormity of his act, as one utterly in defiance of the law of nations, he attempted its justification by boldly claiming jurisdiction over the main channel of the Parana because it ran near his shores, and when he endeavored to make it appear that the Water Witch, in entering it, had violated a national right, I determined to expose this evasion or misinterpretation of every principle of international law, and in one of the leading papers

of Buenos Ayres gave a statement of the position of the steamer when fired upon, and quoted fully from Wheaton on the "Law of Nations." From my references in that article, I here insert one paragraph to show the extent to which rights under a common boundary are very fully recognized.

"It was a principle that the right to a thing gives a right to the means without which it could not be used; that is to say, that the means follow the end. Thus a right to navigate a river draws to it a right to moor vessels to its shores, to land on them in cases of distress, or for other necessary purposes, etc., etc. This principle was founded in natural reason, was evidenced by the common rule of mankind, and declared by the writers before quoted."*—P. 357.

I have stated that I was overtaken by the Water Witch two hundred miles below Corrientes. The information she brought disturbed all my plans for the immediate exploration of the Salado, for I could not rest quietly under this insult to our national honor; and as the steamer was slightly disabled, and her armament not such as could enable me to act effectively and surely against a fort of six guns, I determined to proceed to Buenos Ayres or Montevideo, in the hope of procuring from a ship of our squadron two large shell guns, which would enable me to return.

On arriving at Parana, we found at anchor quite an imposing Brazilian squadron, consisting of eight steamers—the *Amazon*, the admiral's flag-ship, three sloops of war, and eleven transports, bound for Paraguay. Such a demonstration from Brazil had been for some months anticipated, not only to settle the question of boundary, but to open a way, by the Paraguay, to Cuyaba. This mode of backing negotiation by a squadron is, it seems, not confined to England at this day; and, however much it may be looked upon as an act to intimidate, it must be resorted to in dealing with governments that can not be reasoned into an observance of the rights of nations.

I hastened to Buenos Ayres. A great disappointment awaited me: but three days before the Germantown had sailed for Rio Janeiro. I had been buoyed up with the hope of meeting this particular ship. Her commander, Captain Lynch, is an officer who would, I knew, fully sympathize with me in a sense of the outrage to our flag, and afford me every assistance in his power to avenge the wrong.

I proceeded to Montevideo, and finding there an American clip-

* The principal writers on national law.

per bound for Rio, dispatched Lieutenant Powell with a report of the affair to the commander of the squadron, Commodore W. D. Salter, and with an earnest appeal for aid. I begged that he would order the Germantown to Paraguay;* and at the same time sent a report of the attack to the Secretary of the Navy and to the minister resident at Buenos Ayres.†

On the 19th the Germantown arrived off Montevideo, bound for Buenos Ayres, but with no satisfactory reply from the Commodore, except that he would sail soon for La Plata.

I here quote from my journal:

"31*st March*, 1854. The Savannah, flag-ship, has arrived. I immediately visited the Commodore, and informed him I was ready, and the Water Witch was in order for any service he might desire of me (alluding to her towing the Germantown up the Parana); or, if he had no other work for me, would proceed to the Uruguay. I still hoped there was more important service, for I was unwilling to believe that this outrage could long be suffered to go unnoticed. He desired me to remain for a few days, as he wished to confer with our resident minister at Buenos Ayres.

"*April 5th.* Have had a conversation with the Commodore since my visit of the 31st, and urged the propriety of sending the Germantown up, towed by the Water Witch, to knock down Itapiru."

Captain Lynch, in a noble, generous spirit, which I fully appreciate, had proposed to the Commodore to take the Germantown up, or relinquish the command of the ship to me for that purpose.

"*April 6th.* Again called on the Commodore; found him in close conversation with Mr. Peden—as I supposed, about the Paraguay affair. I left immediately."

"*April 8th.* Called again on the Commodore to know his determination about my towing up the Germantown. He said, 'I

* Extract from report to Commodore Salter:

"The Water Witch, with the Germantown or a brig in tow, will be amply sufficient to inflict such punishment on Paraguay as the insult demands—not only knock down the fort, but capture the squadron also. Should additional steam power be required in towing, it can easily be obtained here. The more promptly this is done, the more easily and effectually it may be done.

"I can not express to you how deeply I regret not finding either yourself or Captain Lynch here. I shall proceed to take in coals, and have some slight repairs to the engine, hoping for your arrival meantime."

† Mr. Pendleton had been recalled, and this place was filled by Mr. Peden, of Florida.

can not move in this matter. The affair is referred to the government, and I shall await instructions.' I then said, 'Will you, Sir, supply the Water Witch with two large guns, either from the Savannah or the Germantown? I desire to return and carry on the work, but I do not feel justified in doing so with the steamer in her present defenseless state. He said, 'No, there are other fields for the expedition, and you had better not return to that part of the river until instructions are received from home.'

"The Commodore and minister have been in conference. It was a labor that brought forth nothing."

This was to me a bitter disappointment and mortification. I clearly saw that the Commodore had assumed a responsibility in not acting of far greater magnitude than if he had pursued the most vigorous and decisive measures. It was evident to me that the responsibility lay in doing nothing.

If a national vessel is fired into, unless the mistake is manifest, for the honor of the flag and the credit of her commander, the fire must be returned. The beautiful Christian precept of turning the left cheek when the right is smitten, is not observed, and perhaps not understood in national intercourse. If a man receives a blow, he rarely folds his arms and waits for explanation: he returns the blow; and if in the wrong, he will discover it in proper time, and make amends.

The fort of Itapiru ought to have been knocked down, and we should now be even with the Paraguay government. I begged but for two guns, and I would have pledged my life in the effort.

There were neither women, children, nor property of peaceful citizens or foreigners to be injured, or involve us in endless negotiation for reclamation.

It was a difficulty for the Commodore, and for him alone, to settle. A consultation with the minister was all well enough; he is generally presumed to be a person of standing at home, and competent abroad to advise in such an emergency; but conferences can never shift responsibility. The obligations and duties of a United States legation and a United States squadron are not blended, neither can they possibly conflict. Each is alone answerable to the government for a proper performance of its respective duties.

To refer the matter home was an effectual way of getting rid

of, or of indefinitely postponing it. There are extraordinary occasions, and I consider this one, where the authority of a commander on a foreign station exceeds even that of the Executive Department.

He has the right, the power, and it is his duty to resent and avenge all and every outrage committed upon American vessels within the limits of his station. How much more must he feel the necessity of exercising this power when a vessel of his own squadron has been insulted. He is not merely to report occurrences, and await answers, but is presumed to possess some natural ability—some knowledge of the law of nations, and some sense of honor, blended with a discretion which will enable him to assume the responsibility of evident duty.

Paraguay was not considered a territory occupied by wild Indians, or as a den of pirates. We had negotiated a treaty of friendship and commerce with her, and that treaty had been ratified by our Senate.* To order the Commodore to proceed there and chastise her would have been making war upon a republic recognized as belonging to the family of nations, and this is a power which the Executive does not possess. When the egregious mistake is made of supposing one's duty fully discharged by merely reporting outrages to the Department, we embarrass its movements. An officer can prevent this by avenging at the moment all insults, without placing the Executive in the humiliating position of bearing them passively until an appeal can be made to Congress for powers to act.

I have no desire to criticise or censure the course of the Commodore, but it is due to myself and to the navy to make a full statement of this affair.

Had the Water Witch been in error, which can not be sustained by the most specious arguments, how could it justify this insult to our flag? It is clear she meditated no attack, assumed no threatening attitude, and did not fire a gun until the evidence of a shot from the fort showed itself in cutting down one of her crew and carrying away her wheel. Was the officer in charge to submit to this? It is no justification of the act to say that blank cartridges were fired and a message from the fort delivered alongside, for we do not recognize the right of Paraguay to control the explorations of that river. The prohibition of her President was an unwarrantable assumption of power, and its enforcement by a shot, in every way that we can view it, a gross outrage.

* The Paraguay government subsequently refused the exchange of ratification.

I had taken some trouble to inform myself, from every available source, of the rights, exclusive and concurrent, over the navigation of the rivers of La Plata, because I studiously designed to keep the expedition aloof from any semblance of interference in the differences of neighboring powers; and it entered those waters only where the jurisdiction of the government granting permission was unquestioned.

I believe I understand President Lopez well enough to say that, had he received at the proper time a spirited rebuke, had Itapiru been knocked down or his squadron captured, we should now be on the best possible terms. He would not, a year later, have met our special commissioner on the threshold of his mission by demanding to be informed what resolution this government had made to give satisfaction for the outrages and hostilities committed by the commander of the Water Witch, "in order to see if the case was such as to justify the exchange of ratification of the treaty of the 4th of March, 1853, and to this intent you will be pleased to reply to this note."*

In an official dispatch to our Secretary of State, dated Asuncion, November 29th, 1856, Señor Vasquez says:

"His Excellency, President Lopez, will be found well disposed to renew the negotiation of a treaty of friendship, commerce, and navigation, so soon as his Excellency the President of the United States may desire to send to this city a Plenipotentiary with suitable instructions, which will afford an appropriate occasion to settle the questions I have cited to the Señor Commissioner in my note of the 8th of this month."†

Again, in the correspondence of the Minister of Foreign Relations, Señor Nicholas Vasquez, with our special commissioner, Mr. Richard Fitzpatrick, under date Asuncion, November 26th, 1856:

"His Excellency the President of the Republic ratified fully and completely on the 12th of March, 1853, with the consent of his Council of

* Extract of note from Secretary Vasquez to Commissioner Fitzpatrick, November 8th, 1856:

"Para ver si es llegado el caso de verificar lisa y llanamente el cange de las ratificaciones del Tradado de 4 Marzo de 1853, y al efecto se servira U. S. responder á esta nota."

† "Que S. E. se halla en la major disposicion de renovar la negociacion da un Tratado de amistad, commercio, y navigacion, desde que el Exmo. Señor Presidente de los Estados Unidos quiera enviar efecto á esta Ciudad un Plenipotenciario, con instrucciones convenientes; y que contal oportunidad se podrá definir las questiones pendientes que he citado a S. S. en la citada nota des 8 de este mes."

State, the treaty referred to of the 4th of March, as I explained to you at our official interview, and in this aspect it is not possible for his Excellency the President of the Republic to submit to a new ratification on the terms you propose; and in this view of the question I inform you of the receipt of your note of the 18th, reaffirming mine of the 15th, and closing the correspondence."*

I remained but a few days at Buenos Ayres, to obtain a verification of the chronometer before entering the Uruguay, but kept the Commodore advised by letter of the state of the Parana. I was enabled to show him that the river had continued to rise since I descended it in February, and at that time there was not less than sixteen feet of water over the worst passes. I was resolved that he should entertain no doubts as to the practicability of having the Germantown towed up from a want of water; and in my last note to him from Buenos Ayres, dated April 20th, 1855, I say: "I yesterday learned from an acquaintance from La Paz . . . . . that the Parana is very high, there being four fathoms of water at this time on the worst shoals."

Previously, at his own request, I had given him a statement, not simply as to the condition of the river at the present season, but details as to its periodical changes.

CHAPTER XVIII.

Island of Martin Garcia.—Pass of San Juan.—Town of Higueritas.—The Brasso Bravo.—Rio Negro.—The Gualaguaychu.—Concepcion.—Frey Bentos.—Fine Pasturage.—Herds of Cattle.—Arrival at Concepcion.—College.—Saladeros.—Town of Paisandu.—An Englishman's Estancia.—Current of the River.—Palm Forests of Entre Rios.—The Arroyo Grande.—Paso Héredera.—Town of Concordia.—Trade.—Salto.—The Salto Grande.—Killing a Partridge.—Rise of Water.—Tide.—Track Survey of the Rio Negro.—Town of Soriana.—Mercedes.—Sarsaparilla.—Fossil Remains.—Megatherium and Glyptodon.—Health of this Region of Country.—Cattle and Estancias.

On the 24th of April, 1855, we left the inner roads of Buenos Ayres, and, passing through the shipping in the outer roads, stood

* "El Exmo. Señor Presidente de la Republica ha notificado lisa y llanamente el 12 de Marzo de 1853, con dictamen de su consejo de Estado, el Tratado referido de 4 del propio Marzo, como he manifestado á U. S. en nuestra conferencia oficial, y en esta positura no es dable que S. E. el Sr. Presidente de la Republica se someta á nueva ratificacion en los terminos que U. S. el presente aviso de racibo de su nota referida del 18, reproduciendo mi anterior del 15, y dando por cerrada esta correspondencia."

for the entrance to the Martin Garcia Channel. I quote from my journal of this date:

"Steered a N.E. course per compass from the man-of-war anchorage, carrying not less than fifteen feet water, until the high lands of San Juan (on the Banda Oriental side) were made on the same bearing, and with Martin Garcia N.W. by W.; a single ombu south of San Juan, E.N.E., and two ombus near Colonia, E.S.E. We passed the bar of San Juan with not less than fourteen feet of water, although I am confident we were not in the channel, as the pilot also thought."

In returning, after having completed the survey of the Uruguay, I find the following entry in my journal:

"Left the island Martin Garcia, having obtained all the required observations, and when the high lands of San Juan bore N. 42° E., and Martin Garcia N. 60° W., stood across the bank, steering S.S.W., to the outer roads of Buenos Ayres; least water at low tide ten feet. Martin Garcia was plainly in sight, distant about twelve miles, where the course was shaped for the outer roads."

The bank here alluded to is that immense shoal between the Palma Pass and the Guazu, formed by the gradual accretion of alluvial matter brought down by the branches into which the Parana is divided by the numerous islands forming its delta. It extends from the base of the delta south and east, gradually diminishing and the depth of water increasing, until it is lost in the main channel of La Plata. The new channel discovered in our work gives a greater depth, by two feet, into the Parana and Uruguay, showing that sixteen feet water may be carried into either of those rivers, over the bar of San Juan, at the ordinary low state of the tide. By tidal observations, made at Martin Garcia during the month of August, 1855, the ordinary rise was two to three feet; that produced by the wind at southeast, when not blowing fresh, varied from three to four feet.

"Anchored at Higueritas, about four hundred yards from the shore, in fifteen feet of water. This little town in the Banda Oriental is the first met with on entering the Uruguay. It stands half a mile inland, upon a ridge that slopes to the plain bordering the river. The shore line is crescent-shaped, the horns protecting the anchorage from those southeast winds which often delay for months the discharge and loading of vessels at Buenos Ayres. Cabot entered the mouth of the Uruguay, and may have been deterred from forming any settlement upon its banks by the fero-

cious character of the Indians, who massacred a boat party that had, under the command of Alvarez Ramon, ascended some distance; but in recognizing the superior advantages of Higueritas as a port, we wonder that it should have escaped the keen eye of De Garay when seeking the site of a commercial town near the Atlantic. The anchorage is open from S.W. to N.W., the width of the river, and its waters could be agitated by no sea that would delay the dispatch of vessels. Within the bar of San Juan the depth varies from three to ten fathoms, and off this place, at a distance of from three hundred yards to three quarters of a mile, from two to six fathoms, with a gradual inclination of the bottom to the shore. In the neighborhood are fine granite quarries, from which exhaustless supplies of building material could be obtained. The Braso Bravo, one of the branches of the Parana, which is equally navigable with the Guazu, empties into the Uruguay directly opposite Higueritas, and the Braso Largo, another arm, a little above. This river is the dividing line between the Banda Oriental and Entre Rios, and the aspect of the country upon the right and the left presents for some distance in ascending a striking contrast. The shores on the left rise precipitously from the water, and the interior country, so far as the eye can reach, is a series of grassy undulations clear of wood. The right banks are low and wooded. As we advance, the bright green turf lands of Entre Rios gradually rise from the very margin of the river some sixty feet, the general elevation of the country. On the left the banks of the Uruguay and its small tributary streams from the Banda Oriental are skirted with quebracho, urunday, etc., while clumps of espinilla give a park-like appearance to the interior country."

The width of the river varies from four to seven miles; its waters are turbid, and the channel not so well defined as that of the Parana; but there is ample depth for the Water Witch. The first affluent of any importance is the Rio Negro, which rises in the interior of the Banda Oriental, and empties by several arms into the Uruguay, the vast expanse of which is here interrupted by low wooded islands: Islas Boca, Falsa, Rondo, Lobos, Jaguar, Jaguar Chico, and Biscaino.

Twelve miles above Rio Negro, the Gualaguaychu empties into the Uruguay from the right; opposite, and six miles distant—the width of the river at this point—is Frey Bentos, an anchorage for all large vessels engaged in the trade of Concepcion del Uruguay

and the town of Gualaguaychu, which latter is situated on the right bank of a stream of the same name, and nine miles above its mouth. Vessels of considerable size can go up to Concepcion, but they drop down here to complete cargo.

Nine feet can be carried within a mile of the mouth of the Gualaguaychu, but at this point is encountered a bar over which there is but six feet at low water, and from eight and a half to nine at high. This depth may be carried up to the town, which, as the centre of a rich grazing state, must become—indeed is—a place of commercial activity, notwithstanding the inconvenience of transhipment, fifteen miles from the port. Its exports—hides, tallow, jerked beef, and bone manure, are brought down to Frey Bentos in large sail-boats and small-decked craft. In 1849 it contained but 7000 inhabitants, but under the benign influence of constitutional government its population and trade have increased a hundred per cent. Two years have elapsed since my first visit, and I not only find its extent doubled, by new squares and streets, but the public and private buildings are handsome and substantial structures. Among them are a government house, theatre, and a private dwelling for General Urquiza. American pine lumber, now extensively used in the growing towns on the Parana, is also in demand here.

Settlers are availing themselves of the liberal policy which governs the distribution or sale of public lands. The payment of a few shillings for recording the title will secure a fine *chacra* (farm), or even lots within the limits of a town, with the sole obligation that the receiver shall occupy it himself, or by proxy, if a town lot; or if a farm, inclose it within six months.

The territory of this department extends from the Gualaguay River—coasting the Parana, to its entrance into the Uruguay, thence along the river to the Gualaguaychu, embracing ten judicial districts. Independent of its foreign commerce, which is steadily increasing, it has considerable trade with Buenos Ayres and Montevideo. This is carried on in vessels of light draught. The discriminating duties, recently imposed by the Argentine government upon interior trade, will necessarily induce foreign ships to its ports. This will prove a great gain to both buyer and seller. The estimated amount of exports from Gualaguaychu for the year 1851 was $447,273; and that of imports $179,929.

Ascending from Frey Bentos, the course of the river changes from north to east, washing on two sides the Rincon de Gallinas

—a corner of Banda Oriental, embracing many square leagues, and almost insulated by the Rio Negro and the Uruguay. It is entirely unoccupied, except by the huts of a few woodmen, who pay a small sum for the privilege of cutting its espinilla for the Buenos Ayres market, and yet it presents one of the most desirable points on this river for the establishment of estancias. A fence across the narrow neck, connecting it with the main land, would effectually prevent one of the embarrassments complained of by the estancieros—the straying of young cattle before they have received their "mark." Its verdant ridges afford extended views of land and water, and would be beautiful sites for dwellings.

Between Frey Bentos and Concepcion—a distance by the course of the river of 50 miles—the lands of Entre Rios, where seen from the channel, were undulating, ranging some 50 or 60 feet above the river. The pasturage was fine, and herds of cattle, droves of horses, and flocks of sheep covered its green slopes. The view of the main land was sometimes intercepted entirely by high islands, many of them covered by a dense but indifferent vegetation; others had a large number of peach-trees; willows abounded, and, in the absence of better wood, are burned for charcoal.

We left the main channel, which continues near the shores of the Banda Oriental, to test the practicability of one between the islands Bopigua and Laguna. Though contracted, it is perfectly safe and unobstructed. We entered a riacho, and passing the mouth of the Arroyo da China, upon which stream is established a vast saladero, we anchored off Concepcion.

Our reception now—as on a former occasion, when I visited this town with Messrs. Pendleton and Schenck—was extremely flattering, and showed that the services of the Water Witch were remembered gratefully. Beef and vegetables were sent by the authorities for the use of the crew, and every possible courtesy was extended to the officers. Among other civilities we received and accepted an invitation to a ball given in celebration of the anniversary of Urquiza's proclamation against Rosas in 1851.

Concepcion has 5000 inhabitants, and is prettily situated on high land, about half a mile from the river. I have before alluded to its primary school and college, established by Urquiza. Both these institutions were at this time in the most flourishing condition. General Urquiza is a native of Entre Rios, resides much at San José,* and takes great interest in the growth and

* The estancia visited by me in 1853.

prosperity of this place. It is the principal town in the Uruguay Department, which comprehends five judicial districts, and embraces all the territory from the Gualaguaychu, coasting the Uruguay River, to the Arroyo Grande.

The saladero at the mouth of the Arroyo da China is conducted on a vast scale. At the shipping season, when the establishment is in full operation, they slaughter, salt up, stow away the beef, hides, and try out the tallow of five hundred head of cattle per day. The arroyo is deep, and there were at the time of our visit three vessels—a bark, and two brigs of two and three hundred tons burden—lying close to the shore. Two of them were taking in cargoes of hides and tallow, while the third was loading with horns, bones, and bone-ashes for England. The economy of the establishment was perfect. Parts formerly thrown away—entrails and carcasses—are now subjected to a steam pressure, by which every particle of fatty matter is extracted; the residue is dried as fuel for the furnaces; the ashes of this fuel are shipped for England, and there greatly valued for fertilizing purposes. They told me at this saladero, that notwithstanding the fine appearance of the Entre Rios cattle, those of the Banda Oriental, bordering the Uruguay, were superior, and with this remarkable difference that hides from animals of the same size weighed several pounds more.

"Nineteen miles above Concepcion is Paisandu, a town of 2388 souls, and the only one on the Banda Oriental shores since leaving Higueritas, distant 130 miles. It is a forlorn, dilapidated place. The houses are deserted, the gardens overgrown with weeds—the marks of civil war, from which that state had just been delivered. The grass of the surrounding country is good, but the number of cattle is greatly diminished. Not a tree or sign of cultivation meets the eye. Statistics of this department rate the cattle at 350,000; horses, 3060; sheep, 56,000; hogs, 1558; jackasses, 2000; and a few goats. There are 134 pastoral establishments (*establicimentos de pastora*), two of which formerly furnished as many cattle as can now be found in the whole department. The population of this district, exclusive of that of the town, is 3859. A few miles above Paisandu is the Saladero Madelaso, where a large number of mares are slaughtered annually.

"In the Banda Oriental a series of grassy ridges run parallel with the river, and upon them are several quintas; near one is a

field of wheat. The interior country is open, with clumps of mimosæ. Friable limestone abounds. On the opposite side, in Entre Rios, the river is skirted by a dense growth of wood; and near the mouth of the Arroyo San Francisco, which there empties into the Uruguay, is a lime-kiln, the stone for which is found in the immediate neighborhood.

"Anchored 25 miles above Paisandu, off the estancia of an Englishman. Quantities of espinilla are cut and corded for the Buenos Ayres market. The site of Mr. Campbell's dwelling is well chosen, and, before learning the name of the owner, I knew, from the appearance of a fine vegetable garden, that it must be the property of a foreigner. There was, however, even here, no other cultivation; for cattle-breeding is so easy, rapid, and certain a road to fortune, that foreigners, like the natives of the country, overlook the productive capabilities of the soil. This estancia contains five square leagues, and has the desiderata of a cattle-farm, fine pasturage, and abundance of water, being intersected by several arroyos. A few years since it was purchased for $17,000; it had then 16,000 head of cattle, and now, with 18,000, it is valued at $60,000. This shows a considerable increase in the price of cattle, for the land, when stocked, is rated at nothing.

"The current is here two knots, and increasing as we go upward; the least depth of water so far is 13 feet; shoals, where they exist, are sand, or sand and gravel.

"Above Estancia Campbell a belt of wood follows the course of the river on both shores, and inland are seen clumps of mimosæ. The grass of the Banda Oriental is of a deeper hue than that of the opposite state, which, from the character of its soil—light and sandy—is more affected by drought.

"Three miles above this estancia is the Arroyo Palma; on the right, palmæ; on the left, espinilla.

"Vuelta San José, Campo San José—upon it a fine stone corral, made by the Brazilians during their invasion of the Banda. The palm forests of Entre Rios are dense, and the ground beneath is carpeted with a turf of bright green. Herds and flocks on that side are always in sight. These quiet pastoral landscapes are very beautiful, and we all have stocked estancias and built a hundred air castles upon the verdant ridges. I never knew a sailor whose snug harbor, after the toils and dangers of a sea-life were over, was not a farm, and here it may be had without the desideratum in older countries—money.

"Arroyo Grande, the dividing line between the departments Uruguay and Concordia, empties from the right bank opposite the island Guaviu. This stream is skirted by fine timber, quebracho, etc. A quarter of a mile above, another stream, the Arroyo Chapiqui Chico, flows into the Uruguay from the same side. At this point the palm plains of Entre Rios terminate seventy-five miles above Paisandu. Rocks on both sides contract the channel, making a narrow and intricate pass, known as the Paso Heredero. On the left a saladero, and above, another estancia owned by Mr. Campbell; it is stocked with a small herd of cattle and 30,000 sheep.

"Twenty-five miles above Heredero Reef anchored off Concordia in 22 feet of water. This town, of 2500 inhabitants, dates its existence from 1831, and is the capital of a department of the same name, which extends from the Arroyo Grande to Mocorita, and comprehends ten judicial districts. It boasts a flourishing free-school, established in 1847 by Urquiza. In consequence of the obstruction to navigation offered by the Salto Grande, twenty miles above this, Concordia is the last town in Entre Rios from which an uninterrupted river communication may be maintained with the cities of the Parana and La Plata. As the shipping port for the *missiones* and a vast interior country, it has considerable trade. The principal exports are hides, tallow, and yerba. In 1850 there was received here, *in transitu* for other places, among a variety of articles, the following: 10,624 tercias* of yerba, 1694 arobas of wool, 1070 cheeses of 6 lbs. each, 2643 fanegas† of salt, 132 pipes and 54 barrels of tallow and beef grease, 1962 arobas of horse-hair, 1300 arobas and 164 barrels of rice, 17,272 dry hides of cattle, 2289 ditto salted, 2109 hides of mares, 1506 quintals of jerked beef.

"Three miles above, on the opposite shore, which rises sixty feet above the level of the river, stands Salto, the principal town of a department of the same name. It is rather a bustling place of 2800 inhabitants, and the last port on the Oriental side before reaching the fall. Between Concordia and Salto, a little above the anchorage of the first place, is a rocky ledge, Coralitas, which endangers the navigation somewhat; but between its projecting rocks there is sufficient width and depth, even at low water, for any steamer or vessel that may ascend the river—that is, from

* *Tercias*, the hide sacks in which yerba is packed, containing 8 arobas of 25 lbs. each.

† *A fanega*, 2½ bushels.

six to seven feet could be carried with safety to Salto. The least depth we have named continues but a short time, and even up to this point is increased by south winds.

"The exports of Salto would be limited to a few hides and a small quantity of tallow but for the products of the interior country, which are transported from Uruguayana and other Brazilian towns in *carretas* (ox wagons). Thirty thousand arobas of yerba are shipped annually, but it is inferior to the Paraguay leaf. This department has suffered much from the wars that have afflicted this unfortunate country, and has now, including the city, but a population of 7364 souls. Statistics give the following as its stock in 1852: 262,000 head of cattle, 17,000 horses, 25,000 mares, 500 mules, 4000 hogs, 113,000 sheep. There are now 404 pastoral establishments.

"Though the navigation of the Upper Uruguay is a question of vital importance to the inhabitants upon its borders, I can obtain no information as to the condition of the water upon the great falls, and can only guess, from a variety of contradictory statements, that vessels of light draught may pass over them during the months of October and November. The passage, even during those months, must be difficult, if not dangerous, on account of the rapidity of the current. An attempt was made in a small steamer a year or two since, and in the failure, from lack of power in the boat, she was near being lost.

"Judging from all that I see and hear, the river is too low to pass over the *Salto Chico* (Little Fall), at this time with the Water Witch."

I engaged a boat, and proceeded to examine the *Salto Grande*. To avoid the current as much as possible, we kept near the Entre Rios shore, intending to return by the channel. After a pull of five hours we reached the Salto, a picturesque spot, but misnamed a fall. There is no one great perpendicular descent, but for about one third of a mile the river from shore to shore presents a foaming surface, broken by verdant islets and innumerable rocks of a reddish sandstone, over and through which the waters dash with inconceivable force. The rocks are of every shape and size. Some rise smooth and rounded for several feet above the water; others project sharply, presenting the most fantastic shapes. The rush and roar of this mighty river, boiling and foaming through its green pastoral banks, was a magnificent spectacle. The banks on both sides rise some thirty or forty feet above it, and are skirt-

ed with indifferent wood, but the want of a nobler vegetation is supplied by the luxuriance of a number of climbing plants. The humid atmosphere was redolent with their delicious odor, and the eye was charmed by the beauty of the white trumpet-shaped flowers of an epiphyte that encircled the trunks and covered the limbs of every dead tree, as if all association of decay must be banished from the imposing features of nature here presented. We found a river craft, snugly moored out of the influence of currents, at the mouth of a small arroyo, where it was quietly awaiting a rise of the waters. The skipper seemed to be philosophically indifferent as to whether this would occur in a week or year; he thought release was possible in one month by the transient rise in June. From that time the Uruguay fluctuates until October, and in November has attained its maximum, after which it falls rapidly. There must yet be a rise of twenty feet to allow the ascent of vessels of the draught of the Water Witch.

I went on shore with my gun; saw deer, capinchas, and many partridges. Nothing could exceed the amazement of the pilot when I brought down one of these last. He looked at the fluttering bird, then at me, exclaiming, "I have never seen any thing to equal that."*

In descending through the channel, the least depth of water was ten feet on the Salto Chico; width of river from a half to three quarters of a mile. Physical features of the country on both sides unchanged—rolling grass lands. We made, in descending, the same distance in two hours through which it had taken five to ascend. I found that the river had fallen fifteen inches in twenty-six hours. It is a little above its ordinary level, which accounts for this rapid decrease.

"Descending, anchored off Concepcion, that we might obtain observations of comparison for the chronometers in connection with those made during our ascent.

"Stopped off Mr. Campbell's estancia to purchase espinilla for ship's use. This wood, sawed and split into pieces of twelve inches by four, cost half a cent each stick, of which there were about 1600 in a cord, making $8 per cord. Purchased a beeve, for which we paid $10, without the hide. Mr. Campbell says that the interior streams are bordered by valuable woods, such as quebracho, curupay, nandubay, etc.

* The partridge is caught in this country with the lasso, or a small running noose.

"I regret that we have no time to examine the neighboring plains, which are particularly interesting from the number and character of fossils that have been recently disimbedded from them. One—an osseous-armored animal, found six feet below the surface in the banks of a neighboring arroyo—must, I think, from Mr. Campbell's description, be a gigantic prototype of the armadillo. I hope, before leaving La Plata, to be able to give some attention to this subject; but the more important objects of the expedition must first be carried out.

"Anchored off Frey Bentos; or rather, unintentionally, laid the Water Witch on a mud-bank, by leaving the channel to make a detailed survey in crossing from the Banda Oriental side to the mouth of the Gualaguaychu. As bad luck would have it, we have one of those northeast winds, which at times leave little water in the river, and our craft is as snug in two feet of mud as if in dock; while we go on with the designed work in boats, calculating from the law of probabilities that by the time it is finished, if not before, the wind will haul south. The result of this survey was a good channel of ten feet, to within two miles of the mouth of the Gualaguaychu.

"While in the mud we have had a striking instance of the effects of southerly winds upon the tide, or flow of water in this river. The wind for four days has been blowing northeast. Hauling suddenly to southwest, in one hour the water rose three feet. This change is caused more by the removal of a pressure driving the waters out than from a power forcing them in; for it is a southeaster that produces the greatest and most sudden rise. Above Concepcion the river rises twenty-four feet, a height maintained but a short time because of the greatly-increased width below and its approach to La Plata. As an illustration of the influence of the tide, I may state that I find on the Paso de Tala, a distance of one hundred and ten miles below Salto, one foot greater depth of water than when we ascended, notwithstanding the fall at the latter point of four feet during the three days that I remained.

"Anchored off the Rio Negro; having sent Mr. Henry to run out a supposed channel along the Banda Oriental shore from Frey Bentos to this point. He found it direct and of ten feet, making three in this reach of the river; the one best adapted to large vessels being near the Entre Rios shore.

"Accompanied by Mr. Murdaugh, I left the steamer to make a

track survey of the Rio Negro to Mercedes. Five miles from its mouth passed Soriana, a small town on the left bank. Encamped for the night at Port Cerito. While the men were pitching their tents we started over the plains with our guns; saw many partridges; supped on 'hard tack,' made soft by soaking; found shawl and poncho no effectual protection against damp grass and the chilliness of the night. At early dawn again on the move, and reached Mercedes at meridian."

This town of 7000 inhabitants stands on high land about half a mile from the river, and presented the most attractive appearance as we approached. Above it the Rio Negro is not navigable; but up to this place we found a channel of seven feet, which is increased to ten by a south wind; width of river from three quarters to one mile.

The vast growth of sarsaparilla upon the borders of this river discolors its waters, and imparts to them at the same time such medicinal properties that invalids resort to Mercedes for the benefit of their curative power. Here, as elsewhere in all this country, the principal exports are hides and jerked beef; lime and fire-wood, in small quantities, are sent to Buenos Ayres.

"We spent the afternoon in riding over the neighboring plains. Soil a tenacious black loam; grass vigorous. We saw neither cattle nor cultivation; and every where in this unfortunate country we hear the same story: 'Civil wars have desolated and depopulated it.'

"The number of gigantic quadrupeds imbedded in these plains is extraordinary. Mr. Stoddard, an English gentleman residing at Mercedes, has made a valuable collection, which includes what he supposes to be a glyptodon, and many very perfect parts of a megathereum. The developments that have been more recently made fully sustain Darnin in saying, that 'the number of the remains imbedded in the grand estuary deposit which forms the pampas and covers the granite rocks of the Banda Oriental must be extraordinarily great.'*

"Another individual of this place tells me of a fine collection of petrifactions found in the neighborhood—a horse's hoof, cow dung, birds' eggs; and on the Gualaguaychu trunks, branches of silicified trees are found, exhibiting every stage of petrescence."

Having accomplished the object of our visit to Mercedes, we proceeded to Higueritas, where a more detailed survey was made

* Darnin, vol. i., p. 199.

of the anchorage. From thence I once more returned to Buenos Ayres, and prepared for an exploration of the Salado.

It will be seen that to Salto, fifteen miles below the Great Fall, and two hundred and ninety from Martin Garcia, we ascended the Uruguay in the Water Witch at the season of low water. It therefore may be inferred that the ascent of this river is easy and practicable at all times to vessels of nine feet draught. In the upper part there is a slight current; but that is often neutralized by the flood tide, which is perceptible with every south wind. Its channel, though not so well defined as that of the Parana, is not changed by every inundation, and is wide enough to admit of vessels beating up and down. By a short canal, of about three locks, the navigation of this noble river could be opened several hundred miles beyond the Salto Grande, where it flows through a fertile and comparatively populous country. Numerous islands and islets of every size and form rise many feet above the highest water level, but add little to its beauty. Many of them extend for miles, and intercept entirely a view of the main land; but they are without the splendid vegetation, the brilliant flora, that render so enchantingly beautiful those of the Parana Archipelago. With the exception of the willow and peach, their growth is generally shrubby, and, so far as I could judge, valueless.

For half a century the Banda Oriental, with few intervals of peace, has been afflicted by calamitous wars, civil and foreign. The decrease of cattle—its only source of wealth—is enormous; and the condition of its territory upon the Uruguay, as compared with that of Entre Rios opposite, offered the most impressive illustration of the influence of peace and just government upon the progress of these countries. Entre Rios, in the revolutionary struggle, was devastated by Artigas; and as a neighboring state it has suffered from the occupation of the Banda Oriental by Brazil. At the period of our visit but two years had elapsed since the opening of the rivers to foreign commerce, and the establishment of the Argentine Confederation under a constitutional government; but in this short time the towns of this state, upon the Uruguay, like those of the Parana, had doubled their population; free-schools, and a college were flourishing; estancias were numerous and well stocked; ships were loading for European ports; and with the continuance of peace Entre Rios is destined to be one of the most prosperous states in La Plata. Throughout its length and breadth it has not an infertile or insa-

lubrious district; it is intersected by numerous perennial streams, tributaries to the Parana and Uruguay—the central lines of communication with the Atlantic. Nature unaided produces fine pastures; and the luxuriant herbage is but the covering of a vast gold mine—a varied and productive soil. Formerly the wealth of the estanciero consisted entirely in herds of horned cattle; but this property is easily appropriated in time of war; and many of them, having suffered severe losses, have of late years given much attention to the rearing of sheep, which is attended with such success that wool is, or will become soon, a staple. To the gaucho soldier *carnero* (mutton) is not *carne* (beef); neither is the skin of the former so available as the hide of the latter to the commanding general, who enters the war poor, and leaves it rich, by possessing himself of the herds of some individual of the opposite party.

The grazing farms (*establicimentos pastoros*) are generally owned by capitalists, who leave the entire management of their estates each to a capitaz, who lives in a thatched hut, with no comforts —not even those for the table that might be derived from the rudest culture of the soil. A few proprietors reside upon their estancias, in excellent adobe houses, and possess generally great popularity and influence over the gauchos, the only laborers of the Riverine Provinces. Muscular and athletic, scarcely a shade lighter than the Indian, with long uncombed black locks, the appearance of the gaucho in his picturesque costume is imposing. When we glance at the training of these men, and know that in the military agitations of the country they are the soldiers, and that many of the chieftains who have figured prominently in the strifes of the land belong to this class, we cease to be astonished at the sanguinary character of their contests. The whole education of the gaucho is physical. The long sheath-knife—the toy of his infancy—is the prized weapon of his matured years; the pastimes of youth are feats of horsemanship, trials of skill with the lasso and bolas; the most peaceful occupation of his manhood is to figure in the spectacles of the country—the corrals—as a "domador" or marker of cattle, or to be an active laborer in its only industrial establishments, saladeros. Such pursuits leave their mark. Many of them become imbued with a brutal ferocity —a fearful indifference to the shedding of blood, which exhibits itself in the atrocities that characterize the civil wars of La Plata.

CHAPTER XIX.

Chartering of the little Steamer.—Arrival at Santa Fé.—Province of Santa Fé.—Civil Wars and Independence.—Wood.—Ascent of the River.—Animal Life.—Ducks, Jaguars, Capibaras, and Armadillos.—The Diver, Podiceps leucopterus.—Planting of sweet Potatoes.—The Crucito.—The Saladito.—La Cruz.—The Bed of a Lagoon.—Monte Aguara.—The Return.—Current and Width of the River.—The Jaguar.—Density of the Salado Water.—Journey by Land to the upper Waters.—A Tatu.—Quebracho.—The Mirage.—The surly Officer.—The Tongue of the taciturn Argentino loosened.—The Segundo.—Tio or Concepcion.—Algorroba and Soil.—Arrival at Cordova.—List of Distances.

IMMEDIATELY on my return I chartered from the agent of the American and Paraguay Company a small steamer, which had been shipped from the United States in detached pieces, and was now being put together in the "Tigre" for the purpose of exploring the Salado.* Her length was 112 feet, draught 26 inches, with all on board—twenty-five souls, two months' provisions, six tons of coal, and two cords of wood.

On the first day of July, as she was in a running condition, and her accommodations sufficiently advanced to afford protection from the weather, I took possession of her, and on the 2d started for the scene of our future operations, accompanied by the following officers: Acting Lieutenants William L. Powell and W. H. Murdaugh, Assistant Surgeon Robert Carter, Assistant Engineer T. B. C. Stump, and a crew of twenty men.

Previous to this move the entrance to the Palma Pass had been surveyed, and to Lieutenant Jeffers was assigned the charge of the Water Witch, with instructions to complete the work at Martin Garcia, the result of which has already been given.

We proceeded through the Arroyo Capitan, the Palma Pass, and Baradero, which, in connection with the work subsequently done by Lieutenant Powell on his return in the Yerba, completed the survey of the various branches of the Parana within its delta to the town of Santa Fé, the starting-point of our Salado expedition.

Our arrival quite disturbed the quietude of Santa Fé, and excited a vast deal of enthusiasm; for, should the Salado prove nav-

* The Salado, that empties into the Parana at Santa Fé.

igable to the western provinces, great prosperity might be anticipated for this town and province. To verify the predictions of some and realize the hopes of others depended upon contingencies in the future of the work that gave rise to endless speculation. Our reception, both by officials and individuals, was very flattering, but none could give us any information as to the state of the river; indeed, all accounts were discouraging. We were told by those who were supposed to be the best informed that we might possibly ascend about 45 miles; by some that it was no river; and by others that it took its rise in one of the numerous lakes in that region of country.

We dined with the governor, and accompanied his family to a ball, where we were agreeably impressed with the tact and good breeding of the men and women. The latter were generally handsome and well dressed, and danced with the inimitable grace and precision which I have alluded to as distinguishing their countrywomen.

At the period of our visit the aspect of Santa Fé was rather desolate, for both country and city had suffered in years past from the hostilities of the Chaco Indians, and the latter was not yet, like its neighbor Rosario, revivified by the opening of the rivers. Before the Revolution this province was considered as forming part of the jurisdiction of Buenos Ayres, and as no expense was spared in protecting it from the incursions of the savages by forts adequately garrisoned, it was one of the most prosperous towns in the viceroyalty, a point of distribution not only for the products of the west and northwest, but of Corrientes and Paraguay, for Chili and Peru. Its estancieros alone, from their herds in this and the province of Entre Rios, were able to furnish 50,000 mules annually for the Alto Peruvian market, and the amount of one item, yerba, received in transitu, reached 125,000 arobas.

In the civil wars which distracted the country after its separation from Spain, Santa Fé declared itself independent of the central government, and drew the line of division at the Arroyo del Medio.

But by this act was sown the germ of its decadence, for to maintain garrisons and establish posts for the protection of a long line of frontier, as well as to guard against invasion from other quarters, were more than the resources of the new state would admit of. Outposts were driven in from time to time, estancias, the richest in La Plata, were robbed of cattle and deserted by their

owners, while, emboldened by success, the Indians at last advanced to the vicinity of the town, and on several occasions entered it and committed horrible excesses. The finest districts of the country were finally abandoned, and the whole population of the state reduced to about sixteen or twenty thousand souls, of which the towns of Rosario and Santa Fé embraced nearly one half within their limits, the former containing about 3000 and the latter 6000 souls.

The position of Santa Fé, on an arm of the Parana, makes it less accessible to sailing vessels than other towns of that river. But all difficulties will be obviated by the introduction of steamers of suitable construction; and now that the navigability of the Salado for 900 miles is established, its facilities for communication with the western states are so increased that it must not only re-attain its old prosperity and consideration, but become the rival of its neighbor Rosario, which is now the emporium of trade in the Confederation. The same elements that have so far expanded and enlivened the once contracted and silent streets of the latter will also build up the vacant squares of this town, and line its bold water-front with store-houses for the receipt and dispatch of the products of the country.

To obtain the necessary fuel for our craft we were obliged to intercept, early in the morning, carts bringing in the daily supply; which sometimes embarrassed, I fear, the domestic economy of many a housewife, who doubtless wished us, in return, a speedy departure. This wood, principally algorroba, was bought for half the price paid at other parts of the Parana.

On the 13th July, 1855, with the governor, his family, and a few friends on board, who desired to accompany us a short distance, we commenced our ascent of the Salado.

Although it was the season of low water, the river, for some miles above its mouth, was very full, and the low lands on either side inundated. Its width was from one to two hundred feet; depth, twelve to eighteen; current, about one and a half miles the hour; windings between any two points equal to four times the distance on a straight line; banks well wooded with algorroba.

We had gone, by the course of the river, about eighteen miles, when, coming to a point at which the governor had ordered conveyances, we parted with our guests, and, cheered by a bright, pleasant morning, were now fairly under way.

"*July* 16. By the course of the river we have advanced 75

miles, and are near the last frontier post of Santa Fé, distant, in a direct line from the city, 20 miles. Passing this point, all civilization is behind us; we are entering the undisturbed possessions of the Chaco tribes. The river presents a more decided and defined character, with a gradual diminution of current, which arises from the fact that it is here supplied only by its main source and tributaries, without the additional discharge of numerous overflowing lakes. It courses through a bottom or flat, from one to four miles in breadth, in some places sparsely and in others densely wooded. The banks rise from twenty to fifty feet, to the level of a pampa, which presents a vast grassy expanse without any inequalities of surface. As the eye wanders over it, a dark wavy line in the distance alone breaks the monotony of the plain, and marks the windings of the Salado with its fringing of algorroba.

"Although we are but little more than twenty miles from a town of five thousand inhabitants, there is not a vestige of civilization or the track of a human being; even the footprint of an Indian is nowhere visible; but the manifestations of animal life are extraordinary. River and plain are enlivened by fowl and quadruped in endless variety. It is the domain of the jaguar, the shielded armadillo, ducks, geese, flocks of the black-necked swan, plover of different species, partridges, pigeons of extraordinary size, the guanaco, the ostrich, the hare, the deer, the clumsy capibara; while the waters teem with fish and the air is darkened by flocks of the small white gull.

"We occasionally rob the nests of ducks and geese. Having taken some of the first in the moulting state, it gave rise to an amusing discussion among the officers; some contending that they were *pichones* (young ones); but when they were served up for dinner the impossibility of masticating the most delicate morsels decided the question. It is our habit to stop before sunset for wood; and so abundant is the growth that in two hours our axemen obtain an ample supply of the best algorroba for the next day's work. These are also our opportunities for botanic and zoological research.

"*July* 18. While getting up steam at an early hour, I strolled a short distance inland and shot some partridges. The pampa is now broken by lagoons dotted with islets and gay with waterfowl. Up to this point, we are distant, by observation, from Santa Fé—in a right line bearing south by east—thirty-three miles; and by the river one hundred and fifty—which will give

some idea of its windings. A heavy frost this morning covered the ground like a fall of snow. Thermometer, at 4 A.M., 35°. By the gauge we find the water has fallen, in the last twelve hours, only one inch.

"*July* 19. The pampa is belted by lofty trees, generally quebracho, and slopes gently to the 'bottom,' which is now narrowed to half a mile on either side of the river. There is no undergrowth, the grass is fresh and green, and no meadow could present a more refreshing aspect. It is the second winter month, but the air is soft and balmy as a May day in temperate zones. The river and land still teem with animal life, and yet we can not trace a sign of human occupation.

"*July* 20*th*. River less tortuous; depth from fifteen to eighteen feet. Passed an arroyo on the right bank, which runs through a broad flat, extending north and west; water too brackish to be drinkable. At the junction of this little stream the Salado washes the base of the high land, here densely wooded; the banks show a stratum of yellow clay resting on tosca, and above, a surface-soil of rich vegetable earth from two to four feet in depth. The river has fallen within the last twelve hours six inches—very different from its state a few days past; for there are now but few lagoons to feed it. Its windings carry us quite round the compass. Passed what I supposed to be an arroyo on the left bank; but on rounding a bend of about three miles, which brought us nearly back to the same point, found it nothing more than a 'break through' of the main river, which will doubtless become soon the principal channel. The distance across, through which it had made its way, is not more than one hundred yards.

"Opening, at the season of low water, canals across the various necks of land, would shorten the distance quite one third; for, with the least excavation imaginable, the Salado would in a short time make for itself a new and more direct channel. Passed the Esquina Grande, where stood in former days a Spanish fort, not a vestige of which now remains. We continue to see deer, capinchas, geese, ducks, plover, snipe, in vast numbers. Among the ducks was a beautiful diver, the *Podiceps leucopterus*, that attracted our admiration and particular notice. It carries its young upon its back; and it was amusing to see the little creatures dive, and, on rising to the surface, again resume their place upon the maternal back. Here are evidences that the river has fallen from the highest point about six feet, and still we find a depth of fif-

teen; banks from five to eight feet in height, with indications of overflow; current one mile; average width one hundred feet.

"Saw a large herd of wild horses. Affrighted by the appearance of the steamer, and perhaps still more by the noise of our high-pressure engine, they dashed over the plains as if mad, and were soon hid among the algorrobas. We have seen no Indians, and no immediate trace of them, save a well of fresh water not far from the bank, and evidently not very recently dug. I have left my mark in this country by planting a few orange seeds and some sweet potatoes. Soil a dark alluvium, with a rich growth of grass; the water is more brackish as we progress.

"*July* 23*d*. During the last twelve hours the river has fallen five inches. The frost this morning again covered the plain like snow. Thermometer during the night 29°; at 7 A.M., 32°; at 8, 42°; at 12 M., 60°; at 4 P.M., 58°; at 8 P.M., 52°; at midnight 41°. The least depth, up to meridian, nine feet; but before the close of the day's run we had as little as five, with a tosca bottom. I fear that I shall be compelled to retrace my steps much sooner than I had anticipated. I was aware that it was the period of low water; but the inundated banks near the mouth of the Salado induced the hope that an extraordinary season had kept up a supply. We are about seventy-five miles in a right line from Santa Fé, bearing S. by E., and three hundred by the river. Its course is now less tortuous, and as we ascend, the navigation is not so impeded, and the 'bottom' narrowed by the approach on either side of the more elevated lands of the pampa.

"*July* 24*th*. The river has fallen in the past twelve hours three and a half inches; twenty-four hours previously within the same time it fell five inches. From the right a small stream, the Crucito, flows into the Salado; water dark, but clear and sweet. Pulled up it in a boat half a mile. It is very narrow, with five feet depth, and is doubtless the outlet of some lake—probably the Porongas. Before the close of the day had but four feet water, muddy bottom; river inclines more to the northwest, and is less tortuous; banks well wooded with algorroba. Were the river not falling, I should feel much encouraged to proceed with this exploration, for I am more and more impressed with the belief that it is a channel of vast importance. Made fast to the right bank near the mouth of a small stream of turbid, brackish water, which I called *Saladito* (little Salado). Pulled up it a mile or two; found a depth of three feet and considerable current. It is

undoubtedly the outpouring of some saline lake. At its junction there were myriads of cat-fish, of which the men at one haul with our net filled the little boat. Near the same point were countless numbers of small white gulls. Position of the mouth of the Saladito, latitude 30° 14′; longitude 60° 41′ W.; variation 9°; distant from Sante Fé eighty-five miles in a right line, by the river 340.

"*July 25th.* At 6 A.M., thermometer 33°. River has fallen in the last twelve hours half an inch; this gives me hope that it has reached its lowest point here and above. There was ice this morning. Thermometer at 4h. 31°; at 8h. 37°.

"The men amused themselves with setting fire to the grass to give the *immigrants* next year richer pasturage.

"A mile or two above the Saladito came to the mouth of another small tributary from the same bank, which at first perplexed me, for I was in doubt as to which was the principal river. I pulled up it a mile or more; found it very narrow, with some current; water dark and sweet, from which I concluded that it could not be the Salado, but 'La Cruz' (the Cross). We continued to ascend what I considered the main river, having a slight decrease in the depth and a width less than the length of the steamer. I took a small boat and pulled ahead a few miles. The water was as salt as that of the ocean, and its general characteristics satisfied me that it was the veritable Salado. I mounted the bank—here fifteen feet to the level of the pampa; observed a lake or river in the distance, and, approaching, found that it was the dry bed of a lagoon, now covered with a saline efflorescence which sparkled and shone like a sheet of beautiful water. As far as the eye could reach the monotony of the pampa was broken by two wooded belts, one extending north, the other west. The first I believe to be the course of the Salado, the other of La Cruz. I proceed north with the steamer.

"*July 26th.* In the last fifteen hours the water has fallen three and a half inches. Not very encouraging, but we go ahead. Have advanced eight miles; depth decreasing; took to the little boat; pulled up two miles; found only two and a half feet, and the obstruction of a fallen algorroba, which will interrupt the passage of the boat. This should not prove an insurmountable obstruction had the river ceased falling, or were there water enough beyond. Indeed, neither of these difficulties should turn me back did I not hold the 'Yerba' under a contract by which I am to re-

turn her in little more than one month. I should, under other circumstances, remain here until the rise, which should begin in November, and may be hastened by local rains.

"This point—Monte Aguara—must then be the extent of the exploration in the Salado with the steamer Yerba. It is in latitude 31° 10′ 50″ south, longitude 60° 38′ 47″ west; distant from Santa Fé by river 340 miles, and in a right line 96. On the right bank, which rises about twenty feet to a wooded skirt, stands a large guaranina-tree. On this we cut a cross and the letters U. S., and about ten feet from it buried a bottle containing latitude, longitude, names of officers and steamer.

"With regret I retrace my steps; but in ascending and demonstrating the navigability of the Salado to Monte Aguara we have achieved something. Its uniform character, unchanging course, and well-defined banks; its rise, as indicated by marks on trees; the unbroken plain through which it flows, all induce the belief that it is a river capable of being navigated to a great distance beyond the point reached. Its complete exploration is of importance, not only to the Argentine Confederation, but to the whole commercial world.

"To set at rest all doubt as to its navigability I will return to Santa Fé, and by land proceed to some point in the Province of Santiago, from which I can descend by some means to Monte Aguara."

It will have been seen by these extracts from my journal that, when scarce beyond the smoke of Santa Fé, we had passed every habitation of man, even the scattered huts of a few charcoal-burners, and entered the domain of those fierce aboriginals of the Chaco, the Indian and the jaguar; that we followed the windings of a navigable river for three hundred and forty miles in a steamer of two feet draught without meeting with even the obstruction of a fallen tree; that the pampa rises from twenty to fifty feet above the "flat" through which the Salado flows, presenting at times a boundless plain, over which the eye wanders without discerning the slightest inequality of surface. Again, after penetrating through a magnificent bordering of quebracho or algorroba, we find the interior country diversified by park-like groupings of algorroba, by the wooded belting of some tributary stream, or by lakes and salinas, the first darkened by myriads of water-fowl, while the latter are glistening in the sun with saline efflorescence.

We found at times little or no current; the least depth was

thirty inches when the water had ceased falling; and its greatest rise, as indicated by marks on the bank, was twelve feet. Its width did not much exceed thirty yards, and above La Cruz, though the river was brackish, we generally found water fresh and sweet by digging a few feet below the surface at a short distance from the banks. I think it probable that both the Crucito and La Cruz have their rise in the Lake Porongas, which receives an immense volume of water from the Rio Dulce, independent of other sources, and, like it, are perfectly free from saliferous deposits, which would not probably be the case were they fed by the draining of other lagoons, most of which are saline.

As an illustration of the physical character of the basin of La Plata at its various points, it is worthy of note that between these two little rivers there flows the Saladito, which empties into the Salado not more than one mile from the mouth of La Cruz, and yet its water is as salt as the ocean; this stream is doubtless the outpouring of a saline lagoon.

Throughout this exploration we saw no Indians, and, except a few wells, beaten paths, and marks of encampment, no traces of them; and yet the verdant meadows and plains, the rich dark soil conveyed an undoubted impression of fertility. I found that officers and men were indulging in the old habit of selecting estancias and covering them with flocks and herds.

The botany of this region offered us nothing new, but from its zoology we made many interesting additions to our collections. The number and varied species of animal life were extraordinary. An army could have subsisted for a time upon the resources of the plain and river.

In descending we shot a magnificent jaguar—the largest I have ever seen, measuring from its nose to the root of the tail five feet two inches. He was walking on the left bank, doubtless bound on a fishing excursion. Instead of escaping inland when he saw us, he dashed into the river, as if to swim to the opposite shore; but midway the stream he suddenly turned, as if to battle with the steamer. Several men came forward, eager to have a shot at the enemy, who approached rapidly, apparently undaunted by the appearance or noise of crew or vessel, and snarling as if impatient to make an end of us. Anxious to secure it as a specimen, and of course with as little mutilation as possible, I directed the men to wait for the word "fire," giving the first chance to Kelly, the best shot on board. I told him to lodge the ball "abaft" the



SHOOTING THE JAGUAR.

ear. He raised his musket, took deliberate aim, and fired. The huge creature floundered in the water, and when the men in the boat reached him a minute or two later he was not quite dead, but bleeding profusely, and so far gone as to be harmless. With a ship's musket, and a charge of "buck and ball," Kelly had secured one of the finest specimens of the South American tiger, perhaps, ever seen in the United States. The skin was carefully preserved in salt, and sent home, where it arrived in good condition, and may be seen in the collection at the Smithsonian Institute.

Among the swimming birds secured are several species of teals, differing but little, and yet with distinctive marks in plumage.

The density of the Salado water at two points—one below the tributaries alluded to, and the other at Monte Aguara—also that of the Crucito and La Cruz, was tested by hydrometric measurement, and found as follows:

Density of Salado below the tributaries by hydrometer (No. 7)	8°.5
Temperature of water (Fahr.)	54°.5
" air "	38°

Density of River Crucito	2°.3
Temperature of water	52°.5
" air	59°.5
Density of River La Cruz	6°.3
Temperature of water	47°.5
" air	48°.5
Density of the Salado at Monte Aquara	21°.88
Temperature of water	54°
" air	69°

It will be seen that the difference in density between the two points of the river at its present low state, below and above the fresh-water tributaries, is very great, and can alone be attributed to their influence.

On the 26th we began to retrace our steps. The season of fall in this river is from May to November; and boats adapted to its navigation during the greater part of the year should not have length exceeding 90 feet, beam 16, draft 2; and with the addition of a rudder in the bow a steamer could be more effectually controlled through its tortuous windings.

During our return it was "touch and go," on several of the shoalest places, showing that it was well we had not postponed a day later. The water had reached nearly its lowest point, and though in some parts it had decreased eight feet in twelve days, it was now falling only at the rate of two inches in twenty-four hours. Exposed sections of the banks at various points showed invariably a substratum of indurated clay, with a deep surface-soil.

We reached Santa Fé on the 6th of the month, and on the 12th, having completed the necessary observations, the Yerba was given in charge to Lieutenant Powell, with instructions to explore such branches of the Parana as had not been already surveyed; and then to deliver up the steamer to the parties from whom she had been chartered, and rejoin the Water Witch.

I detached Lieutenant Murdaugh, and Cornelius, one of the most reliable men of our crew, to accompany me in a land journey to the head-waters of the Salado, and if possible to those of the Pilcomayo. To establish the navigability of this latter river was with me a work of absorbing interest; and as the "Lopez decree" would not let us ascend it from the Paraguay, I thought that we might, with such means of defense against Indians as the Bolivians would gladly afford, work our way down it with the current, or even alone, on some craft that would float.

I determined to proceed direct to Cordova, thence to Santiago del Estero, and so on to Bolivia. The route from Sante Fé to the west was now entirely abandoned, and that from Rosario adopted, in consequence of the inhospitable character of the Indians in that section of the province. But the governor, with his usual zeal to forward our work, offered me a small military escort, and with our three carbines, and thus re-enforced, I thought we could make our way through any party of wandering savages; for they never encamp or establish toldos on this road, as their principal object is to plunder the tropas* of oxen, horses, or any portable effects, and retire to the interior of the Chaco.

I also timed my departure to suit that of the military commander-in-chief of the province, Colonel Rodriguez, who was going to examine Romero, twenty-two leagues from Santa Fé, for the purpose of establishing a new military post, which would extend the frontier line of defense twelve leagues.

Sause, ten leagues from Santa Fé, was then the last post, and our stopping-place the first night. Near it is a pueblito of six or seven hundred civilized Abipones, one of the most desolate and comfortless villages we had seen. For this no possible reason could be assigned, other than the indolence and improvidence of its inhabitants; for the surrounding country is fertile, and offers excellent pasturage. We were kept awake the beginning of the night by the unceasing howling and barking of dogs, apparently quite equal in number to the population; and toward day by the crowing of as many game-cocks. At 4 A.M. I roused up Cornelius, who had become quite an adept in making maté, and we fortified ourselves for a long day's ride with this beverage.

We started at an early hour, and expecting to travel sixty-seven miles without changing horses, our progress was necessarily slow —generally a walk, the most unusual and fatiguing gait in a horseback journey over the plains. At 4 o'clock P.M. we reached Romero, a point distinguished in the unbroken level of the pampa by four quebracho-trees and a small lagoon. Before we had reached our halting-place, one of the soldiers branched off, and seemed to be hunting for something over the plain. He soon reappeared with a "tatu," an animal of the armadillo family. It was roasted in its own shell, and proved as delicious a morsel as could delight the palate of an epicure. After halting an hour we continued our journey, accompanied by an Argentine officer

* A number of wagons transporting produce or merchandise.

and two soldiers as escort, and at 8 P.M. reached Quebracho Solo, a spot, as its name indicates, marked by a single tree. Here we halted, as one of our soldiers pretended to be ill. I was provoked, for I had hopes during the night to reach the next military post, and almost wished for the yell of an Indian, which I knew would prove a panacea for the man's feigned illness. But it was useless to remonstrate; so, settling ourselves upon the plain, with saddle-blanket for bed, and saddle for pillow, with poncho for *over-all*, and the starry heavens for canopy, we soon dropped into a sleep not disturbed so much by fear of Indians as by cold, musquitoes, and innumerable insects. By 4 A.M. the sick soldier had entirely recovered, and, continuing our journey, we reached Quebracho at 9 o'clock A.M., distant from Romero thirty-six miles, and from Sause sixty-seven.

We were now within the Province of Cordova, but none could inform us where lay the dividing line. One declared it to be near this post, another that it was twelve miles east. At Sause we saw a domesticated guanaco—a beautiful animal, and easily tamed when young. They are highly valued for their wool and hides; but the country people consider their flesh indifferent food. Vast numbers of them are found in the west provinces, but up to Quebracho we saw but one flock, and that was flying over the plain as if pursued by mounted Indians or gauchos, from which we presumed that the watchman on duty espied us before we saw his charge.*

Arriving at Quebracho we had made one hundred and twenty-seven miles from Santa Fé, traveling the whole distance through an unbroken plain. Its solitude was undisturbed except by the military post and Abipone village to which I have alluded, and the passage occasionally of a deer, ostrich, partridge, or a herd of guanaco. There was no impression of space; it was a shoreless sea of grass, the eye alone finding a resting-place upon the horizon, from which the sun rose as from the ocean. The refraction was very great; as in the African deserts, there were "Lakes of the Gazelle"—waters that never fail; and upon these grassy saliferous pampas water is so scarce as to make these illusions of mirage both refreshing and tormenting.

Quebracho is a desolate spot, without trees or cultivation. Soldiers shifting from gable end to front, and back, from side to

* A male guanaco is said to be always on watch when they descend to the plains from the mountains.

gable end, to seek shade from a mid-day sun, presented a complete scene of lazy discomfort. A kid, chickens, and eggs, however, furnished us with an excellent breakfast, during the preparation of which Mr. Murdaugh excited the astonishment and delight of the military by an exhibition of the power of one of Colt's revolvers. They had never imagined or dreamed of such an improvement in fire-arms. The ten hours' ride of the previous day, a night on the pampa, and five hours in the saddle that morning before reaching the posta, was not a very good preparation for another ride of forty-two miles and the grass for a bed when it was over. But, refreshed by our breakfast, we mounted horse, and started for the "Posta Tio," again escorted by a lieutenant and two soldiers, the latter seemingly much better fitted to command than their officer, who, silent and surly, lurked behind or rode ahead, seldom bestowing upon us the pleasure of his company or conversation. As we approached a grove of trees, he dashed ahead, dismounted, and disappeared, only to rejoin us late in the day. He had spent the previous night gambling, and had availed himself of the shade of the grove for a siesta. Gaming is the vice of these people.

The afternoon was oppressively hot. This, it will be remembered, was the last winter month, and, with the sun in our faces, we suffered so excessively from thirst that my recollections of this stage of the journey are by no means pleasant. The officer knew of no water within reasonable distance of our route; "none could be had nearer than Tio," still twenty-five miles distant. Having quietly ascertained from one of the soldiers that there was a lagoon (*las vivoras*) a mile or two ahead, I rode to it, found the water brackish but drinkable; and close to were some dead bushes, out of which we made a fire, and settled ourselves for the night. The lieutenant was still shy, and the soldiers looked perplexed, as if in doubt whether their duty was near us or their commander. A bright fire, an excellent maté, coffee, and some of the treasures of our saddle-bags in the shape of cold sausage and ship's biscuit, touched the heart and loosened the tongue of the hitherto taciturn Argentino, who drew up, and, under the influence of good fare, became quite agreeable. I intimated to the gentleman that his "command" must assist in collecting food for the fire, or dispense with it. In this pampa apartment we were at least free from the annoyance of barking dogs, crowing cocks, bed-bugs, and other plagues of postas, and slept soundly until three o'clock A.M.,

when I was awakened thoroughly chilled by the ice on my poncho. I turned out, roused up Cornelius; and when the sun was rising, as from an ocean horizon, we were again galloping toward Tio, greatly comforted by the all-refreshing maté taken before starting. We soon entered a section of the pampa diversified by *islas del monte* (wooded islets). There is more or less saliferous deposit throughout the distance from Santa Fé to Quebracho, but from this last post to Tio its presence is excessive; extensive sections are white with the efflorescence of salt or saltpetre. No traveler should follow this route over the plain without a provision of water as well as food, and should be prepared to pass his nights upon the grass; for where a little fuel is to be found, it offers a much more comfortable bed than the floor or hide cots of the wretched postas. As our journey was made in the last winter month, we suffered somewhat from cold, but an additional blanket or two would remedy this inconvenience.

Three quarters of a mile from Tio we forded the Segundo, the water up to the bellies of the horses, and saw on the left bank the remains of the old town of Tio, removed to its present position in consequence of the inundations of the river, which, according to the commandante, has its outlet in a large lake, *Mar Chico* (little sea), twenty-five miles from this place.

Tio, or Concepcion, as it is now called, is a neat little village of about thirty whitewashed and thatched adobe houses, placed as usual around a square, at one end of which was a chapel. There were in this neighborhood very few cattle, but fine flocks of sheep. The first are worth from twelve to sixteen dollars the head, the latter from seventy-five cents to one dollar. Horses could be purchased for eight dollars, and mares for two.

The commandante received us kindly, and the well-bred civilities of his wife and daughter made our short stay at this place a pleasant moment in this ride over the pampa. From here our journey to Cordova was much facilitated by the addition of two cargaro horses, for which we paid, inclusive of the services of a man in charge of each, 18¾ cents the league, and for saddle-horses 6 cents the same distance.

We now entered upon a comparatively populous and well-cultivated country. The houses in view from the road had a clean, comfortable appearance, and wheat-fields were a charming sight after the monotony of the uncultivated plains. We were once more amid an agricultural people, and the yield of wheat, even

under their system of culture—by no means the best—averages thirty bushels per acre. Our journey from Tio to San Francisco, the next posta, was made at a full gallop, the usual and least fatiguing gait in traveling over the pampas.

After leaving San Francisco, and about thirty-six miles from Tio, we came to the dry sandy bed of a river; its banks were from five to ten feet in height, with the usual wooded belting, and, in fact, every characteristic of a considerable river but the most essential one—water. It proved to be El Segundo, which here again, in its windings, crossed our path. The country between San Francisco and Monte Redonda is populous, with fine inclosed wheat-fields, algorroba abundant, and soil a light but rich alluvium. I took from the river bank, three feet from the surface, a specimen of earth highly impregnated with saltpetre.

Beyond this posta we entered an undulating country, soil light, and vegetation much parched by drought. Approaching Cordova, we found the dwellings of the country more ambitiously constructed, but the cultivation poor, and the people less civil than in districts remote from town. I had noted this throughout the basin of La Plata. In the vicinage of cities and towns the hospitable impulses of the people seemed to be checked by distrust or fear. From Consejo, the last posta of this route, the sierras of Cordova were in view; and there was a perceptible ascent to the rolling lands which begin a little east of the low broken ridges that concealed the capital. Wearied with the monotony of the plains, we hailed with delight the appearance of these outposts of the Andean ranges. It was quite dark when we reached the summit of the last ridge in approaching the city. Eighty feet below were the lights of the Athens of La Plata, and in a few minutes we were following the vaqueano into the court-yard of a French fonda upon the plaza.

Right glad were we to rest for a day or two after our horseback journey; for, though sailors, we had made the distances of the gaucho, and yet our feats of horsemanship had not begun.

In a right line west—from Santa Fé to Cordova—we had traveled two hundred and forty miles.

From Santa Fé to Sause, the frontier post	30	miles.
" Sause to Romero	31	"
" Romero to Quebracho, first post of Cordova East	36	"
" Quebracho to Tio or Concepcion	35	"
" Concepcion to Caña	9	"

From Caña to Arroyo Cito	12	miles.
" Arroyo Cito to San Francisco	15	"
" San Francisco to Monte Redonda	18	"
" Monte Redonda to Uruguay	12	"
" Uruguay to Cañada	9	"
" Cañada to Consejo	9	"
" Consejo to Antonio Francisco	12	"
" Antonio Francisco to Cordova	12	"
Total	240	"

The first three are military posts. From Tio to Cordova the postas are for the benefit of travelers, who may find at them all the usual accommodations—an empty house, scanty fare, hide cots without bedding, and indifferent horses.

CHAPTER XX.

Cordova.—De Garay.—Population of the Province.—The City of Cordova.—Trade.—Rail-road surveyed by Mr. Campbell.—Madam ——.—Cathedral and Public Buildings.—The Colegio Maximo.—Paintings.—Dr. Hawling's Tannery.—The Market.—Copper in the Sierras of Cordova.—Señor Zuvcrir.—Mineral Districts.—A Journey to Santiago.—Appearance of the Horses: their Powers of Endurance.—Valley of Jesus Maria.—Shepherds' Dogs.—Divisidero.—Posta San Pedro.—Rosario.—Hard Riding.—Posta del Monte.—Bed of the Rio Dulce.—Quichua Language.—Perqui.—The Harpist.—The Tropero.—A Dance and no Supper.—Caña.—Another Tropa.—Arrival at Santiago.

CORDOVA is one of the Western States of the "Confederation," one of "Las Provincias Arribeñas"—a region conquered and settled by the Spaniards of Peru; a party of whom, commanded by Don Diego Rojas, reached it in 1543. Don Luis de Cabrera, appointed in 1573 governor of those districts, founded the city of Cordova, with the hope and ultimate design of opening a communication to the Parana. While De Garay was engaged in establishing the settlement of Santa Fé, a man, from the masthead of his little vessel, which was moored at the mouth of the Salado, observed signal-fires lighting over the plain and a great movement among the Indians. Expecting to be attacked, De Garay was preparing to make the best defense he could, when the "look-out man" descried in the distance a cavalier; another, and yet another, until a number of horsemen appeared charging the savages in their rear. It was a party of Cabrera's followers, who here met for the first time the conquerors of La Plata. These

northwest provinces remained a part of the Viceroyalty of Peru until 1776, when they were annexed to that of Buenos Ayres.

The city of Cordova, the capital, stands near the right bank of the Primero, in latitude 31° 24′ south, longitude 64° 09′ west,* on a plain 1240 feet above the level of the Parana at Rosario. It is the principal and only considerable town of the state, which is bounded on the north by Santiago del Estero, east by Santa Fé, south by Buenos Ayres, and west by the Sierras de Cordova; their highest point, "La Cuesta," rising 2500 feet above the plains. Numerous rivers—the principal of which are the Primero, Segundo, Tercero, Quarto, and Quinto—that intersect the state, fertilize a large extent of country, and flow east until lost in the sandy plains or in the "Mar Chico." Only one, the Tercero, disembogues in the Parana, under the name of Carcaraña.

The population of the state may be estimated, in the absence of all reliable data, at 100,000 souls, of which the capital contains 15,000. This is a lower estimate than is assigned it by some, and yet it would seem to be too great when we remember that thirty years ago it was given by census at 85,000, and that portions of the country since that time have been almost depopulated by civil wars and the persevering hostility of the Chaco tribes. Hides and wool—the latter very superior—have been the only exports, though the products of the state are as varied as its physical features: wheat and the sugar-cane attain great perfection, but the difficulties of transportation have limited their culture to the demands of a home population.

Cordova is a dépôt for the staples of the northwest provinces—Catamarca, Mendoza, San Luis, San Juan, Rioja—*in transitu* for Rosario and Santa Fé. In 1855, this trade reached within a fraction of 1,400,000 arobas, or 1700 tons; at a cost in transportation, by ox-wagons or mules, of $31\frac{1}{4}$ cents the aroba, or $25 the ton; and employing more than 6000 *carretas* (carts), 17,000 mules; the carts transporting 190 arobas each, and mules 14. The trade with Mendoza has heretofore been carried on exclusively by mules, at the rate of from fifty to sixty dollars the ton. But the spirit of progress has reached even this remote region, and a little—very

* The pocket chronometer had lost its uniform rate, consequently the meridian difference between Santa Fé and Cordova, as shown by it, could not be relied on; but we have, through the kindness of Mr. Campbell, the best means of determining its longitude, which is deduced from actual measurement, applied to our determination of Rosario.

little—intercourse with foreigners would give a great impetus to the development of their resources. They had heard of Conostoga wagons and improved agricultural implements; during our short stay the subject of importing them was agitated, and the result was an order to the amount of $50,000, which was filled in Boston. I have alluded, in a previous chapter, to the arrival of the ship at Rosario with this cargo.

The route of a rail-road has been surveyed from the city of Cordova to Rosario, which will, when completed, not only promote enormously the facilities of trade, and do much toward strengthening the political fabric, but will rid the country through which it passes from the predatory incursions of the Indians. My reception was perhaps less cordial here than in other cities of the west; for the Cordovases feared that the navigation of the Salado, if established, would divert from their town much of the trade they hoped to monopolize. But, if the capital is not to be immediately benefited by the opening of that river, the northern and eastern parts of the state are; for the Salado is the southern boundary of the Chaco, and its navigation will be more effectual than a hundred military posts in confining the Indian within the limits of his legitimate domain. A glance at the map will show that both these highways extend through and reach into remote and widely-separated districts of the Confederation, and will offer an easy transit for valuable products which heretofore, from the distances to be traversed and the expense of carriage, have not entered into their trade. This road, the first work of the kind in La Plata, is considered by the Cordovases—and very justly so, when we remember the past history of the country—a gigantic enterprise. The prospect of opening the Salado had awakened even greater hopes in other states; and, as I progressed to its head-waters, through Santiago, Salta, and Tucuman, I was greeted enthusiastically, for news of our success in the work below preceded us, although I often traveled with the speed of the post from city to city.

Cordova is laid out upon the plan prescribed by the laws of the Indies. Straight, narrow streets intersect each other at right angles, forming *quadras* (squares) of 150 yards each. The better houses are of stone, one-storied, and built around paved courts, upon which all the rooms open. Neither in going or returning had I much opportunity of seeing the domestic life of its inhabitants; but, if I may judge from the appointments of Señor ——'s dwelling, they are in the enjoyment of all the luxuries usual in

towns of the same size; indeed, there were manufactured articles of other countries, the transportation of which must have cost a little fortune.

I accompanied Madame ——— and her two pretty daughters in a *paseo* to the Alameda, a square of about 150 yards, adorned by a miniature lake and fine trees. A band of music and a crowd of people, among whom were many handsome women, presented an animated scene. The anticipated launching of a small boat upon the lake seemed to be a general and absorbing topic of interest and conversation.

The principal public buildings are a cathedral and some nine or ten churches, to each of which is a square of 150 yards. There are also several convents, with grounds inclosed by walls twenty feet in height. Many of the Spanish writers allude to the religious fervency of the Cordovases, a character they perhaps still merit; for I was told that the wealth of the churches and conventual establishments was very great, arising generally from the donations and legacies of females.

The possessions and revenues of the Jesuits in this province were vast. Here was their *Colegio Maximo*, for more than a century the principal seat of learning in La Plata; and here also was the famous library so wantonly destroyed or scattered at the time of their expulsion. From their confiscated property the University of Buenos Ayres was established, while that of Cordova has dwindled to a mere provincial school, known as *Colegio Montserrat.* I was conducted through it by one of the professors, and was amazed at the extent and imposing character of the buildings. After passing through a number of empty rooms, we entered the church, the interior of which showed the remains of great splendor. The ceiling was richly frescoed, and the walls, indeed every available space, were covered by pictures, many of them blackened and defaced, less, perhaps, by time than neglect. A "Crucifixion" and "Last Supper" were in good order, and works of great merit. Around the entire church, in elaborately carved and gilded framings, with an armorial bearing and Latin inscription to each, were impaneled portraits of distinguished Jesuits. I could learn nothing of the history of these paintings, which I much regretted. Among them there may be, and doubtless are, gems of mediæval art; for not only was the basin of La Plata settled by members of the noblest families of Spain, who may have carried with them many artistic treasures, but the ecclesiastics, the Jesuit missiona-

ries especially, represented every European kingdom, and considered no decoration too costly and no wealth too vast to be lavished upon their church edifices. Noble monuments of Jesuit industry and genius are to be seen in every part of the country. In the lovely valley of "Jesus Maria," about fifteen miles from the city of Cordova, I visited another establishment, which, after their expulsion, passed into the hands of the Franciscans. The buildings and gardens are extensive, and in the latter were some half dozen English walnut-trees, planted by the fathers, of superb size and foliage, their freshness contrasting strangely and impressively with the dilapidated walls and inclosures. The adjoining estancia is now the property of the Colegio Montserrat.

The aspect of the country surrounding the town of Cordova is picturesquely beautiful. Timber and limestone of the finest quality abound; tree-embowered dwellings of excellent construction and dazzling whiteness dot the plain, which, sheltered by the first steps of the sierras from north and south winds, is not visited by severe vicissitudes of temperature, and an admirable system of irrigation gives to vegetation a luxuriant freshness. The banks of the Primero were enlivened by several industrial establishments, among which were a large grist-mill, where excellent flour was made from wheat grown in the state, and a flourishing tannery, owned by a citizen of the United States, Dr. John S. Hawling, a native of Loudoun County, Virginia. The specimens I saw of varied colored moroccos were admirable. Calf, goat, and guanaco skins are dressed at this tannery, and a ready sale is found for them at Rosario and Buenos Ayres; indeed, from the difficulty of obtaining efficient operatives, Dr. Hawling could not meet the increasing demand. His best workmen were foreigners, and several were from the United States. Goat-skins were worth 31¼ cents, kid 6½ cents, calf $1 50 to $2 in the raw state; manufactured, they commanded, goat-skins, morocco, from ten to fifteen dollars per dozen, kid eight, and calf from five to six apiece. He considered the guanaco* hides equal to calf, and they were worth, in the raw state, fifty cents; manufactured, five dollars.

The bark of the algorroba, the leaf of a shrub, the molle—both abundant in the province—and the bark of the cevil, which is superior to all, but expensive, as it is brought from Tucuman at fifty cents the aroba, are used in this establishment.

* Vast herds of this animal frequent the plains as well as the highest mountain ranges.

I visited the market, where, as in Asuncion, women were seated upon the ground encircled by vegetables and fruits, while covered carts served as the stalls of butchers and poulterers. A well-dressed man was going the rounds, presenting to many of the country people a small silver crucifix, which they reverently touched with their lips, giving the bearer in return a real—12½ cents—perhaps half the earnings of the morning. Neither the kiss nor the money were ever withheld, though I observed on the countenance of more than one burly butcher an expression, as I thought, of dissatisfaction. I afterward asked a citizen the meaning of this custom. He replied frankly that it was a great imposition, but one frequently practiced to raise money; for a Cordovase would starve before refusing this tribute to the symbol of Christianity when presented.

The sierras of Cordova abound in copper, of which Señor Zuverir, the brother of the Minister of Foreign Relations, gave me eight or ten specimens from as many veins upon his own property, some indicating great richness.

With the prospect of a more stable government these mines had, even at the period of my visit, attracted the attention of foreign capitalists. In returning from the upper states I met a party of miners, principally Englishmen, but recently arrived from Lake Superior, who were sent out by Mr. La Fon of Montevideo to work copper-lands which he had just purchased in Catamarca for $96,000. It is the opinion of many that the mineral treasures of the northwestern states are unbounded; and resident landholders would gladly avail themselves of the energy and experience of foreigners in developing them. I believe myself that a fine harvest awaits the reaper.

On the 25th of August, 1855, I started for Santiago del Estero, distant from Cordova 360 miles, according to the postas of the government, of which there are twenty-one, from three to eight leagues apart. I must confess that I felt discouraged by the appearance of the wretched horses brought out to begin the journey; poor, panting, ungroomed creatures, dragged by the lasso from a corral, whither they had been driven after an hour's race over the pampas. It seemed impossible that they could make twelve miles a day, much less an hour, and this over a hilly country. But much as I thought I had learned, my experience and knowledge of the power of horses in La Plata were yet to be gained. I complained to the master of the first posta for giv-

ing us such miserable animals. He looked most provokingly unmoved, saying,

"*Es buen cavallo, Señor; es muy manso*" (It is a very good horse, Sir; it is very gentle).

"*Muy manso* the d—l! what do I want with a horse *muy manso?* You will never see this again; it will drop on the road."

"*Muy bien, Señor*" (As you please), said the man, bowing complacently.

This was too much. Off I dashed at half-speed, never breaking a gallop for twelve miles. Instead of being broken down or distressed, the sorry-looking beasts, after a half hour's rest, were to be driven back, I was told by the postillion, at the same speed, and then turned out to pasture upon the pampa. At all the postas I was detained nearly an hour, while the horses were driven from the pastures into the corral to be saddled, and yet, in all this journey, I never made less than ten, and commonly twelve miles the hour, and often proceeded to the distance of twelve to twenty-four miles, at full gallop, on the same horse.

The face of the country was very unlike the pampas of Santa Fé. We were fairly among the low sierras, the connecting links between the plains and the Andean ranges. After leaving the calcareous plain on which stands the capital, we entered upon a granite formation. Owing to the drought,* all verdure had disappeared. From this district our road led into the valley of Jesus Maria, which was enameled with wheat-fields, and enlivened by several grist-mills in active operation. The herds of cattle were small, but the flocks of sheep and goats were large. The sheep were guarded only by dogs; a feature in the pastoral life of this country mentioned by Azara, but which I saw here for the first time.

The protection of the dog is said to be ample. In the morning, when about to lead the flock out to pasture, a piece of meat† is hung about his neck to prevent all temptation to stray off for food, and most faithfully he remains at his post during the whole day. The sheep recognize their canine guardian by closing behind him at the approach of a supposed enemy, and by following readily as, punctually at sundown, he leads them to the protection of the corral. The dog is trained for this duty by separation, soon after its birth, from the bitch, and by being placed upon a nest of wool in the sheep-fold, where it receives nourishment three or four

* The rainy season begins the 1st of October.

† Azara says if this meat is mutton the dog will never taste it.

times a day from a ewe. It is afterward castrated, and kept apart from other dogs, and even from the children of the family. Thus cut off from all connection with its own kind, and from the domesticity of human association, it affiliates readily with the sheep, and, as their shepherd, shows a sagacity and fidelity quite extraordinary.

From this district, which abounds in friable limestone of excellent quality, we entered a sandy, gravelly region, with but poor vegetation, save a species of palm, the filamentous tissues of which, I am confident, would prove an excellent raw material for cordage, canvas, or other coarse fabrics.

Near Divisidero, 75 miles from Cordova, grow vast quantities of a gigantic cactus, which bears a rich, luscious yellow fruit, much prized by the people of the country, who make from it a delicious jelly, dark as molasses.

At San Pedro, the next posta, were clustered a few neat and well-constructed houses, around a small church, recently built; and immediately in the vicinity were thriving orchards of apple and peach trees. The soil of the neighboring country was sandy, gravelly, with but little cultivation, and its predominant growth was an inferior species of palm.

I reached Rosario, the next halting-place, distant nine miles, in fifty minutes. Here the usual empty prison-like room assigned to travelers was made quite comfortable by water and towels sent to us by a lady of the posta.

From Rosario we traveled through a poor, uncultivated, and undulating country to Changa, a pueblo of twenty or thirty houses, and from thence to El Paso de Tigre, where we spent the night. At this last place was a hideous object, the corpse of a man who had died from the poison of a spider. He was bitten upon the lip, and the swelling was so excessive that it was impossible to distinguish his features.

The next posta, of 18 miles, was made in one hour and forty minutes; the road passing the whole distance over a table-land of limestone. From a wild, rugged ravine, intersected by a small stream, it next entered a desolate region, without native or cultured vegetation, save a few thorny scrubby bushes. Granite and coarse sand were its prominent geognostic features.

We had made 165 miles from the capital, and were near the dividing line of the states of Cordova and Santiago del Estero; but where or what direction it took none could tell.

From this point the country was hilly, but fertile, with fine fields and noble forests of quebracho blanco and algorroba. I saw few horned cattle, but large flocks of goats and sheep browsing upon every hill-side. On reaching our resting-place for the night we had made during the day 72 miles, and yet had been detained at least one half the time at the different postas, thus averaging twelve miles the hour, without feeling particularly fatigued or observing any sign of failing on the part of the miserable-looking horses. The promise of an extra real to the postillion will always insure an average speed of ten miles the hour throughout the day.

The Posta del Monte is half a mile from the River Dulce, there known as the Saladillo, for it flows along the edge of the Salinas, or *travesia*, a vast zone of saliferous sand, extending over parts of four states—Cordova, Santiago, Rioja, and Catamarca.

This arid district must nevertheless possess some nutritious herbage, for the few horses and cattle that we saw were in remarkably fine condition; but in passing its eastern extremity, where it has a width of not more than twelve miles, we saw only a few stunted succulent plants, and a dense growth of salsole, which extended several miles; the earth being white with incrustations of salt and pure saltpetre.

The general direction of the Dulce was formerly south-east from its source to the Lake Porongas; but in 1823, in consequence of a great accumulation of drift-wood, which obstructed its passage about eighteen miles from Santiago, during a periodical rise it broke through the banks; and taking a circuitous course south-west along the borders of the travesia, became so strongly impregnated with saliferous deposit as to forfeit all right to a name which formerly indicated the purity of its waters.

Unaware of these physical changes, and knowing the Dulce only from the position heretofore assigned it by geographers, I applied to the master of this posta to learn something of the characteristics of the Saladillo, which I supposed to be one of the many rivers that flow from the eastern slopes of the Andes, and are lost by evaporation or in the swamps and lagoons of the pampas. He could give me no information whatever. He knew it only as the Saladillo, "which begins to rise in October, and reaches the highest point in April, when it overflows the lands immediately adjacent." In fording it I found a depth of from three to four feet, with banks on either side ten feet above the water-level.

Notwithstanding the indifference and ignorance of the postmaster as to the course of the Dulce, its new direction had completely changed the character of a large district of country; a district which, once rich in pasture-lands, teeming with luxuriant crops and a considerable population, is now comparatively a sterile desert.

Subsequently, in conversing upon this change with the Governor of Santiago, a man of great intelligence, he dwelt hopefully upon a project in view for restoring the river to its old channel, and he told me that nothing but their intestine troubles had caused a postponement of the work. I suggested to him another enterprise, which would be attended with very little expense; an examination of the Dulce for boat navigation, from the central districts of Santiago to Lake Porongas, and from that point to the Salado.

After passing this river I heard for the first time, at the Posta Chilque, the Quichua language. It is spoken in only one section of Santiago, that is, north of the Dulce, in a region of country occupied principally by Mestizos; while south of the same stream French or English would be as comprehensible to the people. But a more extraordinary fact still, in connection with the range of this language, is that though it comes from the north—from the Empire of the Incas—it is not spoken or understood in Jujuy, Salta, or Tucuman.

The Jesuits published a grammar and dictionary of it, but the only book I saw was an octavo volume of six hundred pages,* presented to me by General Taboado. It was published in Lima in 1631, and contains, with instruction to the curates for administering to the natives baptism and confirmation, the catechism, prayers, and offices of the Romish Church.

From Chilque to the Pueblo Atamisque the country was covered with fine forests of quebracho blanco and quebracho colorado, but beyond this to Palumbala it presented the aspect of an arid waste; the dust rose in clouds, as from a Macadamized and much-traveled road. The soil, a brown loam, was apparently good, but there was no grass, not a shrub or tree, to give momentary shelter from the burning rays of the sun: yet this dreary district was part of the once lovely, fruitful basin of the Dulce. I can not offer a better illustration of the importance of irrigation in these regions, only visited by periodical rains.

* "*Ritual formulario e institucion de Curas, para administrar á los Naturales de este Reyno, los Santos Sacramentos del Baptismo, Confirmacion, Eucaristia,*" &c.

We stopped for the night at Perqui, near the little village of Loreto, having made a day's ride of seventy miles.

A merry-making was on foot; the daughter of the post-master was gaily attired, and tuned up a rude harp, upon which she was to play for her expected guests to dance; but the master himself was in his cups, and declared he could give us no supper, for the flocks had not come up. A ride of seventy miles without dinner was no excuse for our not joining the dancers, for beaux were needed. I could not agree with him; so, drawing out a reserve of bread and a bottle of milk from our saddle-bags, we made a supper and retired to hide cots, with the heavens for a canopy.*



TROPA OF CARRETAS ENCAMPED.

We were soon disturbed by an arrival, a tropa of ten carretas from Rosario, bound for Tucuman. This was a welcome event to the dancers; the tropero and his companions, fine dashing-looking fellows, were soon whirling in the waltz, caring neither for supper nor rest after a long day's travel. The passion of these people, both men and women, for the dance is marked. Within doors it supersedes all other amusements; and as every village and posta has its rude guitarist or harpist, and the only refresh-

* In traveling in La Plata I rarely slept in a house.

ment, a sip of caña, is readily obtainable, to give a ball is with them but to collect a few neighbors.

From the tropero I learned that each of his ten wagons carried 180 arobas, for which the charge from Tucuman to Rosario was $1 25 the aroba; for the return trip, 75 cents for every wagon. Several relays of six oxen are required. He spoke of this season as one particularly severe for the animals on account of the scarcity of water, the unusual drought having dried up the pasturage. In these unwieldy wagons the produce of the upper states is carried to Rosario, and all foreign goods are, in return, thus forwarded to the interior. The time occupied in the trip, including halts and incidental delays, is from ten to twelve months.

The morning after the ball we were up before the sun. The master of the posta was quite sobered by a long sleep, and accepted gratefully an offer of yerba, for I traveled with a supply for our own use; and on this occasion a maté prepared by Cornelius was the only refreshment preparatory to a ride of eight leagues. Drunkenness is a rare vice in La Plata, although the native liquor, caña, is the most potent I have ever tasted; but the people in all parts of the basin and in every class of life eagerly seek a maté. No Chinaman sips his tea and no Turk his coffee with more enjoyment. After taking it in the morning, I could ride for nearly the whole day without food and without feeling troubled by hunger.

At midday we reached the town of Santiago del Estero, sixty miles, having changed horses but twice. We met on the road another tropa of twenty wagons, bound to Tucuman.

Eighteen miles from Santiago we again forded the Dulce, and found its waters as fresh and sweet as those of a mountain spring; depth, three feet; width, quarter of a mile; course, southwest.

We passed that morning, in our ride from Perqui, a country fertile and admirably diversified by wood and arable lands; the wheat-fields were fine, especially as we approached the river, where the yield is sixty almudes to one of seed.

The forests of quebracho and algorroba are large, and the mimosæ contribute almost as much to the comfort of man, in these western states, as the palm in other parts of the basin. One species of algorroba is unequaled as fuel, or as a material for charcoal; and the bark, foliage, and fruit of others enter into the domestic economy of every household. The fruits of the "blanca" and "negra" are much prized both for preserving and drying; in

the latter state they are not unlike dried peaches: and fresh from the tree, sell readily at thirty-seven to fifty cents the almude.

The following are the postas between Cordova and Santiago del Estero, with the distances established by the respective provinces—on which is based the charge for horses and postillions—and the time occupied by us in the travel from one to the other. The charges are not uniformly the same in all the provinces. In some they are, for each saddle-horse, half a real—six and a quarter cents—per league, and double this sum for a postillion and cargaro horse; while in others the charge for the latter is one and a half reals.

			Hours.	Min.	Leagues.	
1st day.	From	Cordova to Posta Moyen, in	3	00	5	Postas in Cordova.
	"	Moyen to Guerra	1	30	5	
	"	Guerra to Salitra	0	30	2	
2d day.	"	Salitra to Las Talas	3	10	8	
	"	Las Talas to Divisidero	1	15	5	
	"	Divisidero to Yinta Guasi	2	15	7	
3d day.	"	Yinta Guasi to El Sala	0	50	3	
	"	El Sala to San Pedro	2	00	6	
	"	San Pedro to Rosario	0	52	3	
	"	Rosario to Las Piedras	1	45	6	
	"	Las Piedras to Paso del Tigre	1	15	4	
4th day.	"	Paso del Tigre to Porto Suelo	1	40	6	Postas in Santiago.
	"	Porto Suelo to Orquetas	1	05	4	
	"	Orquetas to San Antonio	0	40	2	
	"	San Antonio to Guardia	1	35	5	
	"	Guardia to Pueste del Monte	2	30	7	
5th day.	"	Pueste del Monte to Chilque	1	30	4	
	"	Chilque to ——	2	15	7	
	"	—— to Palumbala	1	30	6	
	"	Palumbala to Perqui	1	25	6	
	"	Perqui to La Egira	2	40	8	
	"	La Egira to Cordero	1	10	4	
	"	Cordero to Santiago	1	20	4	

CHAPTER XXI.

Santiago. — Government House.—Trade and Population. — No Hotels.—Pair of Gloves. — Visit to the Governor. — Don Taboado. — The Boat. — Quintas and Fruits.—Chills at Santiago.—The Pic-nic.—The Dulce.—Bed of the Salado.—The Saladillo.—The Flor del aria.—The Ulua.—Luxuriant Foliage.—The Sievre.—Bees.—The Toisimi.—Yaña.—Moso Moso.—Mestiso Quilaya.—Cani.—Quella and Alframisqui.—The Eyrobaña.—Wax.—The Cochineal.—Lassoing a Mule.—Price of Mules.—Launching the Boat.—A Bivouac.—Arrival at Salvador.—Banks of the Salado.—Birds.—Estancia Figarra.—"Que Animal."—Arrival at Matara.—The Dance and the little Child.—The Priests.—Incursions of the Chaco Indians. — List of Trees.—Quebracho.—Algorroba.—Vinal.—Quilin.—Chaña.—Mistol.—Uiñay.—Tala.—Puna.—Gumi.—Quimel.—Cardon.

SANTIAGO, the capital of the state, stands some half mile from the Dulce, in latitude 27° 46′ 20″ south, longitude 64° 22′ 15″ west,* and contains about five thousand inhabitants. It presented an aspect of decay. Deserted, dilapidated houses and silent streets only offered the pleasant enlivenment of business with the periodical arrival or departure of tropas. The public buildings are a government-house and three churches. One of the latter and many dwellings are built of *tapia*† in that district of country —a perishable material, from the strong impregnation of the soil with saltpetre. Buildings and inclosures of it were crumbling under the action of the elements, and yet a church in Santa Fé, constructed of this same material, looked as if it might stand for ages: indeed it had become, by time and exposure, as hard as granite. The government house is a substantial brick structure, with spacious apartments, some of which were occupied as public offices: the reception-room was well furnished and hung with pictures, many of them portraits of distinguished men of the republic.

Six hundred and fifty miles from Rosario, and five hundred and ninety from Santa Fé—the outlets of this country upon the Parana—distracted by political factions, and devastated by the forays of Indians, it creates no astonishment to hear that Santiago has retrograded since the establishment of independence;

* Determined by meridional difference from Cordova, with pocket-chronometer rated at the latter place.

† Enormous adobes, several feet in length by some two or three in thickness.

and yet it has a population of 50,000 souls, distinguished in La Plata as industrious and enterprising. As its resources are great, we may fairly conclude that it only awaits a development which it must receive under the Confederation and the administration of its present governor, Don Manuel Taboado, who is a man of integrity and energy. He was ill at the time I arrived; but my reception by Don Juan F. Borjas, the *gobernador delegado* (deputy governor), was marked by civility. Apartments, for there are no hotels in Santiago, were assigned us at the Government House, where, as the guest of the state, not only was every want anticipated by servants in constant attendance, but all the luxuries and comforts that the town afforded were unostentatiously supplied. I was afraid to attempt the purchase of the smallest article, for it was promptly furnished, and the money invariably returned. I sent Cornelius for a pair of gloves; he brought me some of excellent quality, together with the money which I had given him.

"But how is this? Why did you not pay for them?" I inquired.

"You can pay for nothing here, Sir," was the reply.

I called at the governor's private residence, and found him confined to his bed. It was quite unnecessary to explain the object of my visit to Santiago. He anticipated an exploration of the Salado with impatience, as a work the success of which would insure the prosperity of all the western states. I told him that a raft or boat of some kind was necessary.

"There is a skiff eighteen feet by three in the Rio Dulce. Will it answer your purpose?" he kindly suggested.

"But we are forty or fifty miles from the Salado."

"The boat shall be transported to the river by ox-cart, and I will follow with a military escort. If agreeable to you, my brother, General Antonio, will accompany you, for he speaks the Quichua, and may be useful in communicating with the people."

Such were the encouraging offers of Governor Taboado.

While awaiting the return of the general, who was at his estancia, I accepted the hospitalities of several families of the city, and visited some of the really pretty quintas that dot its environs. Notwithstanding the severe drought of six month's duration, the alfalfa, or alfa, was most luxuriant; for the lands generally were well irrigated by the waters of the Dulce, which was conducted through them by a main and lateral canals. A *quinta* (country seat) of ten acres pays a low tax of two dollars per an-

num for the use of this water, which is let into the canals at intervals of two weeks.

Peach, fig, pomegranate, and orange trees were growing vigorously, side by side, in the same garden, and bore, I was told, in their season, fruit in great perfection. The fig-tree attains a considerable size; some were ten inches in diameter, through the trunk, and from thirty to forty feet in height. Cotton is perennial, and yields abundantly for ten years; but I saw only a few straggling plants, for the cultivation has entirely ceased since the introduction of the manufactured article.

The salubrity of the climate is unequaled. Fevers of a malignant type are unknown. In the whole state there is neither physician nor apothecary; for here, as in Paraguay, the indigenous vegetation furnishes *remedios* for all diseases known. One day during my stay I was ill, and certainly thought I had a chill; but this was considered impossible.

"Ah, no, Señor," said my visitors, earnestly, "the ague is unknown in Santiago."

We were invited by several prominent citizens to a pic-nic at a short distance from the town on the banks of the Dulce. Our conveyance was the governor's little boat, in which we pushed off, and made all sail up stream; but the craft, governed more by the current than sail or rudder, would run bows into the bank on one side, and stern on to a flat the other, until, heartily weary, we landed, and, with our guns, followed the picturesque banks of the river. An ample collation was afterward spread under the shade of an algorroba. Among other luxuries provided, and they were many, was English ale, which is so greatly relished in every part of La Plata. British enterprise had sent it over the ocean and up the river to Rosario, from whence it had been brought six hundred and fifty miles across the pampas in wagons.

On the 8th of September, the day fixed for our departure, the boat, lashed upon an ox-cart, was dispatched across the country; and we followed in the governor's carriage, a barouche drawn by four horses, each mounted by a postillion. We forded the Dulce, about a mile from the town. At that point its width was four hundred yards; depth four feet, which, by marks on the banks, I knew to be ten feet below its highest rise. The water was perfectly fresh and sweet, although the constant recurrence of the efflorescences of saltpetre, showed how strongly the adjacent

lands were impregnated. Before reaching the river, we passed a belting of sandy hillocks, irregularly thrown up, as if by the wind, and partially covered with vegetation. They reminded me strikingly of the sand-dunes of our east coast. Can it be possible that these lands, more than seven hundred miles from the ocean, once bordered a great estuary?

Having left the capital at rather a late hour of the day, we stopped for the night at the estancia of a friend of General Taboado. Although it was one of the better order of country houses, our cots were placed out of doors; for to sleep in the open air seems to be the universal habit of all classes in good weather, and so deliciously pure is the atmosphere that no apprehension of risk to the health need be entertained.

On the 9th, at an early hour, after having, as usual, taken maté, we continued our journey, and soon passed the ox-cart, lumbering along slowly with the exploring craft. Three leagues from Estancia Taboado we crossed a wide flat, which twenty years ago was the bed of the Salado; now that river courses four leagues farther north of it. The structure of the land is promotive of these changes, but the direct cause is found in the undisturbed accumulation of drift-wood which at certain points so entirely obstructs the channel that, during the season of flood, the waters assume a new direction. Again, they may be ascribed to the *barricados*, the primitive bridges of the country, which are formed by felling trees on both banks; these, falling in the river, collect all floating material, and in time quite a substantial passage-way is formed.

The Saladillo, now called a branch of the Salado, though a few years since it was the principal channel, separates from the main stream ten miles above the Estancia Taboado, and unites with it twenty-seven miles below, forming an island thirty-six miles in length by from three to six in breadth, which has a population of 3600 souls, and furnishes six hundred fighting men. It is well wooded, and the soil, a dark alluvium, yields fine crops of wheat and corn.

On reaching the estancia, we had passed a distance of fifty-three miles from the capital, over a sandy level country; some districts of it are populous and well cultivated in wheat and corn, while others were intersected by fine forests. In riding through the woodlands I saw some of the noblest forms of the mimosæ, such as the white and black algorrobas, the thorny vinal, the quilin,

and chaña; also the uiñay, with its floral barometer,* the jumi,† and a variety of other shrubs, which, if less useful, yet enriched the woods by their clusters of bright flowers. Many a tree was inwrapped and festooned with the most delicately fragrant and beautiful of all epiphytes, pointed out to me as the *flor del aria*, and by the climbing cactus ulua, with its creamy white and trumpet-shaped flowers. The cardon of the toisimi bee, the tuña of the cochineal, and other gigantic cacti covered the plains, all so luxuriant and verdant in this first spring month that it was difficult to realize a periodic stagnation. It was a striking feature, and one that could not fail to impress a casual observer or the most careless mind, that all the powers of this nature were made tributary to the wants of the people of the country; every tree, every shrub and flower, bark, foliage, and fruit, seemed to enter into their domestic economy.

If there was less affluence in the animal life, it nevertheless offered new and varied objects of interest. I shot with my carbine a *llevre*, the hare of La Plata, and the first that I had seen; it was of a glossy bright squirrel-gray, with yellowish-white belly, and measured two feet from nose to tail. I also brought down a partridge, bearing a strong family resemblance to the large bird of Entre Rios, but in certain points differing very materially. It is larger, the neck much longer, the legs shorter, and upon its head is a crest of a few long feathers; its eggs, about the size of those of a hen, are a rich dark green, and as smooth as the finest and most highly-glazed porcelain. Scarcely had we gotten beyond hearing of the shrieking chuña, a quail we had seen in Paraguay and Corrientes, when we were saluted by the shrill notes of another bird of the same family, but differing in size and plumage.

The bee abounds, and eight distinct species are recognized: the tiosimi, yaña, moso moso, mestiso quilaya, cani, quella, and alpamisqui. These Indian names are significant of the characteristics of these industrious and useful insects. The people of the country revel in the rich supplies they afford of a delicious and invigorating food. I ate of several of these varieties of honey, and preferred above all others that of the toisimi bee, known as the cardon honey; for it is only found in the trunk of that cactus. Expressed from the comb, it becomes after a few months perfectly

* The country people note the opening and closing of the flower of the uiñay as an unfailing indication of atmospheric changes.

† From which potash is obtained.

white and granulated; and when eaten with bread or parched corn* is considered delicious and sustaining. The Santiaganians prefer the cardon, but they also highly prize the lechiguaña, the product of a bee which makes its hive in trees, and feeds upon the first spring flowers; for the flavor of the honey depends upon the food of the insect; the comb looks as if formed of the finest tissue paper, and has no admixture of wax. Myriads of bees exist in the Chaco, bordering the Salado; and large parties, provided with wide sacks and a provision of parched corn, cross over in the month of December to collect the produce of the wild hives. They take very good care, however, not to venture beyond the woods and plain immediately adjacent to the river; for with the Indians also honey is a staple article of food, and they prefer above all other varieties one that is found in that region—the eyrobáña, which is the deposit of a bee that feeds upon the fragrant ybirapaye. Forlorn, emaciated invalids join these parties, and, after an absence of a few weeks, return fat, well, and so changed that it is like the working of a miracle. This is ascribed to the properties of the wild honey, which, with parched corn, is for the time the only food of those engaged in these expeditions.

A considerable quantity of wax is still sold to the village merchants, and finds its way to the neighboring provinces; but the trade in this article must have diminished; for, according to Azara, ten thousand pounds were collected annually in Santiago before the Revolution. The process of preparing it for sale is simple enough. The comb is boiled in water, which is frequently stirred, and as the wax rises to the surface, a bunch of twigs is immersed, to which it adheres; it is then bleached by a daily exposure to the action of the sun for some weeks.

Cochineal was, before the Revolution, a staple export from Santiago; ten thousand pounds having been sent annually to Chili and Peru. Now it is gathered only for home consumption, and may be readily recognized in the brilliant scarlet ponchos and coarse woolen goods of the country. I believe that any amount could be exported; for the *cactus opuntia*, or tuña, upon which it is found, abounds in every part of the state. The Jesuits discovered that the quality of the cochineal was improved and the quantity increased by cultivating the tuña.

The Estancia Taboado embraced several square leagues; but this was a very small part of the landed estate of a family of three

* There is a small corn or maize planted expressly for this purpose.

brothers and two sisters, who hold their property of every description in community of interest. There, for the first time, I saw mules broken for service; the general having, at the time of my visit, just received a lot from Buenos Ayres. The mule was lassoed and dragged forth from the corral to a short post, around which the lasso was skillfully wound, as the animal attempted to escape. A cloth was then thrown over the eyes, and the head drawn close to the post; one man gave the ear a violent twitch, another girded on the ricado with great force, and fixed a very primitive hide bridle, without a bit, to the lower jaw. The domador, equipped with enormous spurs, then sprung upon the ricado; and at the same moment, the mule released from the post, and relieved of the bandage over his eyes, dashed off with arched back, head between his legs, leaping, bounding, kicking, or turning as on a pivot. All was of no avail in unseating the rider, who, at every vicious movement, only plunged his enormous spurs deeper into the creature's side. At last the battle ended; they re-entered the corral; the man cool and unmoved, the mule utterly exhausted and completely under the control of the rider.

This operation is severe; but after a few trials the beast is tamed, and soon learns to associate the will of its rider with the rein. The domador is, as may be supposed, an important character in all pastoral establishments; and without appearing to exercise any great muscular force, his feats of horsemanship and his skill in breaking the wildest animals are marvelous.

These mules at Estancia Taboado were purchased in Buenos Ayres for five and a half dollars apiece, and brought to Santiago by a capitaz, assisted by several peons. Forty dollars to the capitaz, twelve to each peon, and one per mule, were the expenses on the road. On the day after their arrival the general sold two thirds of them at eighteen dollars apiece. The animals, when fattened and tamed, are driven to Salta and Bolivia, where they are sold at trebled and quadrupled prices. The demand for them is constant, and it will always continue to be a profitable trade, as they furnish the only means of transportation across the Andes for the produce and merchandise of Bolivia to and from her Pacific port, Cobija. At the period of my visit horned cattle in Santiago were worth from nine to ten dollars, and hides four.

Although the population and exports of Cordova are greater than those of Santiago, I observed in the latter state that the cultivation of the soil was pursued with greater skill; indeed, this is

more of an agricultural than a grazing country, and one in which I met, almost for the first time in the Argentine Confederation, a laboring class, industrious, robust, and civil to strangers. But without a market for his produce, the Santiaganian farmer has no stimulus to do more than meet the demands of the inhabitants of his own state.

September 11*th*, 1855. Our little craft arrived in the afternoon, and was launched upon the Saladillo in the presence of a number of admiring but greatly astonished peons; for in the whole country it was the only boat, and the first within the memory of living man, that had floated upon the waters of the Salado.

September 14*th*. All preparations were completed, and having made the necessary astronomical observations, which placed the Estancia Taboado in latitude 27° 20′ 25″ south, longitude 64° 08′ 25″ west, I commenced my exploration, accompanied in the little boat by General Taboado, Acting Lieutenant Murdaugh, Cornelius, and three peons.

As the governor had ordered the commander of the river districts to afford any required assistance, we found parties of men at different points ready and willing to remove all obstructions. The united labor of ten, fifteen, and even twenty men was sometimes required to cut a passage through the *barricados* (bridges) of trees; but the peons, singing and joking, with axe in hand, dashed into the river, and, with the water sometimes up to their waists, worked with a vigor and will that quite astonished me. It can not be supposed that these laborers comprehended fully the importance of opening this channel, but they evidently entertained a high respect for their governor and general, and were anxious to please them. At every stopping-place crowds of men, women, and children came down to the river with offerings of chickens, eggs, and honey.

By sunset we had accomplished sixteen miles, and finding at this point but twelve inches water, I determined to make a passage across the island to the main stream. In a short time—for I would listen to no *mañana* (to-morrow)—an ox-cart was moving overland freighted with the little craft, and we bivouacked around a comfortable fire, for the nights were yet quite cool. Refreshed by a maté and a supper of asado, cut from a bullock which was a few minutes before grazing upon the adjacent pastures, with ricado for pillow, feet to the fire, and an aspect of the heavens above us that would have delighted any cloud-weary reader of

the starry worlds, we dozed away, thinking the soft grass no bad bed.

At dawn the next morning, the 15th, we started across the island, and, taking a southeast direction, passed several villages, and found the country fertile and populous.

At Salvador, four leagues from our stopping-place of the 14th, we reached the Salado, and again launched our little boat. The width of the river at this point was fifty feet; at high water it is one hundred and fifty. It had a depth of twelve inches on the shoalest places, and a current of one mile the hour. The banks rise abruptly from twenty to thirty feet, and were belted by the finest algorrobas, vinals, and sauses that I had yet seen in La Plata. From this vicinity is taken the alcaparosa, a metalline substance which, when boiled with the leaves of the molle, yields an unequaled black dye. Quantities of cochineal are also collected here.

Making four miles an hour we reached the mouth of the Saladillo in one hour and a half. After passing this point the river becomes wider, less tortuous; and the obstructions were only such as could be readily removed by half a dozen men armed with axes and lassos. We passed a chain of sweet-water lakes about half a mile north, named, as they appeared, Salvador, Miravilla, Tigeroa. A small branch of the Salado flows into this latter, and again reunites with the main river some distance below by a fall of ten feet.*

We saw vast numbers of the charata. The same bird is found on the Paraguay and Vermejo, where it is known as the "gallina del monte." Its note is very peculiar. When startled it makes a shrill shrieking cry, which is instantaneously taken up and responded to by many others, as if to give warning of the approach of an enemy. At Cruz Bajada we stopped at sunset, and around a good fire, kindled upon the banks, passed the night.

September 16th. As our crew, who never before saw a boat, were not very skillful navigators, we were obliged to stop for an hour or two at the Estancia Figarra and repair the rudder, which had been injured in running foul of a snag. Here we obtained a meridian altitude, which determined the *bajada* (landing) of this estancia to be latitude 27° 42′ 24″ south. From this point the river increased in width, depth, and current; the adjacent country was fertile and comparatively populous. We passed several

* At the state of the river when I examined it.

estancias, the largest of which, Candelaria, is quite a village. Having made thirty miles, we stopped for the night at the Estancia Catchi, where we feasted on cardon honey and popped corn,* sent us by the master of the estate.

September 17*th.* The general course of the river was southeast, with, as yet, no obstructions but those arising from fallen trees, through which a passage was cut for the boat. Its characteristics and those of the adjacent country were very unvarying. The surface-soil of the latter is a rich vegetable deposit of from two to four feet, resting upon an argillaceous formation of remarkable uniformity. For two days I had traced a stratum of green clay, without a break in it, from three to six inches thick, and containing innumerable minute shells: it varied in distance below the surface from fifteen to twenty feet, and was at that time just above the water-level.

The appearance of the Conquistadores among the aborigines could scarcely have excited a more lively curiosity than did our little exploring craft. At the Estancia Lojlo, where stand a chapel and several dwelling-houses, a number of people had assembled from far and near to see the boat. It was the wonder of the country. A horse, mule, ox-cart, or hide balsa were the only modes of conveyance familiar to these simple people, who would laugh, look at the skiff, then at each other, and exclaim '*Que animal!*' Several times, in rounding a bend of the river, we came suddenly upon parties of men and women fishing or washing, who had heard nothing of the expedition. At sight of us they would dart off into the woods as if pursued by a legion of evil spirits. The general would call out some reassuring words in their own language, when one would timidly appear, then another. How they laughed and gesticulated, and what a volume of rich Quichua they poured out in explaining how, at our approach, none had stopped for a second look; for one had taken the boat for a huge beast, others supposed that we were hostile Indians in a novel disguise. As we advanced, numerous other visitors, who, like those at the Estancia Lojlo, had heard of us and had traveled from a distance, brought with them offerings of honey, popped corn, eggs, and chickens.

We saw quite a number of estancias which, from their dilapidated and abandoned condition, showed that the marauding In-

* A small grain is cultivated expressly for this use. When roasted it bursts and expands to tenfold its original size. With wild honey it is delicious.

dians had carried their forays and depredations even to this high point.

September 18*th*. Our first obstruction was a barricado, where we found twenty men, with axes and lassos, busily cutting a passage. They were working with a will, though up to their waists in water. At 3 P.M. we arrived at Matara, having accomplished that day twenty-three miles.

To this point we had made ninety-six miles from Salvador, and had found no grave difficulties in the navigation. The banks rose from twenty to thirty feet above the water, and at that season showed no indications of recent washing, such as might arise from a strong current. The course of the river generally was marked by a wooded belting, and the adjacent country was populous and well cultivated.

Should the Salado prove navigable to the Parana, Matara must, from its central position, be a place of some trade. It is about three quarters of a mile, west-northwest, from the point at which we landed, and is, by our determination, in latitude 28° 07′ 14″ south, and longitude 63° 43′ 15″ west. It has now a population of only five hundred souls, although twenty years ago it was a place of consideration, and the residence of some of the wealthiest families of the province. The repeated incursions of the Indians, and the constant apprehension in which even the inhabitants of the town lived, have caused the abandonment of estancias, and the removal of families to other parts of the state.

September 19*th*. The weather was too cloudy for observations when we arrived at Matara; and, being anxious to determine its position satisfactorily, I accepted the commandante's offer of hospitality, and took possession of one of the many deserted houses of the place.

It was the conceit of an old Italian painter,* in his picture of the "Judgment Day," to represent men and women entering heaven with the faces of infants. At Matara I witnessed a more curious illustration of the idea that "of such is the kingdom of heaven." On the evening of our arrival we were invited to a dance. The ball-room was a well-swept, well-beaten yard; the orchestra a bench; and its one musician a harpist, whose instrument was quite as primitive as that of the maiden at Posta Perqui. The guests were the inhabitants of the town generally; the refreshments a jug of caña, from which all took a pull in turn.

* Fra Angelico, of Fiesole.

The occasion of the fête was the death of an infant. The child had been taken to form one of the choir of rejoicing angels, and the parents must manifest their gratitude to the Omnipotent. So friends were summoned; and with the little body gayly attired, and placed upon a platform covered with fragrant flowers, mother, father, and relatives danced merrily, as upon a festive occasion. General Taboado told me that the body would be borrowed by the intimate friends for other dances, until, touched by decay, it would be "sown in dishonor" to be "raised in glory."

Our visit to the town was also the occasion of a ball, given the next evening, in the inclosure fronting the house which I occupied. The arrangements were not more ambitious than those of the "angel's dance." The guests were barefooted generally; and our ball-room was lighted by tallow candles stuck on boards. This was primitive enough; but there was no vulgarity. Drunkenness never disgraces these festive meetings, and the presence of a rowdy inebriate would have caused more sensation here than in more civilized regions. Men and women, utterly uneducated as most of them were, had yet a native dignity of manner that imparted something of elegance even to a Salado ball. Here, bordering on the wilds of the Chaco, where the party may be broken up at any moment by the war-whoop of the savage, dancing is the favorite amusement of the people, and the village belle and the leaders of ton are not the pretty or the rich, but the most graceful in the dance.

Matara has a church; but, until within a few days of our arrival, the inhabitants had been without clerical aid for two years. A priest, who accompanied Governor Taboado with the hope of forming a mission in the Chaco, finding this the case, had remained. The present Pope Pius IX., in the earlier years of his career, labored in La Plata; and many of the clergy at this time are educated foreigners, who, in the work of God, exhibit a noble, self-sacrificing, missionary spirit, and deservedly enjoy great influence. The padre is the friend and adviser of all classes; his house is the radiating point of every village. He is supposed to be incapable of wrong; but when "found wanting," he is most summarily dealt with. The last priest at this village had been banished the state for malpractices.

There were many persons at Matara who had recently fled from the estancias below. The forays of the Indians had at that time become almost monthly occurrences, the savages generally selecting

a moonlight night, and moving in parties large enough to overawe any hastily collected force. They swim or ford the Salado, descend suddenly and noiselessly upon the country; drive off horses and cattle; kill all who oppose them; dash into the river, driving the stolen animals before them; regain the opposite shore, and disappear in the wilds of the Chaco before the dawn of day.

It seems unaccountable that the population upon this river, apparently industrious and physically capable of defense, should not unite to protect themselves; but generally they are without firearms, and the predecessor of Governor Taboado, appointed by Rosas, had done nothing to assist them. At the period of my visit the new Confederation had organized no system of protection, and the few military posts established were sustained entirely by the energy and patriotism of the Taboados and a few kindred spirits.

I append to this chapter a list of the trees and shrubs that I saw in the ride from the town of Santiago to the Salado, and to which my attention was directed by General Taboado.

The *Quebracho Colorado* and *Blanco*. The *Algorroba Blanca* and *Negra;* of these some account has been given. The *Vinal*, the same genus as the algorroba, similar in wood and fruit, but unlike in leaf: an infusion of the latter is a remedy for inflamed eyes, and for this purpose they are sent to Buenos Ayres in considerable quantities for sale: from the trunk and branches project long sharp thorns. The *Quilin*, another of the mimosæ; thorny, as the vinal; foliage and fruit similar to that of the algorroba. The *Chaña;* fruit yellow; as timber, suitable for all purposes where great tenacity is required. The *Mistol*, hard, durable timber. The *Uiñay*, bearing a remarkable flower, which indicates an approaching change of weather. The *Tala*, good timber. The *Puna*, sause, our willow; molle, a shrub, the leaves of which are used as tea. The *Jumi*, the shrub producing potash. The *Quimel*, cactus; large leaf, on which the cochineal feeds. The *Cardon*, cactus; trunk short, but large; branches octagonal. The bee toisimi builds its hive and deposits its honey, which is superior to that of all others, in this cactus. Many varieties of the cactus; among them is one called the ulua, a climber, with large white trumpet-flower. Also a variety of shrubs in bloom, and a delicate species of the epiphyte, the "Flor del Aria," of delicious odor.

CHAPTER XXII.

Bajada Sause.—Women pursued by Indians.—Laguna Toma Caphuyan.—Estancia Gramilla Bracho.—A Night's Sleep interrupted by the Governor's Troop in pursuit of Indians.—Fording the Lagoon.—The Scouts on the Trail.—Indians in Sight.—The White Men defied.—A Charge.—Another Pursuit.—Disappearance in the Forest.—Hunger, Thirst, and a sound Sleep in the Rain.—The old Estancieros.—Hostility of the Indians.—Navicha.—Paso Sandia.—Pastures.—Monte Aquara.—Monte Tigre.—Arrival of an additional Force.—Musquitoes and Rain.—Farther Advance of the Party.—On another Trail.—Swimming the River.—The Volleys.—Indians.—The would-be Captive.—The dying Soldier.—The Bullet and a Cigar.—Monte del Muerta.—The Current running up.—The Return.

On the 20th I left Matara, and at sunset reached Bajada Sause, having made sixteen miles. The men, who moved some hours in advance, had cut a passage through the fallen trees, which were still the only impediments to navigation. The course of the Salado and the physical features of the adjacent lands were precisely those that have been noted above Matara. At the night's bivouac upon the banks our sympathies were strongly excited by finding two distressed women who were hiding from the Indians. Eight weeks before the savages descended upon the neighboring estancias, killed one man, and drove off all the stock they could find. The inhabitants offered no resistance, but fled to the woods, where these two women had been wandering ever since, rarely remaining twenty-four hours in any one place, spending their days upon the banks of the river, and their nights among the thickets of the forests. The only property they had saved was a very small flock of sheep; these, they told us, would at night creep close to them without making the least noise, as if conscious of the vicinage of danger.

From Bajada Sause the bordering lands became more and more depressed, until, about eight miles below, they merged into a vast lagoon called Toma Caphuyan (Tom's Hole), from five to six miles in width, three to four feet deep, and covered with a dense growth of tortora, a species of flag common in the marshes of Eastern Virginia. The men had cut a passage through it wide enough for the boat, but without following the river channel, which was, wherever our course crossed it, two feet deep.

I determined, by taking a land circuit, to avoid, if possible, the labor and time which must be given to cutting through it; for I had satisfied myself as to the nature of the difficulties here presented. The men were accordingly sent ahead for oxen or horses to carry us ashore, where we were fixtures for the night. Our little craft—three feet by eighteen—was rather confined quarters for seven men; but it was better than wading through tortora and water three feet deep. We had a cold, disagreeable time, and at dawn gladly hailed the reappearance of the men. One party attached a strong rope to the boat in front, another was placed behind, and, with a continuous song and shout, bearing down grass and tortora, they pulled and pushed us through nearly three miles of the lagoon to the Estancia del Estado. We had touched dry land upon the property of the State of Santiago—at one time that of the crown of Spain—where now a small herd of cattle alone represented the hundreds of thousands that once ranged over its rich pastures.

September 22*d*. We needed an observation for time, and were glad to reach this estancia early enough for a meridian altitude, which gave our position, latitude 28° 19′ 54″ south, longitude 63° 28′ 58″ west. Again the exploring craft was sent by ox-cart two miles across the country, to the Estancia Gramilla. In following it on horseback we passed through a dense growth of jumi; the ground was white with an incrustation of saltpetre.

At Gramilla the boat was launched, not, as I had hoped, upon the clear waters of a well-defined river, but again upon those of the lagoon, which extended east like a sea. The channel of the Salado was, however, distinguishable, and had a depth of four feet. There was assuredly here a subsidence of the land; for the channel and course of the river had not changed within the memory of man, and yet we passed a house with several feet of water around it, which not many years since stood on comparatively high ground, and was known in the country as Casa Alta; and some distance beyond we glided in four feet water over what was once the site of a flourishing town, Guañagasta. The only remains of it were posts of the indestructible woods of the country, standing like skeletons above water and grass. Thirty years ago this was a place much resorted to by agents of the merchants of Buenos Ayres and Santa Fé, and by the Indians of the Chaco, who exchanged their peltries and honey for tobacco, knives, and hatchets. The skin of the nutria was brought here in vast num-

bers; but during the excessive and long-continued drought of 1827, '28, and '29,* this useful little animal perished or migrated.

At sunset we reached Sause Esquina, once an extensive and well-stocked estancia, now a grassy wilderness, without a mark to indicate its former occupation. The musquitoes not only kept us from sleeping, but swarmed in such numbers that it was with difficulty we got an observation. Our position, distant eight miles from Guañagasta, and one and a half west of the river, was in latitude 28° 26′ 27″ south, longitude 63° 18′ 07″ west. The lagoon was still so filled with grass and tortora that we remained at this place during the 23d to enable the men to get somewhat ahead in cutting a passage through it for the boat.

September 24th. At 3 P.M. we again overtook our men, who were cutting a passage. This was very hard work, and now unnecessary, for I understood perfectly the character of the lagoon. Although we had not yet reached its eastern extremity, we had tracked through it twenty miles of the Salado in a southeast direction. The only difficulties in its navigation arise from grass and tortora, which could be removed in a short time by the laborers of the country, who work for twelve and a half cents per day and a ration. At a rise of six feet above the present level of the river, the tortora would offer no impediment to the passage of a steamer of proper construction, for she could skim over or cut through it without difficulty. I directed the men to make for the nearest point, where we landed and proceeded a mile or two east to "Old Bracho," the position of an abandoned military post, 38 miles from Matara in a right line and one third more by the course of the river—this difference being embraced between Matara and Estancia del Estado. We were now fairly beyond the limits of civilization, and slept with fire-arms by us.

September 25th. We had scarcely settled ourselves for a night's sleep when we were aroused by the sound of an approaching body of horsemen. It proved to be the governor with a detachment of forty cavalry, and as many mounted infantry, in actual pursuit of a large body of Indians, who had, the very day after we left Matara, made a descent upon the estancias of the neighborhood, killed several persons, and driven off herds and flocks. They had crossed the Salado at Bajada Sause, where we met the two women, who again escaped, and had probably watched the move-

* This period is always referred to in the country as the *Gran Seco*—Great Drought.

ments of our party. All was excitement and hurry; the governor would not dismount, for he hoped to intercept or overtake the marauders by passing over to the Chaco through the lagoon, as they would be obliged to follow the bordering plain opposite after recrossing the river.

I requested and obtained permission to join in the chase, as we should be compelled to await the return of the general, who determined to accompany his brother. The military passed on, and we followed as soon as horses could be found. At 9 P.M. we were mounted, and, guided by two soldiers, commenced fording the lagoon through which we had been toiling for some days in the boat. Our horses floundered through mud and water, at times up to the saddle-skirts. Now the guide almost disappeared; then my own horse plunged to such a depth that, ungaucho-like, I would dismount or step aside in water over my long boots, leaving the poor animal to extricate himself.* For a few yards we had a firm bottom, and this, in the darkness, I presumed to be the channel of the Salado.

At 11 P.M. we touched the firm land of the Chaco, and found the governor only awaiting our appearance to begin the march. Anxious to see all the manœuvres in this pursuit of the savages, I took position near General Taboado, who, at the head of the cavalry, moved a little in advance of the infantry, which was led by the governor. In darkness and profound silence, unbroken except by some order given in an under tone, we passed over the plain at a walk. We were on the trail, for the scouts reported, first, a bullock that had strayed from the stolen herd, then remains of a mule, and soon after the tracks of many animals, saying confidently at what hour they had passed a stated point on the preceding day.†

At 5 A.M. on the 26th the order was given to proceed at a fast trot. We passed a smouldering fire, with the remains of a roasted bullock, and a moment later a cloud of dust was observed in the east about a mile ahead. This was caused by the Indians fly-

* When the horse of a gaucho sinks in the mud of a *pantano* he never dismounts, nor urges him on with either whip or spur, but draws up his legs, and keeps his seat until the animal, by his own struggles, is released.

† The natives of the country have such an acute perception in distinguishing the tracks of animals that, without hesitation and with precision, they will state the time at which they were made, and will discriminate between those of the herds of different estancias, and the proportion of bulls, bullocks, or cows, horses or mules.

ing over the plain at full speed, with a drove of horses in advance. The general followed at a rapid gallop, passing abandoned horses and many cattle that had strayed out from the woods, whither they had been hurriedly driven. Twice during this run of three hours the Indians lassoed and mounted fresh horses from the herd. It seemed to be the work of a minute, but each time we gained a little upon them; and after the second change, when within less than a quarter of a mile, a party of the savages turned, rose to their full height upon the bare backs of their animals, as if to count the force in pursuit, and then, with defiant whoop and gestures, challenged them to come on. Up to this moment we had kept pace with the general; but not considering it my duty to be speared, I now took a position aside to watch the fight. There was no hesitation on the part of the handful of soldiers in advance of the main body. They charged at a gallop. The Indians shook their long lances,* dashed into their midst, spearing right and left, and wheeling suddenly, followed at full speed the rest of their party, now almost out of sight. The cacique was wounded, and lost his horse; but seizing that of a wounded soldier, he fled into the forest, followed by some of his men.

Orders having been given to make provision for the safety and comfort of the soldiers who had suffered in the skirmish, the general continued the pursuit at half speed. We passed ricados, horses lanced and abandoned,† cattle, the skins of animals and other trappings; but as we were a second time gaining on the Indians, they suddenly wheeled, and dashed into the forest, which they had closely skirted during the chase, abandoning their horses, and disappearing as completely as if the earth had opened to receive them. This great body of wood, extending a three days' journey, was indeed an impregnable fortress, for its walls of vegetation rendered farther pursuit impossible. The result of this skirmish and chase was the recapture of two hundred horses and two hundred and fifty horned cattle.

As may be supposed, our horses, after floundering through a morass, traveling all night, and without a moment's rest making a run of 36 miles at an unbroken gallop, were fatigued. But five minutes were allowed for a halt; and again at 9 A.M., under a sun of tropical intensity, we were retracing our steps over the

* The Chaco Indian never throws the lance.

† A few Indians have ricados, generally the spoils of their forays. When they abandon a horse broken down, under such circumstances, he is invariably lanced.



PURSUIT OF THE INDIANS.

plain. Now that the excitement of the pursuit was over, we were tormented by thirst. No water was to be had on the march of that long, hot spring day; and our bivouac for the night was near a slightly saline marsh, in which the deep tracks of stray cattle alone afforded a little brackish water. The sufferings of the horses may be imagined, for they had been under the saddle twenty hours, and in that time, with only a rest of five minutes, had made one hundred and twenty miles. Tethered by a lasso, the pasturage of a circle of about one hundred feet across was now their only food. As for ourselves there was neither water, maté, nor food; but spite of hunger and thirst we spread our ponchos on the grass, and slept soundly. At daylight we were again moving along the plain at a walk, for there were no fresh horses, and of those recaptured from the Indians, some were unbroken, while others were in a worse condition than our own.

This day's travel brought us to the Salado, where we had pure fresh water and a supper of asado, the first food we had tasted for forty hours. This was scarcely ended when the rain poured in such torrents as to drive us to the shelter of a deserted ranch, where we remained for some hours like packed herrings. This close stowage was far less comfortable than the wet grass; and at midnight, finding the rain was over, I spread my India-rubber blanket on the pampa, and soon fell into a sound sleep. In the morning I awoke refreshed, as if my night had been passed in the most luxurious apartment. So much for habit and the health of this climate!

I was much impressed by the hardy, patient endurance of the Santiago soldiers. Their only compensation is a suit of clothes, a ration of beef, and a little tobacco; and yet the general told me that they served most cheerfully, rarely deserted, and would make a march of two or three successive days without food or water; and with a sack of pounded parched corn, which each man carries behind him, would uncomplainingly pass through a campaign of two weeks. But when meat is placed before them, they consume the most enormous quantities. A beeve is the usual daily ration for twenty-five men.

In this Indian chase we passed through one hundred and thirty-five miles of the Chaco over a plain or strip of rich pasture-land five miles in breadth, which is bounded on one side by an unbroken forest extending about one hundred and fifty miles north and south, and on the other by the Salado. In returning from their

incursions into Cordova and Santiago, the Indians drive before them large herds and flocks, the plunder of different estancias. Pasturage and water are therefore all-essential; and, to secure these they invariably pass along this plain, coasting the Salado as far as the lake Tostado, where they double the southeastern termination of the forest, and taking their last draught of sweet water, push across north to the Vermejo.

The opposite or Santiago side of the Salado was, before the Revolution, one of the most populous in La Plata. For hundreds of miles pastoral establishments bordered the river, several of them being the property of the crown, and, within the recollection of many, the estancieros resided upon these estates. The Indians, always defiant and hostile, were yet held somewhat in check by the power of Spain. But after the Revolution, encouraged by a knowledge of the civil factions that disturbed the country, and not unfrequently guided by army-deserters or refugees from justice, not only the tribes bordering on the Salado, but migratory hordes from the north, poured down upon these frontier estancias, killed the men, carried their wives and children into hopeless slavery, and, driving before them herds of cattle, regained, without molestation, the interior of the Chaco. These Indians have never learned the use of fire-arms, and, by examining the map, it may be seen how easily a chain of small military posts could have protected the whole Salado country.

Fort Bracho, the eastern frontier post of Santiago, about one and a half miles west of the old position, and in latitude 28° 21′ 15″ south, longitude 63° 12′ west, is simply a collection of well-constructed mud houses, surrounded by a palisade of stout quebracho trunks fifteen feet high. It is commanded by a major, but its use as a military post may be doubted in witnessing the impunity with which the savages continue their forays. The revenues of the state estancias, formerly the crown property, on this river, would at one time have been fully adequate for the defense of the frontier, had they been properly applied by the last governor under Rosas.

The boat was again transported to Narvicha,* six leagues southeast from Fort Bracho and the eastern extremity of the lagoon. From thence I proposed to continue my exploration, accompanied by the governor and a detachment of fifty mounted infantry.

* All proper names here introduced indicate points in the wilderness once known as estancias.

We reached it at sunset on the 1st of October. Instead of an asado of beef we had for supper delicious wild fowl, which abound in the islets of the lagoon.

October 2*d*. We again launched our craft on the Bocaron de Narvicha, a stream which branches off from the Salado, in the lagoon, and rejoins the main channel at Sandia Paso, in latitude 28° 43′ 08″, longitude 62° 58′, nine miles by land and double that distance by water. It had five feet water, but was much obstructed by fallen trees. The banks on both sides were fringed with algorrobas, vinal, and chañar.* Unmistakable marks on banks and trees indicated a rise at high water of six feet above the present level. We soon overtook the men dispatched ahead to make an opening for us, but from that time till sunset advanced slowly. We enjoyed amazingly our asado and the warmth of the bivouac fires around which we settled for the night; but the rain soon after poured in torrents, and obliged us to seek shelter under the dense foliage of the trees, which were a poor protection against such an outpouring of the clouds, continuing throughout the night.

October 3*d*. Under way at an early hour, we soon reached Paso Sandia, the encampment of the general, who honored our arrival with a "*carne con cuero*."† A little beyond this the Salado flowed on, a well-defined and unobstructed stream, about sixty feet wide and from four to six in depth; current half a mile; banks low, abrupt, and indicating a rise of five feet above the present level at the season of high water. At Paso Sandia I found in the surface-soil vast quantities of the minute fresh-water shells seen fifteen and twenty feet below it at Matara. I had now passed over the most difficult part of the Salado in a boat, and had seen enough to convince me of the practicability of its navigation. But this cutting a passage through overhanging and fallen trees promised to be a work of more time than I could well spare; so, relying upon the assurance of the governor's guide, that our course lay directly along it, and that I could touch it at any point, I determined to join his Excellency's party, and proceed by land. We moved along on the right bank, and occasionally tried the depth of the stream by fording or bathing.

October 4*th*. The Salado was now a beautiful and well-defined stream, following a general direction of southeast, through a grassy

* An infusion of the leaves of the chañar is considered in that country an infallible cure for dropsy.

† Beef roasted in the skin.

pampa, belted for miles by noble mimosæ; again its banks were not wooded, but fringed with luxuriant alfalfa, the bright yellow blossoms contrasting gayly with the deep rich green of the grass. At sunset we had made twenty-five miles in a right line, which might be estimated at double that distance by the course of the river. As we advanced, the adjacent lands were undulating, presenting considerable grassy elevations for a pampa country. Winding through it was a broad, verdant, and meadow-like belt, which looked as if it might once have been the bed of a river.

October 5th. We passed over a fine undulating pampa, carpeted as far as the eye could reach with the most luxuriant alfalfa, the Salado winding through it, a bright placid stream skirted by trees. The algorroba, in some parts of La Plata a small bushy tree, was here superb in size and foliage, and as clear of undergrowth and dead limbs as if carefully trimmed. I enjoyed the sunset glories of that spring day, and an hour's rest upon a grassy elevation, from which I viewed the picturesque groups of dark-visaged gauchos. Some were bringing water from the river, others seeking fuel, and many gathered around the bivouac fires watching the asado. The atmosphere was resplendently clear, and the air soft, balmy, and redolent of the fragrance of alfalfa, through which the horses and cattle waded to their bellies. I thought I had never seen a fairer pastoral region. It was once inclosed as the Estancia Doña Lorenza, one among the most celebrated in La Plata. Posts dotted the plain, and traces of canals, by which the water of the Salado was conducted through the lands for irrigation, were the only vestiges of former occupation. Except some miserable captive, not a white man had passed here within the last quarter of a century.

October 6th. From the Estancia Doña Lorenza, which is in latitude 29° 05′ 13″ south, longitude 62° 48′ west, we traveled twenty-three miles, making eighty-three from Fort Bracho. I found the characteristics of river and bordering land varying but little from those noted the 5th. In the course of the day it was repeatedly crossed by fording, touched at every bend, and bathed in at the close of the day's work. It has a width of about eighty feet, and a depth of from four to six. The banks showed no washing; I therefore concluded that, even at the season of high water, there is very little current, and now it was scarcely perceptible. But this may be ascribed somewhat to the early rains eastward and to the "repunte" of the Parana, which had backed the waters up so

far as to neutralize the current and increase the depth of the Salado to nearly its maximum.

October 7th. Our bivouac fires for the night were close to the river, and near a skirting of fine quebrachos, one mile below Paso de Coria, in latitude 29° 13′ 42″ south, longitude 62° 34′ 30″ west. I observed during the day no obstructions to navigation. There was scarcely any current; the waters were clear; and as the river coursed through its green banks, so uniform was its width that it looked like a grand canal. Could we have remained one month longer at Monte Aguara, I believe we might have ascended to Sandia Paso in the Yerba. The plain abounds in a plant, the "caqueja;"* and in other parts of the province there grows a small tree, the "melancillo," which is highly valued for the medicinal properties of its root in cases of diarrhœa.

October 8th. Bivouacked at Monte Tigre, latitude 29° 22′ 32″ south, longitude 62° 22′ west, near a grove of nandubay, the first I had seen upon this river; it is of the mimosa family, and not unlike the algorroba in foliage, but the trunk is larger and straighter, and the bark is very rough.

We passed at every mile or two marks of abandoned estancias. At Viuda, formerly a rich cattle farm, we met a detachment of twenty soldiers from a military post of the Dulce. The governor had ordered them to join him here, for he was now in pursuit of the Indians who had made the last foray into Santiago. Among the soldiers was one who acted as guide or vaqueano. He knew every bend and ford of the Salado, having recently escaped from the Chaco after a captivity of many years among the Indians, who carried him off when he was quite a child.

In the evening the wind was from the south, very fresh, and the rain continuous, pouring in such torrents that ponchos, horse-blankets, etc., formed into a tent, under which the general, Mr. Murdaugh, and Cornelius crept with us, made but a poor protection. Musquitoes, close stowage, and a leaky roof were no provocatives to sleep; but in such sheets did the water continue to fall, that we kept in our quarters until 10 o'clock A.M. of the next morning.

On the 9th we made but fifteen miles, passing numbers of abandoned estancias. The whole country was entirely destitute of wood; not a bush was to be seen, but the alfalfa was rich and

* A tea made of its leaves is, the governor tells me, an infallible remedy for venereal diseases.

fresh; as in a sea we waded through it. This was the beginning of the rainy season, which had set in much earlier than usual. As we advanced southeast the river was full and the lands immediately adjacent almost impassable. The beginning of the night was clear. We had no supper, not even a maté; for there could not be found fuel enough to boil a little water. Not so, however, with our horses; it was pleasant to see them luxuriating in the alfalfa. Myriads of musquitoes and rain—such floods as pour down in these countries during the season—drive away sleep; but on a clear night these pampa apartments, with their starry frescoes, are not bad. A man could scarcely desire a softer bed than the fragrant clover. Our rest was short. At 1 A.M. on the 10th we were in the saddle. Again the rain poured in torrents, and, although it was the second spring month, I shivered; for my India-rubber poncho was a good protection from rain, but a very poor one from cold.

The object of this early move was to surprise a toldo near Laguna Abipones. We had gone but a short distance when we reached the borders of a pantano. As it was very dark and raining hard, the guides thought it prudent to wait for daylight before attempting to cross; so we remained, even in the darkness a black shadow on the borders of the morass. With the first streak of day we were floundering through mud and water, one taking his own way, another closely following the guide. On we went, plunging, whooping, yelling, laughing at our own or others' misfortunes; for some were fixtures, imbedded like fossils, or so firmly planted that they looked as if destined to remain, like the estancia posts, monuments of the life that had passed away; others turned somersets over their horses' heads, regaining their feet only to sink knee-deep in the soft mud. After toiling for two hours through the swamp, we touched terra firma, and reached our halting-place, Islita Chañar,* at 7 A.M. on the 11th, having been in the saddle six hours. Here it was deemed expedient to refresh both horses and men, preparatory to another Indian chase. Fearing that the savages would discover our approach the cooking fires were kindled behind a grove of chañar and kept very low.

After a rest of a few hours we were again in the saddle, and following as closely as we could the windings of the river. Islas of wood, generally chañar, alone broke the monotony of the pam-

* Groves of wood which, on the naked pampa, have the appearance of islands.

pa; the alfalfa was every where exuberant in its growth. Although the governor anticipated a fight with the Indians, before leaving Islita de Chañar he nailed his card against a tree, inviting a *parlamento* (talk)—a mode of invitation well understood by the savages.

After advancing six miles the scouts returned and reported stray cattle and horses. We were undoubtedly on the trail. "They passed day before yesterday toward the Paso de Tostado," said the vaqueanos. The men judged from tracks of the animals, and spoke without hesitation. The general based his movements as confidently on their report as if they had come from the midst of the savages.

We had made about eight miles when, passing a fire, it was presumed that the Indians were in our neighborhood; and the soldiers were ordered to advance at a full gallop to Palo Negro, a belting of that wood. Here we came in sight of a number of horses and cattle on the Chaco side of the Salado. The men dashed down to the river, stripped off their clothing, again mounted, lance in hand, swam across, encircled the animals, and, driving them ahead, regained the opposite bank at the moment that a party of about forty Indians, with a war-whoop, issued from behind a grove of chañar, and made for the Paso Mistol. The grove of chañar in which their toldo was pitched had concealed from them our approach. Extending for some distance on the Chaco bank was a thin growth of bushes, and beyond, parallel with it, a slight elevation. On nearing the Paso the Indians threw themselves down behind the bushes, which, with the long grass, protected them from the unskillful firing of the soldiers, although the distance was not more than thirty yards. Volley after volley was fired into their midst, and after each, one, two, or three of them would rise, and with lightning speed escape amid a shower of bullets, seemingly unharmed. After blazing away for some time the general directed the interpreter to ask them if they would surrender. "Never! San Antonio for ever!" was the cacique's reply. The firing was kept up, and the Indians, apparently untouched, continued to disappear over the hill. I began to think that the whole party had escaped, when one rose up, whose appearance was hailed by a shout and a volley; he fell flat upon his face, as if struck, but in another instant was upon his feet. There was a second round, and again he fell, only to rise again untouched. Up to this moment I remained quietly on my horse, rather

an amused spectator of the firing, for the gaucho soldier is more skillful with the lasso than with the gun, and the Indians believe that their musket-balls may be dodged. The general now turned to me, and said hurriedly,

"Commandante! that is a Cordovase, and a noted reprobate, a villain, a traitor!"

I raised my carbine, and, as the man gained the top of the grassy hillock behind which he would have escaped in another minute, fired, not to kill, but to stop his headway. In an instant he fell upon his knees, and the same moment, throwing up his arms, implored mercy, exclaiming "*soi cautivo*" ("I am a captive")—meaning that he had been carried off by the Indians.

The soldiers were now ordered to the Chaco, and the next minute the river was covered with half-naked gauchos swimming over. After all this expenditure of ammunition, but two dead Indians were found, and the white man, who was wounded in the fleshy part of the thigh, and who at the approach of the soldiers exclaimed, "Spare me! I am a captive." This announcement was received by the men with a loud and derisive laugh. He was known as a native of Cordova; and when dyed with crime had escaped justice by joining the Indians, for whom he had acted as guide in several recent forays. Parties sent out to scour the country on the Chaco side found the toldo, which, from its size, indicated a greater number of Indians than we had supposed, and the articles left behind showed that they had been surprised. This explained the game of the savages at the Paso Mistol, who engaged the attention of their pursuers to insure the escape of the women and children.

The alfalfa of this section of the country was extraordinarily rich, and the Indians had probably anticipated remaining here a long time with their herds, little dreaming of the least disturbance after having for more than a quarter of a century enjoyed the uninterrupted range of the pampa across the Salado. A number of earthen utensils were found, and some few articles recognized as the spoils of their recent expedition; for as the guides asserted, they were the marauders who watched the movements of our party at Bajada Sause, and had advanced two days ahead of us. Among other articles found in their tents were a manta and a head-dress of the cacique. The latter was a sort of helmet, surrounded by ostrich feathers; the manta was made of a soft flexible hide, and covered with feathers.



ATTACK AT PASO MISTOL.

The day's work closed with the capture of about one hundred horses and thirty milch cows, attended, however, with the loss of one of the soldiers, who had engaged in the pursuit, and was mortally wounded in single combat with a powerful Indian. I shall never forget the expression of that poor dying man's face, as with glazed eye and drooping head he was brought on horseback to the Paso, seated behind a comrade. Young, of fine muscular development, and full of fire, he had been among the first to reach the Chaco. In less than an hour the spirit had fled, and the soldier was buried beneath a quebracho. The two bodies of the Indians were put into a hide "balsa,"* as if they had been slaughtered bullocks, and then thrown out on the opposite pampa, for on the part of the gaucho there is toward the Indian a deeply-seated hatred. The wounded Cordovase was carried over with very little more ceremony. The creature appealed to me in the most beseeching terms to extract the ball from his thigh; finding that impossible, he, with the same voice and manner, implored me to give him a cigar. At sight of the bodies of the Indians he broke out into wild and fearful curses. "They had brought him," he said, "to this state," by forcing him to act as their guide. He was an admirable actor, but did not at all impose upon the general, who knew that he was a "*vaqueano voluntario.*" The youthful captives of the savages are sometimes forced into their service as guides, but our prisoner, being well known, was delivered up for punishment to the Governor of Cordova.

We encamped for the night under a skirting of wood near Paso Mistol, which is in latitude 29° 16′ 03″ south, longitude 61° 15′ west. The rain fell in torrents, but I slept through the whole of it under cover of my India-rubber poncho, and on the morning of the 12th was astir at an early hour, and ready for another day's ride.

12*th.* A short distance below the Paso the Salado makes a remarkable circuit: from east it winds to southwest, north to northeast, making within four points every course of the compass; its general direction is southeast. After progressing eight miles, we halted for breakfast at Monte del Muerte, so called because a short time before our visit a female captive had been put to death for attempting to escape. The frame-work of an abandoned toldo here was tied together by the long hair of a white woman. At

* A Salado balsa is a hide caught up at the four corners by a rope of the same material, or a pole, and guided across the river by *madadores* (swimmers).

sunset we halted near the Monte Cueva de Lobo.* It was evident that we were to pass another rainy night; but, making a joint protection of ponchos, we covered a snug tent, under which we slept soundly.

This was the lowest point that we reached on the Salado; a great disappointment to me, for I was anxious to join my work with that completed to Monte Aguara. I have alluded to one of our guides as having lived for many years among the Indians. The governor expressed perfect confidence in the veracity and intelligence of this man, who, during his captivity, had passed repeatedly along the banks of the Salado from Sandia Paso to Monte Aguara, and had crossed and recrossed at various parts of it. I accepted his declaration that the characteristics of the river to the latter point were similar to those noted in the last two days; but to assure myself doubly, I questioned him as to its appearance at and a little below Monte Aguara. His answers corresponded perfectly with my notes. From Sandia Paso to Monte Cueva de Lobo, 134 miles, I had kept along the right bank, and followed nearly every bend of the river south. I forded it repeatedly, halted near it each night, and in returning crossed at Paso Mistol, and followed the left or Chaco bank in the same manner; had there been any obstacle to a continuous navigation, it could not have escaped me. The formation of the country through which it courses forbids the idea of reefs or falls.†

But I have not explained why it was impossible to proceed. The rains had not only set in very early, for they begin generally in November, but, eastward, were unusually heavy. The governor, anxious as myself to unite the two explorations, sent an officer with a detachment of soldiers, guided by the man before mentioned, to note the condition of the country. After an absence of twenty-four hours they returned and reported the river full almost to the level of its banks, and the adjacent pantanos impassable. With great difficulty they had extricated two of their horses. To have followed a circuitous route would have defeated the objects in view; added to this, the governor's provisions were low, and the men on half rations. The heavy rains east had completely neutralized the current of the Salado at this section of it; but

* So called from a small animal, the *lobo* (seal), which abounds in this place.

† While engaged in writing these lines I received the letter that is given in another chapter from Governor Taboado. It will be seen that the Salado is, as I declared, navigable throughout its course.

I was not quite prepared for the statement of a scout, who, before we set out on this exploration, had been sent to watch the movements of the Indians, and who stated that not far from Sandia Paso "the current was running up." I presumed that the man had been perplexed by the sinuosities of the river, and had mistaken *down* for *up*, but I afterward discovered that the assertion had some truth in it. The rains east were so heavy that the supply of water from that direction was far greater than from its upper sources in the western Cordilleras of Salta, and for a time—so little declivity has the bed of the Salado—that the movement seemed to be not from the west, but the east. The estimated direct course from Bracho to Monte Cueva de Lobo was 168 miles, and by the windings of the stream double that distance.

By observation the following are the distances in a right line between the points made by us: From Estancia Taboado to Matara, 51 miles; from Matara to Bracho, 38; Bracho to Narvicha, 17; Narvicha to Mistol, 69; Mistol to Monte Aguara, 81; Monte Aguara to Santa Fé, 88.

The relative distances in a right line and by the course of the river may be thus estimated: From Estancia Taboado to Matara, in a right line, 51 miles; by the river, 110. This may be assumed as a very good standard by which to judge of the others, with the exception of that between Monte Aguara and Santa Fé, which by the river is within a fraction of being four times greater.

On the 14th of October—one month from the time we had launched our boat upon the Salado at Estancia Taboado—we began to retrace our steps from Monte Cueva de Lobo.

CHAPTER XXIII.

Crossing at Paso Mistol.—A Cordon of Posts.—Paso la Torre.—A Wild-goat Chase.—Navigation of the Salado.—Señora Mendez.—Sleep in the Open Air.—Reservoirs of Water.—Drought.—Arrival at Santiago.—A Ball.—Toasts.—Fine Dancing.—River Dulce.—Road to Tucuman.—Approach the Andes.—Woodland.—Rio Tala.—Mountains.—Scenery.—Arrival at Tucuman.—Hotels in La Plata.—Dr. Priestly.—Sugar-Plantation.—Molasses, Sugar, and Rum Establishment.—Cultivation of the Sugar-cane.—A Dinner at Señor Zavalier's.—Señora and her Daughters.—A Ride into the Country.—Scenery.—Dinner and Ball at the Governor's.—Beauty of Spanish-American Women.—Province of Tucuman.—The Capital.—Progress.—Statistics.—Cultivation.—Start for Salta.—Valleys.—Productive Capacity of the Soil.—Wheat.—Mountain Road.—Posta Romero.—The foiled Post-master.—Alimaña.—Grassy Basin.—Destitute Post-master.—Valley Chiguano.—Upper Waters of the Salado.—Products of Valley Chiguano.—River Rosario.—Ford the Arrias.—Arrive at Salta.

October 15th. At Paso Mistol a hide taken from the frame-work of a toldo was in a few minutes converted into a balsa, in which we crossed the Salado, having determined to follow the Chaco side some distance in order to avoid patanos and observe the northern vueltas of the river in returning to Santiago.

The men swam over with the horses. We found a few half-starved howling dogs still hanging around the deserted toldo, and the skeletons of the two Indians who had been killed in the fight with the governor's soldiers bleaching upon the plain. The caranchas had stripped them of every particle of flesh. Six miles from the Paso we reached the little lake Tostado, which, from being one of the never-failing sources of fresh water in the country, is invariably passed by the Indians during their incursions into the provinces. This is the point for a strong military post. After I had completed the exploration of the Salado I addressed a note to the Minister of Foreign Affairs for the Argentine Confederation, Don Juan Maria Gutierrez, expressing my views as to the importance of a cordon of posts to extend from the Parana, nine miles below Goya, to this lake, which would, I think, effectually confine the Indians to the Chaco north of that line, and reclaim from their devastations the finest districts of three states. Such an establishment would render entirely unnecessary the maintenance of those now existing, and would therefore entail no additional annual expenditure upon the government. Señor Gutier-

rez wrote in reply, thanking me in the name of the President for my suggestions, which he thought would be adopted, as they accorded with his Excellency's preconceived notions on the subject.

From the lake—our road being one usually taken by the Indians—was a well-beaten track through a plain clothed with the finest grasses, and, both inland and skirting the Salado, wooded with algorroba and quebracho. There was not a sign of human occupation or a sound to indicate an approach to the scenes of man's industry. The rainy season had fairly set in, and for several nights we slept upon the ground with only the protection of India-rubber ponchos. The incessant drenching to which I was exposed disturbed me, however, less than the myriads of musquitoes that swarm the river courses of the pampas at that season.

On the 16th we still followed the grassy campo, here about seven miles wide, and bounded west by the great forest to which I have alluded; while to the left flowed the Salado, its course marked by a wooded belting. Toward evening we reached that part of the plain to which the soldiers pursued the Indians on the 25th of the past month, when they so suddenly disappeared in the depths of the wood.

Before crossing the river at Paso la Torre we chased a "corzuela," the wild goat of the country, which so closely resembles the small deer that, at a short distance, it might be readily mistaken for one. Notwithstanding the jaded condition of our horses we kept up with the gauchos, who, the moment they espied the little animal, dashed after it at full speed. But, fleet as the deer, it sped over the plain, gaining the river and swimming to the opposite bank before the horsemen were once near enough to throw the bolas or lasso.

On the 17th, with fresh horses and two guides furnished by the governor, we started at an early hour in a heavy rain, and reached Bracho the middle of the same day.

I here ended my examination of the lower waters of the Salado, and feel no hesitation in saying that a steamer properly constructed for this river navigation could ascend, the greater part of the year, from Santa Fé to Navicha. The only obstructions—grass or fallen trees—could be readily removed, without great loss of time, by a boat's crew. But there is no reason why Navicha should be the head of navigation. By removing tortora and barricados, Matara would be quite as accessible and a much more central point, being but forty-one miles from the town of Santia-



GAUCHO.

go, in a right line, one hundred and fifty-three from Tucuman, and one hundred and twenty-eight from Sandia Paso by the river, making the entire distance from Santa Fé to Matara five hundred and eighty-seven nautical miles. By ascending the Salado even to Navicha, the time now consumed in the land route from Santa Fé to Tucuman would be diminished at least three fourths, and the expense of transportation—deducting a large profit—one half.

After obtaining observations of verification we left Bracho, and on the same evening arrived at the ranch of Don Pesado Mendez. We found a humble little thatched house of one room, with a shed in front; for here, as in other districts of Santiago, the inhabitants during the dry season sleep in the open air, and trouble themselves little about in-door arrangements. Señora Mendez gave us an excellent supper of hominy and lamb, and the Don offered me the use of his hide cot. We passed, in our ride from Bracho, some fine fields of wheat and corn, but many of the ranchos were deserted, their owners being still at Matara or concealed in the wood, whither they had fled from the last attack of the Indians. It was a melancholy spectacle to see a country thus

desolated, and after witnessing the courage with which the Santiaganians pursued the Indians and received a charge from them on the plain, I may repeat what Dobrizhoffer noted a hundred years ago: "The inhabitants of the district of Santiago are distinguished alike for the greatness of their valor and the scantiness of their means in war against the savages."

After some little detention at Matara, arising from the difficulty of obtaining horses, we continued our journey, and at two o'clock arrived at the ranch of an old man, who, though disturbed in his first nap, proved good-natured and hospitable to the extent of his means. Fortunately, at this moment one of the postillions, a good fellow and a shrewd provident caterer, produced from his traveling stores half of a kid, upon which we made a sumptuous feast. The master of the ranch offered me his cot, but I preferred the grass. The rain beating in my face awakened me at 4 A.M., and with the dawn we were in the saddle, Cornelius having first performed the important function of ministering to us the maté.

October 18*th.* We had now entered a region neither artificially irrigated nor as yet refreshed by the commencement of the periodical rains. The grass was brown and the vegetation generally so blighted that the country would have presented a desolate appearance but for the fine woodlands that intersected it. The quebracho-trees were the loftiest I had yet seen in the Confederation. In this district I saw for the first time enormous reservoirs for the collection of rain-water. They are mere excavations protected by embankments of earth; one of a hundred feet in diameter, by a depth of twelve, affords an unfailing supply to a large number of cattle. At the estancia of Don Francisco Santiago, who was largely engaged in rearing mules, was one of still greater dimensions. We dined with this gentleman, whose household was most comfortably arranged, and presided over by a wife and two pretty daughters.

Through some mismanagement the governor's orders to furnish us with fresh horses had not been received, and we were compelled to make the last fifty-one miles of this journey upon the same animals which, unaware of the difficulty in obtaining others, we had ridden in the early part of the day twenty miles at half speed. They held out, however, and on reaching Santiago at 9 P.M. we rode directly to the residence of the governor, who had not yet arrived, but we were most kindly received by his brother Don Gaspar.

No representation of a want of time or dress appropriated to such an occasion would be received by the Santiaganians as an excuse for declining the honor of a public ball. On the 24th I met at the government-house all the beauty and fashion of Santiago, and most lovely were some of the women. The music, refreshments, indeed all the arrangements of this ball were admirable; and when daylight peered through the latticed blinds the gay assembly had by no means diminished. Waltzes, polkas, and mazurkas were all introduced in the course of the evening; but I was charmed with the *fedral*, the *garto*, and other Spanish dances, in which the grace of the women was inimitable. At the supper-table Don Francisco Archibal, in referring to the occasion of the ball, alluded also to the progress and prosperity of the United States, and the obligation our government had conferred upon their country by the happy results of the expedition sent to examine into its river system.

On the 27th I started for Tucuman, accompanied for a short distance by some of the most prominent citizens of Santiago. Our road for six leagues lay along the south side of the Dulce, which throughout that distance is very unvarying in width and other characteristics. It is a quarter of a mile wide, and intersected by numerous sand-flats, which interrupt the regular course of the channel; current two miles; banks low. During the rise, which is from ten to twelve feet, the bordering lands for some distance on both sides are often inundated. Judging from the appearance of its bed and the number of streams that disembogue in this river, its volume of water must exceed that of the Salado, and yet it is represented as losing itself in the Lake Porongas. The adjacent country is well wooded with algorroba, vinal, and quebracho; the open lands are populous and cultivated; the soil is a rich dark alluvium, covering a friable limestone.

Leaving the river, we passed through a sandy district abounding in salinas—shallow, being lakes which are, during the season of drought, converted by solar evaporation into fields of a fine quality of snow-white salt. At 9 P.M. we reached Gramilla, having made twenty-two leagues. It was a clear bright night, and, as usual, we slept in the open air, with poncho and saddle for bed and bedding. But our rest was disturbed by a party of musicians at the posta, who, with an untuned harp, a rustic guitar, and singing, made more noise than harmony.

October 28th. After maté and milk fresh from the cow we were

again in the saddle at 6 A.M., and at the distance of four leagues made Bargual, a settlement of a few houses near the dividing line between Santiago and Tucuman. From Gramilla to Bargual there was some wheat growing, of apparently excellent quality, which yielded, I was told, fifteen bushels to the acre. Where not inclosed for culture, the face of the country was verdant with fine pastures, which were overspread with herds of cattle and flocks of sheep—a change not due to artificial irrigation, but to the proximity of the mountains.

From Bargual we approached in a westerly course the mountains. They are a continuation of the range known as the Sierras of Cordova, at the base of which, upon a broad, well-watered, and fruitful plain, is the capital of Tucuman. In the distance rose the mountains of Catamarca, presenting at first the appearance of a heap of clouds; and again, as we advanced, of an island at sea, the base of which is yet hid below the horizon.

Before crossing the Dulce, or Tala, which courses a mile and a half east of the city of Tucuman, we passed through a fine tract of woodland. The air was redolent with the perfume of acacias through a natural avenue of which the road lay. But rising above all minor growth of mimosæ was the cevil—as embellishing to its native forests as useful in the industrial establishments of the country. Its smooth, tall, limbless trunk has an umbrella-shaped crowning, every bough and twig of which is completely hidden by a mass of deep green fringed foliage, and at the season of bloom by clusters of delicate white flowers. In this forest ride we had the enlivenment of nature's gay-plumaged vocalists, and, as in many parts of La Plata, trunks and limbs of trees were inwrapped and festooned with beautiful climbing plants. The dews are very copious, and their refreshing influence, as well as that of an admirable system of natural and artificial irrigation by a distribution of the waters of the Dulce, or Tala, was very apparent in the increased exuberance and activity of vegetation.

Weary of the monotony of grassy levels, imposingly grand, refreshing to all the senses was the panorama of mountains that opened before us as we emerged from the forest. These were not the insulated masses or the hillocks of the pampas, but parts of a great system—a section of the Andean ranges. Now clearly defined, the Sierras of Catamarca, their highest summits white with perpetual snows, bounded the horizon west, and from them extended east, diminishing in height with the regularity of successive

steps, a series of sierras and serranias. North, and some two or three miles from the city, opened a broad longitudinal valley, inclosed west by the principal range, and east by a detached elevation. The serranias, with their bare but verdant summits and slopes clothed with majestic forests, had all the stately proportion of mountains; and between them were grassy ridges several hundred feet in height, sloping gently to lateral valleys, watered by many small rivers which find an outlet in the Tala at distances varying from one to twelve leagues. These tributaries, named in succession from Tucuman south, are the Lules, Colorado, Farmailla, Aranilla, Mondolo, Montaro, Pueblo, Viego Seco, Conventilla, Ramado, Medcinas, Chico, Marapa, and Señor Francisco. It is at the confluence of this last named stream with the Dulce that this river assumes the name of Hondo, which it retains until it enters the province of Santiago.

Fatigued by a long day's ride under an almost vertical sun, we entered the city of Tucuman, rode directly to the plaza, and inquired for the *fonda* (tavern). After some hesitation we were directed to a gloomy-looking building, distinguished by the sign of a chicken-cock; but our disappointment may be imagined when we were told that no quarters were to be had. There are few hotels in these provinces, and it is the custom for travelers to be passed from one town to another by friends and acquaintances through letters of introduction. I had been furnished with many such passports from Santiaganians, and though enjoined to present them, I was unwilling to impose a party of three on the hospitality of a private family without first trying to procure rooms.

Having heard that there was an English physician residing in Tucuman, to his house I next turned from the sign of the chicken-cock. We found the residence of Dr. Priestly, and of a person who opened the door I inquired for "*el Señor Medico.*" Softer and more grateful than the *Pasa adelante* of the Spanish was the cheerful "Walk in, Sir" of an honest-faced Englishman. To make any port in a storm was with me, in my wanderings, an established rule; but here we "came to" in a snug harbor—the home of as fine a specimen of an English gentleman as can be found among the lady sovereign's subjects. Most noble, and beautiful, and impressive was our mother tongue in those remote regions, from the lips of a perfect stranger, who invited us with such unhesitating cordiality to "share the discomforts of my temporary bachelor establishment."

A few months before our arrival, Dr. Priestly, in crossing the continent from the Atlantic to the Pacific coast, had stopped at Tucuman, where he was induced to establish himself for the practice of his profession. He is a man of finished education and fine manners, and so popular was he personally, and so esteemed as a surgeon, that the calls upon him for professional service day and night would have given full occupation to two more physicians. He was well and punctually paid; and although he considered himself but a temporary resident, the really pleasant society of the mountain city and its fine climate will probably enchain the doctor for many years to come.

I had scarcely shaken off a little of the dust of travel, when several of the most prominent of the citizens of Tucuman called and begged me to consider their "houses at my disposition." At a later hour two gentlemen came to invite us to a ball at the governor's—an honor which, from fatigue, I declined.

October 29th. Visited the governor, Don José Maria de Campo, and was presented by the Minister of State, Señor Posé. Here, as in Santiago, I found it quite unnecessary to enter into any explanation as to the object of my visit to the western states, for news of the expedition had preceded my arrival, and the reception given me by his Excellency was most flattering.

On the afternoon of the same day I rode some two and a half miles in the country to visit the sugar-plantation of a wealthy citizen of Tucuman. This property is between the first step of the sierra, west, and the city; and though the road to it lay through what was to the eye a horizontal plain, by observing the streams of water, I found that it sloped upward the whole distance. After riding over a large part of the estate, which embraced several square leagues, and was irrigated by a network of miniature aqueducts, we visited the establishment connected with it, from which the Tucumanos derive their chief supplies of sugar, rum, and molasses. The machinery used was of the rudest description; indeed there was none save upright wooden rollers, and there was not only great loss in expressing the saccharine matter, but very unnecessary labor and expense incurred in obtaining fuel and removing the refuse cane to a distance. The owner of this property seemed to be unaware of a more economical system, and expressed some astonishment when I told him that in other countries the refuse cane constituted the chief fuel on the largest sugar-plantations. The sirup was poured into

conical jars, placed with the apex downward, and open, but sufficiently obstructed to admit of the filtration of the treacle; leaving the sugar a solid mass moulded to the form of the jar, and ready for use. The cane is planted in May, and first crop cut in July, the following year; but from this product molasses and rum alone are made.

The country between the Dulce and the serranias west of it is most admirably adapted to the culture of the sugar-cane and rice, not only from soil and climate, but also from the many and never-failing rivulets that intersect it, and from which the most extensive system of irrigation could be carried out. In the immediate vicinity of the city, plantations of one and a half to two leagues, possessing every advantage of wood and water, are valued at $3000, and they diminish in price in proportion to their distance from the capital. Sugar made in the neighborhood is sold in Tucuman at twelve and fifteen cents the pound; but the supply is inadequate to the demand. Laborers are as much needed here as in other parts of the Confederation, save Santiago; and, with their introduction and that of improved machinery,* the State of Tucuman could not only supply the home demand, but that of neighboring provinces with sugar and rice. The value of land is said to have greatly increased since the adoption of the present constitution and the union of the states. Laborers command six dollars per month.

October 30th. I received a visit from Don Sebastiano Zavalier, which was followed by an invitation to a dinner at his house, where, on the 30th, I met a large company of the leading citizens of the place. The remoteness of Tucuman from all other centres of civilization, even in La Plata, must be my excuse for alluding specially to this entertainment, all the arrangements of which were as elegant as could be met with in the well-appointed mansions of any country. A variety of native and foreign wines of fine quality circulated freely. Our host gave us his toast: "The three great epochs in the country's history: the independence, the fall of Rosas, and the discovery of the navigability of the Salado." Other complimentary speeches and sentiments followed. The Constitution of the United States was named as the model after

* In compliance with a promise made at the time, I have, since my return, sent to a gentleman of Tucuman, who was anxious to introduce improved machinery for making sugar, cleaning rice, etc., the published catalogue of one of the most extensive manufacturers of machinery in this country.

which their own had been framed; our government as the earliest to recognize their independence; and our explorations as the first to establish the fact of their possessing an outlet to the Atlantic by a navigable river. I replied in a speech which was, I fear, only remarkable for the indifferent Spanish in which it was expressed. After cigars and coffee we repaired to the drawing-room—a cool spacious apartment opening upon the patio—where I was presented to Señora Zavalier and her two pretty daughters. The musical talent of the latter astonished me, for I understood the señora to say that these ladies had been educated in Tucuman. Their instrumentation was such as is rarely heard in the private circles of the United States; and the piano, which had been transported some nine hundred miles or more by ox-wagons, was in admirable condition.

October 31*st.* By appointment I joined Señor Posé, our friend the doctor, and several other gentlemen, in an excursion to the country. A ride of two or three miles over a part of the plain, dotted by a few dwellings, which were generally shaded by fine trees, and surrounded by cultivated fields, brought us to the base of one of the steps of the Cordillera. Passing through a forest of noble trees, which looked as if they might represent a growth of many centuries, we reached the unwooded but grassy summit of the mountain. Here the landscapes spread out around us, brilliant with the many tints, the light and shadows which in tropical countries so enrich the views of nature, were extraordinarily varied, and in their characteristic elements we recognized much both of the majesty and beauty of creation. West, the snow-capped summits of the Catamarca Mountains towered majestically above all lesser eminences; north and south extended a lower range longitudinally; and east was the plain of Tucuman, stretching out to those vast and grassy levels through which we had wandered for so many months. Southward through it flowed the Tala or Dulce, its windings marked by a belt of wood, narrowing to a mere dark, thread-like line, until, with all other objects, it was lost in the blending of clouds and plain in the azure that bounded the horizon. At one point only, where the river makes a sudden bend east, were its waters visible, sparkling like burnished metal in the intense light that flooded the plain. The eye embraced, within the limits of a few miles, the vegetation of all zones. We looked down upon fields of ceralia, sugar-plantations, and orange-groves; upon rich pasture-lands overspread with herds

of cattle; into a series of valleys, with their miniature river system—a beautiful physical feature, and a beneficent provision for the economy of nature in these regions of periodical rains. The air was deliciously temperate; we inhaled the delicious tropical aromas; yet within a short distance of us were regions exhibiting all the dreary phenomena of perpetual winter.

Passing over the serranias by a winding road, we descended into a valley watered by a small river, along which extended the Estancia San Javier, the property of one of the gentlemen of our party, where I passed the night. We bagged several brace of the large partridge, which seemed to be a characteristic bird of the country.

November 2*d.* Dined at the governor's, where I met several of the principal citizens of Tucuman. The dinner was followed by a ball. Three rooms were crowded to excess, and many of the fairer portion of the guests were well dressed and handsome, fully meeting the noblest and most popular idea of the Spanish type of beauty. But it is the grace of the women, the *suaviter in modo* of the men, that most astonish a traveler in La Plata; for few of the inhabitants of the interior provinces had enjoyed even that intercourse with foreign society which a visit to Buenos Ayres would give; and as books, and especially new books, were not among their luxuries, they had not even the opportunities which they would afford of acquiring a knowledge of the conventionalities of other countries.

That vast region conquered by the Spanish of Peru, which extended north to the district of Tarifa, south to the Magellanic plains, east to the territory of Buenos Ayres, and west to the mountains of Chili, now covers the limits of some half dozen of the western states of the Confederation. It was first entered in 1543 by Don Diego Rojas, and some years later by Juan Nuñez de Prado, who called it Tucuman in honor of Tucumamahao, a principal cacique of one of its aboriginal tribes, with whom he formed an alliance. The present state of Tucuman is one of the smallest in the Confederation; but from its varied and productive soil, noble physical features, and amenity of climate, it perhaps merits the proud appellation it enjoys, "Garden of the United Provinces." The hostility of savages and intestine wars have not been the only calamities of the western provinces. They have been disturbed by convulsions of nature—inundations and earthquakes—which have caused many changes in the face of the coun-

try. San Miguel de Tucuman was founded in 1565 by Don Diego de Villaroel on a branch of the Dulce, about twelve miles from the site of the present town, whither the inhabitants removed in 1685, in consequence of an inundation which swept away a large part of the old capital.

In 1844 an earthquake, which was felt over an immense tract of country, extending through two or three of the west provinces, did some injury to the city of Tucuman, which stands on a well-wooded fertile plain, in latitude 26° 51′* south, longitude, approximately, 66° west, and is supposed to contain at this time twelve thousand inhabitants. Its narrow streets intersect each other at right angles. Many of the houses are brick and very spacious, inclosing patios or courts; some few have *altos*, or second stories. The cathedral, which is upon the plaza, is being remodeled; and, judging from the design, it will, when completed, be an imposing church edifice. There were also several private residences in course of construction. Indeed, the whole town presented an aspect of progress and prosperity; and I was induced to believe, from the tone which seemed to pervade society, that there was a fixed determination among the most respectable members of the community to sustain a constitutional government, a union of the states, the maintenance of peace, and the adoption of energetic measures to develop the resources of the state. The first step was to encourage the immigration of an industrial population.

Among other new enterprises, a vivacious, energetic Frenchman, notwithstanding the expense and difficulties of obtaining ice from the mountains by mule transportation, furnished the Tucumanos with an abundant supply of excellent water and cream ices.

The province is divided into nine departments or districts, the aggregate population of which, at the present time, amounts to 88,511 souls, of whom there are 23,128 men, and 27,877 women, an excess of 4749 women.† This arises from the numerous civil wars in which the Confederation was involved from the period of its independence to the downfall of Rosas. Among the children, the excess, though small—700—is in favor of males. The value of products for the year 1854 was 1,755,250 dollars, of which the value of 847,000 dollars was consumed in the province, and the remainder in the neighboring states. The principal

* Determined by Mr. Murdaugh.

† From statistical information furnished by the Minister of State.

products are corn, tobacco, wheat, sugar, rice, rum, hides, sole-leather, tanned calf-skins, cattle, woolen fabrics, oranges, cheese, carretas, and a number of minor manufactured articles. The market price of some of these articles for 1854 was kindly furnished me by the governor's minister, Don José Posé: Corn, 50 cents per bushel; tobacco, 8 cents the pound; wheat, 80 cents the bushel; sugar, 12 cents the pound; rice, 3 cents; rum (*caña*), $17 the barrel; hides, $1 50 each; sole-leather, $4 the skin; calf-skin, tanned, $2; carretas, $50 each. Of these the principal articles of trade with the neighboring provinces are cattle, hides, leather, carretas, manufactured articles of wool, tobacco, corn, rum, and sugar.

I present also an estimate, derived from a reliable source, of the expenses incident to the purchase and cultivation of a *quadra** of land, inclosed in the usual manner by a ditch or cactus hedge, and the probable receipts of the same from the cultivation of tobacco. The cost of the land assumed in this case is unusually great, and must be received as an indication that the position is very desirable.

Cost of land inclosed	$50 00
Four plows complete, at $4	16 00
Eight oxen accustomed to plow, at $20	160 00
One carreta, or wagon	30 00
Two sheds for tobacco	120 00
Necessary implements	24 00
Total cost	$400 00
Charges on $400 at 12 per cent.	$48 00
Three laborers, 8 months, at $8 per month	192 00
One laborer during the year, $8 per month	96 00
Storage of tobacco	100 00
Tax on a quadra of land	2 00
Total expenses	$438 00
The product of a quadra of land in tobacco, 500 arobas, at $2, or 12,000 pounds at 8 cents	$1000 00
From which deduct the expenses	438 00
And we have the net remainder	$562 00

After a week's sojourn at Tucuman, having obtained such observations as the means at my disposal admitted—for the chronometer had failed to maintain such a regularity of rate as to give

* One hundred and fifty yards square.

satisfactory results—on the 4th of November, at 10 o'clock A.M., I started for Salta.

In my journeys in those provinces I observed that the most wretched-looking horses were furnished us in starting from the large towns. Those given us at Tucuman were no exception; but I had learned to disregard appearances. With the sierra of Candelaria upon the right, our road lay through the broad valley, which was seen at a distance in approaching Tucuman; it was intersected by several streams; soil sandy, with some cultivation of wheat; but country sparsely populated for fourteen leagues. From this we passed into a second valley, Bepos, verdant, fertile, well watered, and enameled by luxuriant fields of wheat; its whole aspect contrasting impressively with the rugged sierras which bound it on either side. The habitations of adobe, thatched with grass, resembled country houses of Santiago, but were entirely unlike those in the southern part of the province.

At sunset we reached the Posta Asequion, having thus, notwithstanding the late hour at which we left Tucuman—10 o'clock A.M.—made twenty leagues. The soil between the two last postas, a distance of six leagues, was light and sandy. I was therefore astonished to learn from the master of the posta that the product of wheat was about fifty-six for one, that is, from the seed of one *almude* they reap seven *cargas*.* I suppose my manner implied a doubt, for he enforced his assertion with great earnestness: "*Si, Señor, es verdad.*"

It is very difficult to obtain information from the country people themselves as to the capacity of the soil. When I asked the simple questions, "What quantity of wheat will you reap from the seed of an almude or fanega? Upon how much land will you sow that quantity of seed?" they were generally answered with an impatient "*Non se, Señor;*" while the countenance of the individual questioned, indicated either astonishment or irritation. My own impression is that, where naturally or artificially watered, the fruitfulness of the valleys is excessive, though the soil is light.

At Asequion I fixed my bedding, horse-blanket and poncho, upon a bench made of half a tree, within the posta, a miserable ranch of one room, ten by twelve, where I had as neighbors the master, his wife, cat, chickens, etc. But I soon repented of my boldness, for though assured that there were no fleas, I was attacked on all sides by vermin, and gladly made my escape with

* A carga, in this province, is equal to eight almudes.

the dawn of day. The total absence of every comfort and neglect of the smallest preparation for the accommodation of travelers at these postas is a reproach to the beautiful province of Tucuman. The horses furnished us were the most wretched-looking animals I had yet seen in the Confederation; but, as an evidence that the stock is not bad, I must observe that when they did not actually break down they exhibited both strength and speed. The inhabitants of the country seemed to have no idea of time, and, when assured that horses would be ready at daylight, I always knew that we might expect them four hours later. I have often thought that if some enterprising Yankee clock-peddler would penetrate into those regions, and induce the purchase of his wares, he would be a national benefactor.

We got off at half past seven, although we had ordered the horses at four, and reached Tala, six leagues, in one hour and a half. A few minutes before arriving at this place, we forded the river of the same name, in the characteristics of which, at this distance west, I found but few changes. Its wide bed was intersected by sand-shoals, and the banks on either side were fringed with a dense growth of algorroba and tala. We had, before reaching this stream, entered the province of Salta, but what course the division line takes I was unable to learn; for unless the boundaries of the provinces are defined by some prominent physical feature, they are entirely unknown.

From this point we had the choice of two routes to Salta; one through the plains, the *camino carril* (cart road); the other, *el camino de las cuestas* (road of the hills). With the assurance that there was no difficulty in procuring horses I took the latter, intending to return by the plains. At the Posta Antonio Lopez, said to be three leagues from Tala, actually but two, we began the ascent of the mountains, but a thick mist that enveloped us like a mantle, and a drizzling rain, deprived me of the enjoyment I had anticipated from the scenery. The path, at the beginning of the ascent narrow and slippery, became more difficult as we advanced, and toward the summit was in some places really frightful. Our horses frequently lost foothold upon the smooth rock, and would slide some distance before regaining their feet. Sometimes the path was barely wide enough for a single horseman, with a perpendicular wall of rock rising for several hundred feet on one side, and a precipice of equal depth on the other; here the animals seemed to brace themselves, and cautiously

moved on as if fully aware that one false step would precipitate us into the depths below. After an unpleasant ride of two hours and a half, with the constant apprehension of a slide that would send us into the abyss, we reached at sunset the summit of the mountain, and stopped for the night at the Posta Romero. Cold, wet, and tired, I had made a miserable anchorage, but improved matters a little by the promise of ample pay to the old woman at the posta, and a good supper to our postillions, who preferred this port to a night's ride in returning. They soon built up a blazing fire, and with a kid from the post-master's flock, coffee and cigars from our stores, we had a good supper, and smoked ourselves and the whole party into good humor.

An accomplished entomologist would have found varied objects of interest in this ranch, within which the heavy rain obliged us to spread our blankets. Insects innumerable, armies of vermin, attacked us front, flank, and rear, until, maddened by the onslaught, I charged into the open air, and escaped the enemy by making my bed upon the wet ground.

At an early hour we continued our journey, passing along the ridges of the cuestas, with a bright, clear, invigorating atmosphere, and enjoyed excessively the varied scenery of mountains from base to summit clothed with grass, of valleys bright with herbage and watered by many rivulets, over which projected huge masses and cliffs of reddish sandstone.

Four leagues from Romero we reached Sause, where we met the most uncivil people yet seen in the course of my travels. A post-road formerly passed this place, and, although abandoned by the government, it is still used by travelers, and we had been assured that we would here meet with better horses than any yet seen. But there were none for us. I saw through this move; it was an attempt—and one of rare occurrence—to extort money; for the sum I offered, although double the postal charge, did not meet their expectations. Directing the postillions to follow, I coolly moved off on the Romero horses, leaving our friend the the post-master, with folded arms and an astonished air, to meditate upon my obstinacy. The postillion complained, but with the promise of extra pay became reconciled to extra duty.

Five leagues from Sause we entered a grassy valley, or, more properly, a basin; for although a league in diameter, viewed from any point, it seemed entirely surrounded by mountains. Through it flowed eastwardly a considerable stream, the "Rio del Pampa,"

which, from its course and volume of water, I should suppose must be a tributary of the Salado.

We arrived at the Posta Chariqui early in the afternoon; but, owing to the absence of the master, who did not reach home until after night, we were unable to proceed; for I was unwilling to subject to a more severe test either the temper of our postillion or the strength of the horses, upon which we had traveled over mountain roads ten leagues. In this neighborhood I saw some excellent fields of wheat, good houses, and small flocks of sheep. The post-master was civil, obliging, and punctual to his word; for at dawn he was off in search of horses, and in a reasonable time we were ascending a rugged sierra, near the summit of which was a miserable hovel, the Posta Alimaña. The appearance and manners of the master were as rugged as the rocks among which he was domiciled. He was, he said, wretchedly poor, could give us nothing to eat, and could furnish no horses. When informed that we would pay for all accommodation; that for five horses, three saddle and two cargaro animals, with a postillion to each, I would pay—"How much?" he asked, eagerly. "One real"—double the usual charge—his memory was suddenly refreshed, and he remembered that he could give us all we wanted. A boiled fowl defied knives and teeth; but with soup and *masamora* (hominy), served in a wooden bowl, we made a satisfactory meal. In fine spirits we began the descent of the mountain, through rocky ravines; and at a distance of six leagues entered the plain, and were again upon the regular line of postas.

No traveler should follow this route during the rainy season, for a slip or false step of his horse at certain points—and of these there are several—would inevitably be certain death. For the same reason he should so regulate his departure from the postas as not to be on the road at night.

Soon after reaching the plain we passed the settlement of Sause, and, two miles beyond, entered a broad, lovely valley, Chiguano, bounded west by the main sierra, a continuation of the range seen at Cordova and afterward at Tucuman, and east by a spur of the first. Through this valley flowed the upper waters of the river we had been exploring—the Salado—here known as the San Carlos; a little lower as Guaychipas; lower still as the Pasaje; and finally Salado—a name which, as we have shown, it maintains from the Province of Santiago to the Parana. The whole country exhibited the most cheering evidences of man's industry.

The cultivation of wheat was extensive, and near Guaychipas—a village of well-built houses—figs, grapes, and peaches were growing in perfection.

November 8th. Forded the Guaychipas, here divided by a narrow strip of land, which at the season of high water is inundated. The main branch has a width of about eighty yards; banks six feet above the water-level.

After passing this stream our road lay north through the same valley for a distance of fourteen leagues. The country was well watered and cultivated in wheat, corn, tobacco, sugar-cane, and cotton. Wheat, owing to the humidity of the atmosphere, is subject to a disease similar to that known with us as the rust; but in good seasons the average yield is from twenty to thirty for one, and for home consumption it commands readily one dollar and sixty cents the bushel. The other articles named as products were cultivated to a limited extent, but with such success as to demonstrate fully the admirable adaptation of soil and climate to their growth.

November 9th. Near the Posta las Percas, distant eight leagues from Salta, we crossed the dry bed of the River Rosario, which is during the rainy season a rapid stream; it is a tributary of the Guaychipas. The direction of the valley was still north.

The sun was setting when we left Percas, but by a little extra compensation I persuaded the master to allow us to continue on with the same horses to Salta. When within one mile of the city we forded the River Arias, another tributary of the Guaychipas. It was too dark to obtain any correct idea of its characteristics, except that it seemed to be a considerable stream. We reached Salta at 10 o'clock P.M.

CHAPTER XXIV.

A Night at a Zambo.—Messrs. Pelacio.—Acts of Courtesy.—Province of Salta.—Population.—Products.—Salinas.—The Capital.—Advantages of Salado Navigation.—Mules.—Leather and Wool.—Trees.—The Pacaray.—Silk Rolls.—Wheat.—Copper.—Governor.—Music and Dancing.—Exiled Bolivians.—Revolutionary state of Bolivia.—Departure from Salta.—Tropas of Asses.—Lake Cabo.—Simbola.—Rivers Pasaje and Las Piedras.—Forests.—Little Use of Milk in La Plata.—Forest of Sevil.—Don Martin Güemes.—Breakfast in the Forest.—Stage-coach.—Ferry-boats.—Beauty of Country.—Arrival at Tucuman.—Horseback Travel.—Gaucho Life.—Visit from the Governor.—Map of the Province of Tucuman.—Farewell to Friends in Tucuman.—Day's Ride.—Dulce Boat.—Santiago and Reception at the Governor's.—Head Waters of the Salado.—Laboring Classes in Santiago.—Hospitality of Spanish-Americans.—Harvest.—Narrow Escape.—Horses.—A Cordova Posta.—Fined for fast Riding.—Leave Cordova.—Return Route across the Pampas.—Galera from Rosario.—Diligencia.—River Tercero.—Tropa of Mules from San Juan.—River Quarto.—Fording the Quarto.—Pop-corn Party.—Division Line between Cordova and Santa Fé.—Postillion.—Growth of Rosario.—British Consul.—Farther Examinations of La Plata Channels.—Preparations for Departure.—Letters of Recall.—Boatswain's Call.—Germantown.—Lieutenant Ridgely.—Home.

THERE is no hotel in Salta, and, profiting by the experience of the past, I determined at once to deliver the letters of a Santiago friend to his relatives, the Messrs. Pelacio. On riding up to their residence we were told that all the gentlemen of the family were at the theatre. The postillion then suggested a zambo, a sort of "drover's stand," where mule-drivers stop for shelter only, as they travel with their own supplies of food, blankets, etc. It was a large one-storied building, surrounded by a court, upon which opened all the rooms, which were evidently designed originally for a more elegant purpose. With an air of great self-satisfaction the master showed us an apartment carpeted with the accumulated dust of months, gracefully hung with cobwebs, and luxuriously furnished with an old table on three legs, to which were added, for our particular accommodation, two chairs. With this service he seemed to think he had met every reasonable demand, and I had been too long a wanderer in the wilderness to be dainty; so we took possession, spread our blankets on the bricks, and then sallied forth in search of a café, where we obtained an excellent supper.

November 11*th.* Don Santiago Pelacio and his brother, who call-

ed at an early hour, were much amused and provoked at the wretched accommodation of our first night in Salta, and insisted upon my returning with them to their house. This visit was followed immediately by one from the brother of Señora Zavalier, whose husband was absent, claiming us as her guests; for, having heard of my intended visit, she had prepared rooms for us. This lady had, two years before the period of my visit to Salta, been offered a passage on the Water Witch from Rosario to Parana, and now desired to show her appreciation of this little act of courtesy. After much amicable discussion between the two parties, it was arranged that I should go to Señor Pelacio's, but each day of my stay at Salta should breakfast, dine, or sup with the señora.

Salta is divided into three departments, Salta, Jujuy, and Oran, and is supposed to contain a population of sixty thousand souls. The climate of the valleys is more humid and perhaps less salubrious than that of Tucuman; but the Saltenos likewise boast that, within the limits of their state, they possess the vegetation of all zones. While one department yields the products of the tropics, another has the fruits and the grains of a temperate region; and again, there are districts where the cold is intense, and mountains rise to the height of perpetual snow—districts extraordinarily rich in mineral treasures,* and abounding in many species of animal life particularly useful to man, such as the alapaca, vicuña, guanaco, and chinchilla. This state has also vast salinas, from which the salt, hard and granulated, is cut in great blocks. But the most productive mines have been, and still are, its pasture-lands, watered by mountain streams. To this province, as to Santiago, are brought vast numbers of young mules from the eastern states, to be fattened for the Bolivian and Peruvian markets—a business yielding enormous profits where pursued with energy.

The capital contains about ten thousand inhabitants, and is situated in the valley through which we had traveled for four days (Chiguano), which extends beyond it with still a direction north, and a scarce perceptible rise. With its tile-roofed and stuccoed houses of two stories Salta presents very much the appearance of an old Spanish city; but it is by no means in a state of dilapidation, for, in point of commercial activity and enterprise, notwith-

* Gold is said to be abundant in the elevated districts of this province bordering on Atacarma.

standing its remote position, it is ahead of all other towns of the Confederation except Rosario.

The opening of the Salado had excited here even more enthusiasm than in other places, and so well satisfied were the inhabitants of the advantages to arise from it, that before I left an association was formed for the purchase of suitable boats, to memorialize the general government to remove all obstructions to navigation, and to purchase lands at suitable points on the river.

Although it is not possible to bring navigation to their door, it will shorten the land carriage four fifths, compared with the present transportation to Rosario, reduce the round trip from eight and ten months to two, and the expenses to one half the present rate. It will enable this province to send to market many valuable articles, such as hides and wool, which now, from their bulk, form no part of her exports, and will also induce the whole of her trade, whether of imports or exports, to be conducted through the ports of the Confederation; whereas now the chief portion is carried on through Cobija. The time consumed, and the expenses of trips from this Pacific port are less than from Rosario; and English goods designed for these interior markets, by way of the west coast, are put up in bales specially adapted to mule carriage. The expenses from Cobija are $1 50 to $2 00, from Rosario $2 00 to $2 50 the aroba. The load of each mule is generally from twelve to fourteen arobas (300 to 350 pounds); some will bear eighteen arobas. Most marvelous accounts were given me of the strength and power of endurance of these little animals; one carried a piano from Cobija to Chuquisaca, now Sucre; another, a printing-press, weighing twenty-three arobas, from the same port to Salta.

The staple export of this province is leather; but its wool will probably be much in demand for foreign markets. North, bordering on Jujuy, where the country is undulating, the lomas, dry, bare of trees, and covered with short grass, the sheep are of extraordinary size, and yield a wool of very superior quality. I purchased a skin, and although it was larger than any I had ever before seen, with a fine staple six inches long, I was told by several persons that it was an indifferent specimen, that the wool was usually eight inches in length, and that an ordinary sheep would yield six pounds of washed wool, and frequently eight or ten pounds, the price of which for home consumption is six dollars per hundred.

Among the varied arboreal treasures of this state may be named the pacaray, a lofty, noble tree, the wood of which is said to be indestructible in water, and yet its specific gravity is scarcely greater than that of our white pine. The lapacho, urunday, and quebracho also abound; and to these may be added the palo boracho or yachun, which, though not valuable as timber, yields a material that may at some future day enter extensively into manufacturing enterprises. This tree is covered with large silken bolls, in appearance very like the cotton-boll, but quadruple its size. I brought home some and a table-cover of it, which, though made by hand in Bolivia, will give a fair idea of the fabrics into which this material could be converted.* In the manufacture of hats it will doubtless be much prized. The inner bark of the tree has the properties and answers the purpose of the finest quality of soap. Its trunk is shaped very like a wine-pipe, the difference in the lesser and greater diameter being much greater in the tree than in the pipe.

Wheat, sugar-cane, cotton, tobacco, etc., are all produced, but only for home consumption. From the excessive humidity the wheat is indifferent and subject to *pulvo* (rust).

No geological survey has yet been made of the mineral districts of the state, but the copper ore in the neighborhood of Oran is known to be abundant and rich. The opening of the Salado will, as I have shown, doubtless benefit Salta; but its direct outlet to the Parana is by the Vermejo,† when the President of Paraguay will abandon his assumed opposition to its navigation.

I remained at Salta five days, but the weather was such that neither by day nor night could observations be obtained.

On the 11th, the day after my arrival, I called upon the governor, who, being ill, regretted much that he could not offer me the hospitalities of the government-house. I saw much of Señora Zavalier, at whose hospitable residence our visits were made particularly agreeable by the frequent reunion of a large and interesting family circle. The nieces of my kind entertainers, the Messrs. Pelacio, played most charmingly on the piano. These young girls had not only superb voices, but sang like artists; and yet their mother told me that the only opportunities of mu-

* This cover is now in the possession of a friend.

† By a letter from Bolivia I have learned that a company has been formed for the navigation of the Vermejo, having received special privileges from the Argentine Government.

sical education afforded them had been those attainable at Salta and Tucuman.

I have several times, in the course of this narrative, alluded to the excessive love and talent for dancing common to all classes in La Plata. A taste for music must likewise be a characteristic; for not only had each town its well-trained band, but every village and posta its guitarist or harpist. Yet there are undoubtedly fair ladies in the Confederation who neither dance, play, nor sing, by inspiration. My son, when at the College of Concepcion del Uruguay, saw one of the belles of the neighborhood, at an early hour of the morning, practicing the dance, under the direction of her mother; and the instrumental and vocal accomplishments of the ladies of Tucuman and Salta were such as could only have been acquired by the union of talent and hard study. Neither are the women of that country inactive in domestic life. In Paraguay, as in the states of the Confederation, the wives and daughters of the richest estancieros seemed to occupy themselves energetically in all household duties. The wealthy proprietor of the sugar-plantation which I visited near Tucuman told me that during the busy season he resided entirely in the country, where his two daughters alternately passed a week with him and took charge of the domestic department, and on the occasion of my visit, one of them, a handsome girl, with unaffected grace handed us the maté.

Residing in Salta were several distinguished exiled Bolivians, among whom was General Santa Cruz, who had for some years represented his country at the French court. A revolution had occurred during his absence, and President Belzu would not permit him to return to Bolivia, but had again offered him the mission to France, which he declined, and was now awaiting the opportunity to return which some expected political changes would offer. I also again met here Colonel Hilarion Ortiz, one of the officers who had descended the Paraguay with us. Colonel Ortiz seemed to remember gratefully this little act of kindness.

Though told at Tucuman that Bolivia was threatened with another revolution, that Linares* was upon her borders, and that a strong party favorable to him was merely awaiting the opportunity to overthrow those in power, I had, even up to the period of my arrival at Salta, indulged the hope of proceeding to explore—by descending—the River Pilcomayo. But the infor-

* This gentleman is now President of the Republic.

mation now obtained of the condition of the country induced me to abandon this intention. To have carried out my views successfully would have required all the facilities and security the government could afford; and though each and all parties might favor a design which would confer a great national benefit, I knew well the difficulties I must contend with, from the jealousies of opposing factions, and the distraction of an actual revolution.

On the 14th of November I again turned my face eastward by the Camino Carril, accompanied for some miles from Salta by several of its citizens and Colonel Ortiz. Crossing a spur of the sierra, which forms the eastern boundary of Chiguano, we passed into another pretty valley and stopped at the Posta Sagumilla, which is distant three leagues from the capital.

On the way we saw a large tropa of *burros* (asses), some staggering under loads of sevil bark, others with fire-wood, of which each animal carried fifty sticks of two feet by about three inches, worth, on reaching the city, twenty-five cents the load.

One of the most pleasing interruptions to the monotony of our return journey across the pampas was to meet vast tropas of these animals waddling along under loads of produce or merchandise, and so completely enveloped in packs that nothing but heads and legs were visible.

By a rough road we descended into another pretty valley, and stopped at the dirty village of Cabo, where a little sugar is made in the most primitive manner; and from the sugar-cane is produced a pleasant fermented drink called *guarapi*. The surrounding country was sparsely cultivated, but clothed with a luxuriant indigenous vegetation.

After much delay in obtaining horses we started at sunset, and by 8 o'clock A.M. had made our stopping-place for the night at Simbola, four leagues from Cabo. The postas of Salta are the most wretchedly comfortless places that can be imagined, and the horses very indifferent; for, at the period of our journey, they were but little used save for the transmission of the mail. Those who can afford it—which class includes all who travel—do so with their own horses, servants, and cargaro animals. They select a shady spot for the noonday meal and siesta, and stop for the night at the pleasantest place they can find.

The ground around Simbola was so broken and rocky that we could with difficulty find six feet of level upon which to spread

our blankets. After a miserable night, started for Pasaje (nine leagues), which we made in two hours.

November 16*th.* Got off at 7 o'clock and crossed the River Pasaje, which courses a few hundred yards from a posta of the same name. I saw this river at low water, but its depth was from two to three feet, with evidences of a rise when swollen of over twelve. The road lay very much along its south bank, in an easterly direction for nine leagues, when it turned more directly south, and we crossed a narrow but rapid stream, "Las Piedras," which a little beyond this empties into the Pasaje.

Learning from the post-master that the country bordering the upper waters of the Salado was populous and well cultivated, I sent Mr. Murdaugh from this place, with directions to follow the course of that river from Miraflores—a capilla four leagues below Las Piedras—to the Estancia Taboado,* and to rejoin me at Santiago.

November 17*th.* From the Posta las Piedras we had a view—north of the Pasaje—of the eastern termination of the sierra whose spurs and valleys we had been passing since leaving Salta: from this point the Pasaje enters the pampas.

The mountains were here behind us, and for some leagues our way lay through a level country, extensively wooded with quebracho colorado and cevil. There was no undergrowth in these forests, and the earth was clothed with the freshest young turf. At a distance of five leagues we made Pueblito Conchas, a little posta on the north side of a stream of the same name. In this neighborhood was some cultivation of sugar-cane; and in the village, to my astonishment, a large tannery in course of erection by an enterprising Frenchman. I wished to purchase a bottle of caña; the price was one dollar for the liquor and fifty cents for the bottle, from which I judged that both bottles and caña were scarce articles in this district. We made a hearty breakfast on bread and milk, the latter to me always a luxury, and in La Plata not always obtainable.

In these pastoral regions nothing astonished me more than the small use of milk, and even its avoidance in the preparation of food. Among the cattle recaptured by the soldiers in their expedition against the Indians were some milch cows; but in all that body of men—about one hundred and fifty—Murdaugh and Cornelius were the only individuals, besides myself, who tasted

* It will be remembered that our little boat was launched at this estancia.

milk. Upon one occasion I told a lady of Santiago that peaches (they are excellent in the neighborhood of that city) served with cream were a delicious and favorite dessert in the United States. Had I assured her that a dish of rattlesnakes was with our people the greatest table delicacy possible, her countenance could not have expressed more perfect horror and astonishment as she exclaimed, "*Senor Commandante, no es possible! Es venino* (It is not possible! It is poison)." My pretty young friend was so earnest that I laughed heartily, then discussed the subject with all due gravity, and the fair señorita promised me that at the next season of peaches she would try the smallest bit of one with cream.

From Conchas to Paso Grande the country was level, fertile, and intersected by two small streams, the Mitan and Yatasto, neither of which reaches the Pasaje except during the rainy season, which had now set in. In this district no artificial irrigation is necessary for the sugar-cane. For many miles the road lay through a magnificent forest of cevil, where trees of great size and unencumbered by undergrowth or climbing plants were growing with all the regularity and symmetry of plantations. The ground beneath, as far as the eye could reach, was clothed with the brightest, freshest, cleanest turf, upon which the sun, glancing through the dense masses of foliage, fell in golden lines and many-tinted figures, relieving the forest from all gloom, without detracting from its imposing grandeur.

Before leaving the last posta I overtook a traveler with his servants and cargaro mules. From his appearance and the style of his equipments I at once recognized him as an *estanciero* (a country gentleman). As if moved at the same moment by the same impulse—a desire to join company—he quickened his pace and I slackened mine, until we were side by side ambling along through these magnificent natural parks. He seemed to know who I was, introduced himself as Don Martin Güemes, and invited me to stop on the road at the Yatasto river, and join him in an "asado of *coidero*" (roast kid). Sending Cornelius ahead with the postillion to Verde, the next posta, to get his breakfast and have fresh horses ready, I accepted the invitation. Having reached the appointed spot, we seated ourselves upon the grass round quite an elaborate repast, consisting of a well-cooked asado, cheese, bread, and dulces from the stores of Don Martin, who presided with all the dignified gravity of a hidalgo dispensing the hospitalities of an ancestral mansion. This gentleman was young, hand-

some, and, as I afterward learned, an estanciero of very large possessions. His mode of traveling illustrates that of the inhabitants generally. At Verde I parted from my friend of an hour, and, finding horses ready, mounted, and was off in a few minutes.



AN ESTANCIERO.

Two leagues from this crossed the Rosario, a small stream, showing unmistakable marks of being a considerable river during the rainy season. A league farther on was the pueblito of Rosario, consisting of a few scattering houses, a plaza, and church; and three leagues beyond this was the estancia of my friend Don Martin Güemes. At eight o'clock we reached the Posta Arenal; the country in its vicinity sandy, as the name indicates. A few minutes before I had met the stage-coach from Tucuman for Salta, the first attempt at this description of conveyance as yet ever made in this province, all travel between the two cities having heretofore been made on horseback. This will necessarily lead to another innovation and improvement, the establishment of a ferry-boat at the Pasaje, for during the season of high water the river can not be forded. I described to some persons at Salta the means used where the current is made the motive power. The simplicity of the contrivance seemed to please them much; a ferry-boat

of such construction will probably supersede the unsafe hide balsa, and make the Pasaje passable at all seasons of the year.

After an excellent supper we spread blankets and saddle-gear on the young grass, and though spared the annoyance of musquitoes or posta vermin, found it so chilly that I could not sleep; for, notwithstanding the intense heat of the day, the nights were very cool.

November 18*th.* The air was deliciously fresh, and under its invigorating influence we were astir at an early hour of the morning, and dashing at full speed over the lomas. Thence we passed into a pretty green valley from which the lands rose west, with the regularity of steps, in successive eminences to the sierra, while a detached range bounded the valley east for a distance of six miles. Here our road again led over broken lomas—to the Posta Tala, the point of junction of the Camino de las Cuestas and El Camino Carril; the first being the route taken on our road to Salta. From this point we made directly for Tucuman, where I arrived at 9 P.M., having ridden one hundred and five miles since leaving Arenal in the morning. The distances were generally six leagues, but twice during the day I rode from posta to posta, eighteen miles, in one and a quarter hours.

I had imagined that I was beginning to like the wild independence of the gaucho life—grassy bed, saddle-gear bedding, canopied by the heavens—but I must confess that, after a ride of the above distance for two successive days, most thankfully did I appreciate and enjoy all the comforts of Dr. Priestly's house, and most gratefully do I recall his cordial welcome.

November 19*th.* At an early hour paid my respects to the governor and minister, and when I returned to the doctor's found that several citizens had already called, and in the course of the morning came all the acquaintances made during my first visit to welcome me back.

November 20*th.* Received a visit from the governor and his minister. I had been advised to return to Santiago through the south of Tucuman, a district watered by the Dulce, and represented to me as not only beautiful in natural scenery, but as populous and highly cultivated, and was told that if I would adopt this route the government would provide me with horses and other facilities for travel within the limit of its own province, and would also arrange for them with that of Santiago. The governor now expressed his regret that for want of time only these arrange-

ments had not been made, and gave me statistics of the population, products, and a rough pen-sketch of the rivers and mountain streams that empty into the Dulce within the limits of the province. He also showed me a chart exhibiting the different districts, which, though roughly made, gave a very fair idea of the physical features of Tucuman.

November 21*st.* Yesterday said farewell to my friends, and this morning, for the last time, shook the hand of Dr. Priestly, feeling all the regret of parting with an old friend. At 8 o'clock A.M. we dashed off from Tucuman at the rate of twelve miles an hour, which speed we maintained from posta to posta throughout the day. At sunset we had made one hundred and five miles, and would have reached Santiago, only thirty-five miles distant, the same evening but for the swollen state of the Dulce, which I should have been compelled to cross in a hide balsa, and at that hour would have found some difficulty in getting men from the opposite side to ferry me over. I did not feel fatigued, which may be attributed more to the exceeding purity of the air than to the easy gait of the horses, and could have made the whole distance between the two cities, one hundred and forty miles, by sundown, had I left Tucuman at an earlier hour in the morning. I was told that this ride had been made but once before, and then in the transmission of some important political intelligence.

November 22*d.* The horses swam over, and we crossed the Dulce at an early hour in the one boat of the western province—our picnic yacht, the "*Animal of the Salado*"—the little craft in which we had toiled so many days in descending the Salado from Estancia Taboado. It had been brought back to Santiago from Sandia Paso on a carreta. By 9 o'clock I was once more at the governor's, where I was received, not as a stranger, but with the cordiality and confidence of a member of the family.

On the 25th Mr. Murdaugh reached Santiago, having, according to my instructions, followed the course of the Salado from Miraflores to Estancia Taboado. He thought that the fall of the land, the consequent rapidity of the current, and many sand-banks, similar to those in the Dulce, that intersect the bed of the Salado, would impede navigation from Miraflores to San Miguel. From San Miguel to Taboado—where it will be remembered my exploration of the river commenced—there was less current and greater width than below; the stream flowed tranquilly between high and well-wooded banks; the adjacent country being level,

tolerably well peopled, and cultivated to a limited extent; the people were civil.

It thus appears that from Santa Fé, on the Parana, to San Miguel, within the limits of Salta (for this village is claimed by that province), there are no obstructions to the navigation of the Salado that could not be removed by manual labor at a small expense; and where the impediments are greatest, there is an ample population in the immediate vicinity. The Santiaganians of the poorer classes are more civil, as well as more industrious than those of any other of the west provinces; the Tucumanos resemble them; the Saltenos were perhaps less gracious, but at the postas of Cordova the manners of the people were particularly rough and forbidding.

November 27th. Last night we attended a farewell party at Señor Archibal's, where was a fine gathering of señores and señoritas; and this morning at an early hour we were astir, eastward bound. A number of inhabitants called to see us off, and we were accompanied to the river by the governor and his secretary. The ladies of the Taboado family had not been unmindful of our comfort; a large bag was so amply filled with bread and other articles of food prepared by the governor's sister, that it was as much as Cornelius could carry upon his ricado.

I can not too often bear testimony to the hospitality that characterizes all classes in La Plata. Dread of exposing the poverty or simple arrangements of their households never seemed to check a kind impulse. At a ranch where a hide cot was the best piece of furniture, and a wooden bowl of hominy the most luxurious supper, we were always kindly welcomed. Our reception in all the cities of the Argentine Confederation, the notices of the press, the enthusiasm of the men and women in anticipation of benefit to their country from a development of its river system, were most grateful. Those few days of recreation repaid me for many vexatious disappointments in carrying out the objects of the work confided to me. With pleasure do I recall my intercourse with these Spanish-American friends, and physically able as I was to endure all the discomforts of an explorer's life, most refreshing did I find the comforts of their city homes.

The governor, with his usual forethought, sent a messenger ahead to have horses ready at the first posta; and, by crossing the Dulce near the town in the boat, we avoided the detention and annoyance of any other mode of passing over the now swollen

stream. We followed the same route in returning that I had before made between the two capitals.

It was the season of harvest, and near the close of the day we met a number of women, among them many a pretty dark-eyed girl with a bundle of wheat daintily poised upon her head. As I saw these women tripping along, I thought of some Ruth from a distant province who had "kept fast by the maidens of Boaz to glean until the end of the barley harvest and of wheat harvest." As soon as the grain is ripe, men, women, and children of the neighborhood unite in gathering it in, and their compensation is the gleaning of the fields. The laborers probably take care of their own supplies, for each woman whom I saw carried more than the "ephah" of Ruth. The harvest is here, as in all countries, a season of rejoicing and plenty, and at the close of the day's work every Boaz feasts his laborers upon the best his means can afford.

November 30th. Reached Posta Rosario after a day's ride of ninety-six miles. Our speed was generally twelve miles an hour, sometimes greater. In the course of the morning I made a narrow escape. I was alone, some distance ahead of my party, and when at a full gallop observed a sudden turn in the road. Aware of the danger—for the ground was wet and slippery—but knowing there was more risk in suddenly checking the horse, I dashed on. It was too much; the animal slipped all fours at the same time, coming broadside to the ground, in which position he slid, with the impetus of the fall, twice his length, and caught my left leg under him; fortunately it was protected by a heavy boot. While the beast was rising I attempted to get off, but found myself a prisoner, with the left foot fast jammed in the stirrup-iron. The horse, fortunately, was well broken; and, fatigued from a long gallop, he now moved off at a slow walk, carrying me by one leg, while with the other, and my hands as a "drag," I in vain tried to "bring him up," singing out first in English, then in Spanish, but all to no purpose. Neither would the drag hold, though I made deep furrows in the ground with my fingers. Mr. Murdaugh and the postillion coming up, dismounted, and stopped his headway. In the course of the same journey I met with a somewhat similar adventure, but on the second occasion the horse merely came to the ground with his legs doubled under him—a movement that did not much disturb me, for I quietly kept my seat, gaucho style, until he regained his feet. The horses of the western provinces are almost as sure-footed as mules, and never trip; but, from

not being shod, they sometimes fall during the rainy season when the roads are wet and slippery.

December 1st. At the first posta of Cordova, even if ignorant of the fact of having passed the dividing line, we should have been reminded of it by the uncivil manners of the people, who are so unlike the simple Santiaganians. We did not reach ———— last night until nine o'clock, but neither supper nor accommodation for sleeping awaited us, for the family, who filled the ranch to its utmost capacity, had retired, and would not be disturbed in their rest. In the centre of what once might have been a dwelling, but which now served as a stable, kitchen, and hen-roost, we kindled a fire and prepared our maté, after which we spread blankets on hide cots placed without under a tree, and lay down with the hope of enjoying a sleep undisturbed by rain or vermin; but the first came in such torrents that we were obliged to retreat to the hovel. We soon became aware that during bad weather it was the resort of divers animals; for by the time we lay down a second time in rushed a flock of sheep, leaping over and upon us as we lay concealed in the darkness, producing instantaneously a scene ludicrous, but very annoying at the time to tired, sleepy travelers. One half the flock had made sure their passage over us before they could be arrested. We were now between two fires. What with the bleating of those without, responded to by those within, there was a serenade that defied all sleep. We succeeded in dislodging the inside party that had taken position in the rear, and at last got a few hours' sleep before dawn of day, when the tramping of horses announced that the postillions were ready for a start.

Early on the 20th of December we reached Cordova, having made the distance—about three hundred and sixty miles, as established by the postas—in less than four days.

Our reception here was less cordial than in any city of the Confederation—a fact which seemed to stir the patriotic feelings of our countryman, Dr. Hawling, who threatened to inform the governor of our being stopped and fined two dollars for fast riding within the city limits. I had reined in my horse to a walk after passing the first suburb, but the postillion, perhaps glad to get into town, or anxious to show off his riding to some maiden of the place, kept up the same pace until he was suddenly stopped by a policeman. I paid the two dollars, assuring the official that I was anxious to show all respect to the laws of Cordova; and

while he was endeavoring to work up a fine dramatic rendition of indignant feeling against the postillion, I ordered the lad to lead the way to the fonda.

December 3d. Failed in hiring horses from the posta; but with Dr. Hawling's assistance procured them from a private source, and started for Rosario by the main postal route, on which now runs regularly once a fortnight a *diligencia* (stage-coach). To look at one of those ponderous unwieldy structures, we could well imagine it, unoccupied, a good load for four horses, but it is often crowded and invariably moves at the rate of forty and forty-five leagues per day, changing horses every four leagues.

The characteristics of pampa scenery are very unvarying; therefore I give but a few quotations from my journal of the return to the Parana, though our route was very distant from the one followed in reaching the western provinces.

"Eight leagues from Cordova crossed the Segundo by fording, where it was two feet deep. This stream, which courses due east and west, is one of the rivers lost in the pampas. Our road lay very much along the route surveyed by our countryman, Mr. Campbell, for the railway between Cordova and Rosario, and of which he says: 'Probably, up to this time, there has not been constructed a rail-road of equal length, about two hundred and fifty miles, over a surface so level.' We had scarcely fixed ourselves for the night at Disgraciada, after a travel of nineteen leagues since 9 A.M., when a crowded galera, from Rosario for Santiago and Tucuman, arrived. Soon every square inch of the quarto was filled with these passengers and their baggage, which embraced an amount and variety of articles inconceivable: mattresses, bedding, pillows, boots, hats, boxes, and baskets of eatables and drinkables were strewed about in every direction, without and within the house. The travelers on this occasion were all men, and, hearing that we came directly from their respective cities, were eager for a talk about home. These galeras, when under way for a journey across the pampas, with their four and six horses, each mounted by a gaucho-rigged postillion, and dashing at half speed over a plain bounded only by the horizon, present a spectacle as interesting as novel.

"*December 4th.* Detained until nearly the middle of the day by a pouring rain. At last, after a miserable breakfast on a poor coidero, we were off on fine horses and with a prospect of better weather. Country open; pampa grass abundant. At Tio Puijo

met the diligencia, two days from Rosario, it having made yesterday, the 3d, forty-six leagues. Preparation for our comfort was suspended by the arrival of this public conveyance, to which all things must give way at the stopping-places. It draws up, not at the door of the posta, but at the corral, where in a minute four or six panting animals are detached, and others fresh from the corral are put in their places. The postillion, without even touching stirrup, springs into the saddle, rolls his tongue, casts impudent but gleeful glances at the people standing near, and dashes off at half speed. After the coach was off we were furnished with excellent horses, which carried us at the usual rate—a full gallop—to Villa Nueva, five leagues. Just before reaching this place we crossed the Tercero, which was here three hundred yards wide; water low, two or three feet deep; current, at this season, one and a half miles the hour. Spent the night at this posta, the best we had seen in the country. Master and family, kind and accommodating, furnished us with an excellent supper and abundance of delicious milk.

"*December 5th.* At sunrise on the road to Herradura, which is on the south side of the Tercero—four leagues. Some little cultivation of wheat; but here, as in Tucuman, it is subject to the *pulvo*. Met a tropa of sixty carretas from Rosario for Cordova. At the little village of Ballesteras, twelve miles from Herradura, the post-road for Mendoza branches off; and nine leagues beyond we passed through the little pueblo Fraile Muerto, situated near the river. The inhabitants of this village, as well as many Cordovases, believe the Tercero navigable from Rosario to this point, but no effort has been made to establish the fact.* It could undoubtedly be descended by flat boats. At the posta we met a tropa of mules from the Province of San Juan, bound to Rosario, laden with flour, dried and preserved fruits, peaches, figs, raisins. It made ten leagues per day, each little animal having a burden of from fourteen to seventeen arobas. To Saladillo—eight leagues—a desolate dilapidated village of mud houses, the banks of the Tercero were sparsely wooded with algorroba, with long intervals of a scrubby growth which marked its windings. This place is surrounded by a mud wall and ditch, intended in years past as a protection against Indians. The savages, however, no longer make incursions into this district, for neither village nor surround-

* I have already stated the grounds on which Mr. Campbell based an opinion that it is impracticable.

ing country now offer any plunder. It is situated one mile from the River Quarto, here called the Arroyo Saladillo, and at this time so much swollen that the postillions were obliged to carry the saddle-bags with the instruments on their heads, while they swam their horses over. Mounted on an animal tall enough to wade, I knelt on the saddle by way of keeping dry, and plunged in, expecting to be pitched head foremost at every step. However, much to our astonishment, we reached the opposite side without accident or other inconvenience than wet knees; but I was excessively provoked that the master of the neighboring posta had not notified us of the state of the river, which would have saved detention and confusion. It was quite dark by the time we were under way for Lobaton, distant five leagues. Following the lead of the postillion we made it at a gallop, and arrived safely, but, as may be well imagined, hungry and tired; for, from an early hour in the morning, with no refreshment but a cup of coffee and a little bread, we had ridden one hundred and five miles. On dismounting, guided by a dim light and the sound of a guitar, we made our way to a part of the yard where, around a fire, over which was placed an earthen vessel filled with corn, was seated a party of men and women, dexterously catching the toasted grains as they popped out, while a gaucho musician kept up an active accompaniment upon his cracked half-stringed instrument. Our entrance did not at all disturb the party, for all were intently watching the corn. I asked for something to eat, and received an ungracious answer, delivered with a still more ungracious manner. 'There was nothing to eat, and if there was, there was no wood to make a fire.' Unable to make an impression, and apprehending rain during the night, we spread our blankets in the hovel; and to the gnawings of hunger were added the torments of musquitoes and fleas.

"*December 6th.* At dawn astir, in bad humor and bad plight for horseback travel, but in a heavy rain rode on, five leagues, to Cabeza del Tigre, where we found in the domicil of the post-master a kindly disposition to meet the wants of travelers. We had an excellent breakfast, with coffee and milk. As it was raining hard, with a prospect of continuance, I determined to remain in our snug quarters until the following day. Met at this place a tropa of mules laden with merchandise from Rosario bound to San Juan.

"*December 7th.* Left Cabeza del Tigre at an early hour, in a

slight mist, and four leagues beyond, at the little mud village of Cruz Alta we reached the last posta in Cordova going east, or the first west from Rosario, the line of division between the two provinces, Cordova and Santa Fé, passing between this and Esquina Grande a mud village four leagues east. Up to this point the road follows very much the course of the Tercero, all the postas being upon or near its south bank. From Cruz Alta the river, having a previous direction southeast, takes a course of northeast, under the name of Cacarañal, to its junction with the Parana. Its banks, which we have followed during the last two days, are as clear of wood as the adjacent pampa, where scarce a tree is to be seen, except a few planted for shade. After the superb forests of the western provinces these looked but the shadows of trees. At our next stopping-place, Arequita—five leagues—found civil people, who gave us a good asado; but again, four leagues farther on, at Desmochedo, met with but a rude reception—nothing to eat, not even a little hot water for maté procurable. The country between the last places was undulating, uncultivated, and bare of trees, but clothed with luxuriant grass. To Candelaria—six leagues—face of the country unchanged. At this place, where the people were civil, we procured hot water for maté. At Correa—five leagues—found a good two-story brick house, and its owner largely engaged in raising sheep for the wool.

It was sunset when we started from El Estado for Rosario, and it soon became excessively dark, but at a full gallop we followed with confidence the lead of the postillion, until suddenly that individual and his steed lay broadside on the pampa, at some distance from each other—a manœuvre I did not exactly care to follow. No damage ensued; the postillion was soon mounted again, off we dashed at the same rate, and reached Rosario at 9 P.M. all safe, after a day's ride, from Cabeza del Tigre, of one hundred and five miles. The fonda was crowded, and after supper we gladly accepted the hospitality of Mr. Dale, the British consul.

The growth of Rosario and the rapid increase of its population and trade in three years are unprecedented in the history of Spanish-American cities. I have in a previous chapter alluded to its many advantages as a port of entry; I now refer to it as an important point for the residence of a consul; for we should not wait for trade before appointing such an officer, but should place one there to secure commercial advantages for our people. A British consul was placed there at the earliest moment.

In a few days a conveyance by steamer offered to Buenos Ayres, where I arrived on the 12th of December. As the Water Witch was still undergoing repairs to her engines, which would occasion a detention of some weeks, I proceeded in the steamer off San Isidro, and, with the two cutters and a large sail-boat hired for the purpose, sounded out the channel-way, from the inner anchorage to the Arroyo Capitan, also the entrance to the Palma Pass. I found a depth gradually diminishing from twenty-four feet within the Palmas to eight off its entrance, reduced to low water, showing that vessels of six feet draught, bound up the Parana, may enter the pass at ordinary low water without apprehension of taking the bottom. The only difficulty in the navigation would arise from the want of discernible objects on shore, the land being so low near the mouth of the river as to be indistinctly seen at the distance of five miles from the deck of an ordinary ship.

This completed the work assigned me by my instructions, so far as the means at my disposal, time, and the occurrences I have related would allow. I leave the public to judge of the embarrassments under which I sometimes acted. There were many others, as well as manifold labors entirely foreign to my legitimate duties, to which I have not deemed it necessary to allude.

On the 24th of January, 1856, with caulked decks, boilers patched, and engines mended, the steamer descended the river to Montevideo, where I had reason to suppose a letter of recall awaited me. This letter read thus:

"Navy Department, December 20th, 1855.

"SIR,—The Department is gratified at the energy displayed by you in your endeavors to accomplish the explorations and surveys for which you were sent out, in the midst of many difficulties.

"I am of opinion that the public interests require the return of the expedition. You will, therefore, so soon after the receipt of this as practicable, return with the Water Witch to the United States and to the port of Washington.

"Very respectfully, your obedient servant,

"(Signed), J. C. DOBBIN.

"Commander Thos. J. Page, commanding U. S. Steamer Water Witch, Buenos Ayres, Rio de La Plata."

When we remember merely the social and political changes of one year, we may imagine what anxieties and fears, what hope and happiness move the heart of the sailor, who after more than

a three years' cruise in foreign waters, at last hears the boatswain's call, "All hands up anchor for home!"

The Water Witch was detained some days at Montevideo by the necessity of additional repairs to her wheels, and it was not until the 3d February, 1856, that we stood out of the harbor. Passing close under the stern of the sloop of war Germantown, we received from her crew three hearty cheers—the sailor's "God-speed homeward." Captain Lynch was on shore, but I recognized the clear, shrill voice of the first lieutenant, who wished us "a pleasant passage and a happy meeting with friends." It was my old friend and shipmate Ridgely.

Homeward bound! Once more the little craft was puffing free over old ocean: she had done good service in a foreign clime, and was now to bear to their native shore the crew of stout ready hearts that had stood by her from the beginning to the end.

After an absence of three years and four months she came to anchor, on the 8th of May, 1856, at the Washington Navy Yard, the place of her original construction.

CHAPTER XXV.

Extent of Exploration.—Depth of Water in the Paraguay.—Sources of that River.—Junction with the Parana.—The Parana River.—Tributaries of the Paraguay.—The Confuso and Otuquis.—Expeditions up and down the Pilcomayo.—Northern and Southern Branch.—Little Success at its Navigation.—The Vermejo.—Its Navigability confirmed.—The Salado.—"River Bottom."—Falls of Apipé.—The Gran Salto.—The River above.—Islands and Rapids.—The Uruguay.—The Salto Grande.—Beauty of adjacent Country.—La Plata.—Its Mouth at the Capes.—Structure of the Parana Banks.—Tosca.—Rock Formation on the Paraguay.—Entrance to a Mountain Region.—The Great Gulf.—Birth of Rivers.—Callera de Arriola.—Retirement of the Sea.—Fossil Remains and Estuary Mud.—Diluvial and Alluvial Periods.—Encroachments of Land and Water.—Harbor of Buenos Ayres.—Fertility of Soil.—Fruits and Vegetation.—Medicinal Plants and Woods.—Climate.—Navigation of the Rivers.—Letter from the Governor of Santiago.—Exclusive Privileges granted to Companies.—Suitable Vessels.—Paraguay.—Products and Advantages for Trade.—Interests of Bolivia.—Immigration.—Brossard.—Thiers and Guizot upon the Country of La Plata.—What foreign Governments have done.—What our Policy should be.

WITH my map and charts I present to the public, if not an interesting, at least an unexaggerated account of my exploration of countries bordering the fluvial avenues that intersect the basin of La Plata.

We ascended from Buenos Ayres—the initial point of our work

—to Corumba, in latitude 18° 59′ 43″ south, longitude 57° 44′ 36″ west, to which place the exploration of the Paraguay was at this time limited by the Brazilian Government.* That settlement is in a right line about one thousand miles from Buenos Ayres, and by the course of the rivers two thousand from the ocean. The first half of this distance was ascended at the season of low water in the Parana without encountering shoals, rocks, or any obstacle to a continuous navigation, in an ocean steamer of nine feet draught.

In the Paraguay the depth of water was at that time not less than twelve feet, and, according to our register kept at Asuncion, at no season less than five. These rivers, augmented in volume of water above their junction by a wonderful ramification of navigable streams, form the central water-courses of La Plata.

From three small lakes in the northwestern mountains of Brazil, between the parallels of 13° and 14°, the Payaguas River—a name euphonized to Paraguay by the Spanish conquerors—is supposed to have its source. These mountains, which almost meet the last spurs of the Peruvian ranges, are likewise the water-sheds of several streams that swell the great tributaries of the Amazon; and, according to a generally received opinion, a short portage alone intervenes between the navigable head waters of these rivers. Flowing generally south, the Paraguay, in latitude 27° 17′ 32,″ longitude 58° 39′ 32,″ forms its junction with the Parana, which also rises in the northwestern mountains of Brazil, between the parallels of 17° 30′ and 18° 30′. Coursing first west, then south, its waters continually increased by the outpourings of many large streams, the Parana is a mighty river, one and a quarter miles wide when it enters *Missiones* (a country so called from having been the seat of the first Jesuit missions), from whence it rolls again westward to the point at which it commingles its waters with the Paraguay. The two rivers made one, under the name of Parana, flow on to La Plata, or *Parana Guazu* (Great Parana), as it is still called by the Indians.

In ascending the Paraguay, while tributaries from the east are constantly recurring, there are comparatively few from the west. From the Confuso, in latitude 25° 8′, to the latitude of 19°, a distance by the river of six hundred and fifty miles, there is but one affluent from the west, the Otuquis, or Bahia Negra. Between the

* Subsequently permission was granted to extend the exploration into all the Brazilian tributaries of the Paraguay.

Confuso and its junction with the Parana the Paraguay receives the waters of two considerable rivers—the Pilcomayo and Vermejo—the former in latitude 25° 16′, the latter in 26° 52 ′south.

The Otuquis, which is considered the northern limit of the Chaco, rises in the Sierras de Santiago, in the Province of Chiquitos, and coursing through Bahia Negra, empties into the Paraguay in latitude 20° 10′ south, longitude 58° 17′ west. Of the practicability of its navigation I have not a doubt; and when established, it will open a channel of communication with Chiquitos, a region of Bolivia, far removed from that watered by the Pilcomayo, but equally rich in products.

Of the Pilcomayo I can give no information derived from my own knowledge. Circumstances that have been related closed this river to the expedition; all that we know of it, therefore, is derived from several abortive attempts at its exploration: the first, by Father Patiño, in 1721; the second, by Casales, in 1735, who gives but a vague account of his attempt to ascend through what he terms the southern channel, the northern one being pronounced by him impracticable; the third, by Castañares, in 1741; and a fourth by Colonel Magariños and a Mr. Thompson, said to have been an American.

This latter was an attempt to descend the river in 1844 under the auspices of the Bolivian Government, General Bolivian being President; but it was likewise unsuccessful. Azara, who, so far as he goes, gives the most reliable account, ascended this river through the northern branch about forty miles, according to his estimate of the distance, when he returned under the apprehension that he could not reach Potosi, the point aimed at, although the least water given by him in the month of August was six feet. His difficulties seem to have arisen from the strength of the current; but, like other explorers, he was illy provided with suitable means.

The Pilcomayo has its source in a spur of the Cordillera de los Andes, northwest of Potosi in Bolivia, and after receiving the Cachimayo, which rises within a short distance of Chuquisaca, is joined by the Pilaya from the southwest. This latter, fed by numerous tributaries, greatly augments the volume of the Pilcomayo, which, at a short distance from this junction, enters the Gran Chaco, and flowing under the general direction of southeast, empties into the Paraguay at Asuncion. The only attempts at navigation upon this stream which seemed to promise success, are

stated to have been made through the branch at or near Asuncion. Our chart does not lay down the supposed southern mouth, because we discovered no evidence of its existence near the locality assigned it. Inasmuch, however, as it may discharge itself into some one of the numerous riachos, and thus be concealed from view to one ascending the Paraguay, I would not pronounce upon its non-existence.

The efforts that have been made to determine the navigability of the Pilcomayo seemed to have failed—so far as we are able to judge from the vague accounts given of them—more in consequence of the want of proper boats and provision for such an undertaking than from the opposition of the Indians or insurmountable obstacles in the river. The chief embarrassment seems to be in the western portion of the Chaco, where the channel is reported as losing itself in a vast laguna, offering no direct or navigable course.

The Vermejo flows from the northwestern provinces of the Argentine Confederation, and notwithstanding the comparatively short distance through which I ascended it in a steamer of twenty-six inches draught, and at the season of low water, the point reached, according to my determination, is above the position given the most difficult passes by Comejo and Loria. The last descent of it, made in the corresponding month of the succeeding year by Mr. Hickman, an enterprising citizen of the United States, then a resident of Buenos Ayres, in a boat of three to four feet draught, confirms my opinion of its navigability.

The Salado rises in the western Cordilleras of the Province of Salta, and after a very tortuous course, under the general direction of southeast, empties into the Parana at Sante Fé, latitude 31° 38′ 34″ south, longitude 60° 39′ 48″ west.

We ascertained and established the navigability of this river for a distance of eight hundred miles, and exhibited upon it the great lever of modern civilization, steam. It flows through a country unequaled for pastoral and agricultural purposes, and brings into communication with the Atlantic some of the richest and most populous provinces—Santiago del Estero, Tucuman, Salta, Jujuy, etc.—whose products have heretofore been conveyed to the port of Rosario by ox-wagons, occupying a period of ten months to go and return; but which can now, by boats, reach the same port in fifteen days, and a return cargo of merchandise be made in twenty-five.

Even the Indians, who have heretofore made hostile descents

upon the few settlements along its banks, may be made, by kind and judicious treatment, powerful agents in developing the resources of the country.*

Immediately adjacent to the river extends, from one to about five miles in width, a "river bottom" well wooded and densely covered with grass, from which the more elevated land, skirted with timber of superior quality, rises gradually to a level with the surrounding pampa. The wood on this bottom is of excellent quality as fuel for steamers, and may be had in great abundance. In its green state we experienced no difficulty in keeping up the requisite quantity of steam.

In my visit to the western districts of Paraguay we touched the Parana where it flowed through "Missiones," but my examination of this noble river extended only from the mouth to its junction with the Paraguay. From all the information arrived at, though unsatisfactory, I was induced to believe that its navigation would be found practicable to a considerable distance above Corrientes. The falls of Apipé, situated in latitude 27° 27′, longitude 56° west, probably offer no serious obstruction at the period of high water.† Hence for several hundred miles up to the Curitiba, a large navigable river, its course is represented as perfectly free. Above this point begins a remarkable series of falls and cataracts, which extend a distance of one hundred miles to the Salto Grande. Around this fall the Jesuits, with their twelve thousand converts seeking a land of peace from the inhuman persecutions of their Portuguese foes, effected a toilsome, struggling descent, in which many of their numbers perished. Azara, one of the few fortunate and adventurous travelers who have ever reached this Salto, has pictured its sublimity in enthusiastic terms. The river suddenly narrows from a width of over a mile to less than forty yards, pouring its solid mass of waters over a height of sixty feet into a rocky basin.‡

From what we glean in Jesuit writings the river above this again becomes navigable, at least to the Parana Pané. Very little is known of the upper waters of the Parana; for beyond a certain point even the track of the intrepid missionary is lost, and this great water-course, with a probable navigation of at least two

* See extract from letter of Governor Taboado, p. 444.

† In my narrative I have given in detail an account of the hostile interference the expedition met with while proceeding to examine this point.

‡ Azara, vol. i., p. 71, 72.

thousand five hundred miles, flows for a great distance in undisturbed possession of the Indian.

From Missiones begins that series of islands which thence characterize this river to its mouth. Some of these are small, others embrace many square leagues; some are low, of recent formation, and frequently submerged; others are high, well wooded, and add much to the beauty of the scenery.

"The laws which govern the rise and fall of the Parana are invariable. Its inundations, like those of the Nile, are periodical, and are blessings rather than causes of disquietude; for, always expected and progressively slow, they never surprise the vigilance of the inhabitants, and decrease, leaving vegetation not only unharmed, but improved by their deposit."*

The Uruguay, which has its source in the Sierra Catalina, latitude 27° 30′, is also increased by numerous tributaries, many of which, when they shall have been explored, may prove important streams. It flows first west to the confines of the "Missiones," then south, and disembogues into La Plata immediately after its junction with the Parana in latitude 34° south. It bounds Entre Rios and Corrientes on the east, separates those two provinces from the Banda Oriental and Brazil, and is navigable at all times for a distance of two hundred and fifty miles up to the Salto Grande. Here is a ledge of rocks stretching across the river, presenting more the character of rapids than of a fall, as its name would indicate. For a very short time in the year, during the month of October, the Uruguay rises to the height of from fifteen to twenty feet, forming over the fall a rapid current, but of sufficient depth to allow of its ascent under an extraordinary steam pressure. Beyond the "Salto" it again becomes navigable for small vessels of five feet draught to the distance of from one to two hundred miles. When the population of the country above shall have increased and have felt the want of water transportation, they will see the propriety and practicability of overcoming this obstruction by means of locks.

The scenery on this river, especially on the left bank—the Banda Oriental—is very fine. At the distance of one hundred miles above its mouth the country on the right bank—Entre Rios—changes from the flat wooded to the undulating grassy, with skirts of quebracho and palm groves here and there fringing its margin. The left bank—the Banda Oriental—is beautiful through-

* Ygnaoio Nuñez.

out. The land is high and rolling, with wooded ridges and grassy hill-sides, gently sloping to meadows of surpassing verdure.

Now the reservoir of many streams, equaling in its mass of waters all the rivers of Europe, La Plata, at the narrowest point twenty-five miles wide, flows on majestically until it commingles its waters with those of the ocean between the Capes of Santa Maria and San Antonio, the limits generally assigned to it by geographers; for though it attains a width of one hundred and eighty miles at its mouth, and has very much the appearance of an estuary, it also retains to the capes many of the characteristics of a river.

I have named but a few of the principal navigable tributaries of the central water-courses. From the eastern slopes of the Andes flow many others, which, after tortuous meanderings for hundreds of miles, are lost by filtration or evaporation during the heats of summer. Others form shallow lakes and become the sources of streams of less magnitude.

From the west the Parana and Paraguay also receive the outpourings of a great number of minor rivers, many of which are navigable to the very heart of some of the finest regions of the basin. There are also innumerable riachos which wind through estancias and forests, forming a perfect net-work of natural canalization, and again find an outlet in the parent streams.

The structure of the lands forming the east and west banks of the Parana up to the confluence of the Paraguay, and again upon those of this latter river up to the Appa exhibits a remarkable contrast. Beginning with the shores of the Banda Oriental and proceeding north we find clay slate, gneiss, and granite, as at Martin Garcia, whose quarries furnish all the materials for building and paving in Buenos Ayres. Here is a break in this chain by the intervention of the flat lands of the Parana Delta. At Diamante a calcareous formation is presented in a conglomerate of fossil sea-shells, which continues for a long distance northward on a range elevated from sixty to one hundred feet, and exhibiting at some points crystallized carbonate of lime, of which we procured very perfect specimens. A coarse reddish sandstone and indurated argillaceous earth of the same color characterize the high banks of the Province of Corrientes. Leaving the Parana River where it turns abruptly eastward, and following the Paraguay, we observe at some distance in the interior ridges and rolling lands; but bordering the banks of the river a level country offers no

appearance of rock formation, until we reach the isolated Mount Lambare, where basaltic rock shows itself. From Asuncion throughout Paraguay up to the Rio Appa we find, at various points, banks presenting argillaceous strata and precipitous sections of silex and limestone.

On the other hand, assuming Buenos Ayres as our starting-point, and moving northward, on the west bank of the Parana and Paraguay, we find a continuous pampa throughout the extent of thirteen degrees of latitude, interrupted only at one point, and that an isolated hill of mica schist one hundred feet in height, with a base of not more than three hundred in diameter. This occurs at the distance of about twelve miles above Asuncion, and contains the quarry which is alluded to as furnishing a good quality of stone for building.

The country south of the Salado is more elevated, and apparently of older date than that north of this river, which we assume as the southern boundary of the Chaco. But the nearest approach



SIERRA SIETE PUNTA, IN THE CHACO.

to rock formation throughout the whole extent of this region is "tosca," which is found in great quantities on the shores of La Plata, near the city of Buenos Ayres; at various points in both the Salado and Vermejo, it forms the beds of those rivers. Beyond, or north of the Rio Appa, the country both east and west of the

Paraguay assumes very much the same character, low and of recent date, broken only by isolated hills, some of them rising almost to the proportions of mountains from the water's edge. At Pan de Azucar the formation is syenite; at Olimpo, basaltic rock; at Coimbra, limestone, white marble, and sandstone, with apparent impressions of moss resembling arborescent marble; at Corumba, limestone.

Here we had evidently, however, entered upon a formation differing from that of the Chaco. Detached spurs and isolated ranges of mountains west of the river, divided and intersected by low flat lands, quite submerged at the season of high water, lead the imagination to picture them, at some anterior date, as islands in what we may conceive this vast region of La Plata once to have been—an inland sea.

From the north of Patagonia along the eastern slopes of the Andean range, skirting the pampa northward to within the Province of Chiquitos, turning east, along the sierras which divide the valley of the Amazon from that of La Plata, to the Paraguay, descending the latter to its tributary, the Appa, and ascending this to its source, following the Cordillera de Maracayn to the Salto Grande of the Parana; descending this river to Missiones, thence across to the Uruguay throughout its course, and to the capes by which the great estuary pours its waters into the Atlantic, we trace out what is supposed to have been the limits of a great gulf.

Then came a gradual subsidence, and water-courses found their beds in valleys and in the gentle lowlands of the Chaco. We may regard this as a distinct period in the retirement of these waters, for as yet we suppose the sea to be far above its present shore-line. The rivers of La Plata were then born, and Sir Woodbine Parrish finds their outlet in the Callera de Arriola, where the fossil remains he procured for the British Museum were discovered. From this point, in the lapse of time, as the earth encroached upon the sea, these riverine waters found a more extended course, and may yet, with the flight of years or ages, overflow the limits assigned them by modern geography. Strata of marine shells found at various depths attest the revolutions that have been going on for ages. And upon a vast section of the bed of this ancient sea has been formed the alluvial structure of the pampas.

Near the shores of La Plata marine remains are frequently visible, but as we ascend from its mouth the alluvium increases in

depth. Near Santa Fé, three hundred miles from the ocean, Mr. Darwin discovered a stratum of marine shells, over which was an alluvial bed, forty or fifty feet deep, containing remains of extinct mammalia. Then again, as he remarks, "On the cliff-bound shores of Entre Rios the line can be distinguished where the estuary mud first encroached upon the deposits of the ocean."

But in no place is this alluvial deposit more distinctly marked than upon the Vermejo, with its banks rising to the height of thirty and forty feet in the level country of the Chaco. Three beds or strata were always distinguishable; the upper and the lower varying in color and character, while the centre was at all points the same; a vein of estuary mud, ordinarily at the depth of fifteen or twenty feet below the surface, at times forming a thick deposit, at others thinning out to a mere line. At one point of the river I obtained, ten feet from the surface, from a stratum of indurated clay, a specimen which has the appearance of roots and grass, and at another we found fresh-water fossil shells of very minute size.

The formation of the pampa country of La Plata has scarcely received the consideration and analysis to which its peculiar features may certainly lay claim. Travelers have noted and surmised, and writers have surmised from these, but a satisfactory treatise would seem still to be wanting, to establish with some reliability how and when occurred the physical changes in this great alluvion, some of which are of very recent date. The origin of its saline deposits is a subject of interesting inquiry. Bland, one of the United States Commissioners in 1818 to Buenos Ayres, says the pampa formation "may have been gently lifted just above the level of the ocean, and left with a surface so unbroken and so flat as not yet to have been sufficiently purified of its salt and acrid matter either by filtration or washing." It is admitted, however, that a more reasonable hypothesis for the saline impregnation of various portions of the Chaco may be found in the washing, during the season of rains, from the extensive salt-fields in the valleys and on the eastern slopes of the Cordilleras. Hence flow the head waters of the rivers, which, by filtration or evaporation, impregnate the adjacent soil and form saline lagoons, the sources of other streams of less magnitude. We know that salts on the outer crusts of the earth have been continuously found in lowlands and highlands, in springs and pools, at considerable elevations. Shells and marine remains similar to those found throughout this

vast basin have been discovered from the tops of the Andes to the mountains of China. All creation tells of a diluvial, and again points out to us an alluvial period.

That the Chaco country is an alluvial formation rests beyond a doubt. Mr. Darwin enumerates nine distinct quadrupeds, the remains of which he discovered at Bahia Blanca in the province of Buenos Ayres. The state of preservation in which they were found, and other minor circumstances, prove that they were not tossed and swallowed up by some internal convulsion of nature, but were slowly and gradually entombed by the earthy matter, still encroaching upon the sea and rescuing from its waste of waters a land of fertility.

The physical revolutions the surface of the earth has been undergoing were long ago proved from the accounts of Strabo, of Herodotus, and a host of ancient writers. The land has continuously encroached upon the sea, and in turn the sea has encroached upon the land. Herodotus thought that Egypt might once have been a long and narrow gulf. There are certainly undoubted proofs here, as in many places elsewhere, of the receding of the water. Strabo discussed the possibility of the coast of Asia Minor having in course of time considerably extended itself into the sea, and Admiral Beaufort has pointed out the inlets that have been filled up and the islands that have joined to the main land since the days of that ancient geographer. Ravenna, Notre Dame des Ports, and numerous other towns, which were once sea-ports, are now several miles inland. The ancient town of Port Valois, the Portus Valesiæ of the Romans, was once situated at the mouth of the Rhine, but, from the extensive delta formed by the sediment brought down that river, now stands a mile and a half from the water. On the other hand, the temple of Serapis and other structures in the Bay of Baiæ are remarkable evidences of the fall of the earth and the rise of the sea.

The filling up of the River La Plata and the extension of the delta of the Parana are changes that have not totally escaped observation, although they have not been noted with any degree of accuracy. Buenos Ayres may yet, like the cities just mentioned, become an inland town.

The author of the Argentina, speaking of the depth of water between San Gabriel and the present site of Buenos Ayres, says,

"De ancho nueve leguas o mas tiene
El rio pora qui *y muy hondable*,

La nave hasta aqui segura viene
Que como el ancho mar es navigable."

"The river 's here nine leagues or more,
And very deep 'twixt shore and shore,
So far the navigation's free,
As though 'twere an open sea."

We are left to conjecture what the poet's notions were of the depth of water; but it is not probable that he would have applied the term "*muy hondable*" to eighteen or twenty feet of water, almost in an open sea; and we may fairly infer that since the period when Centenera ascended the river, about three centuries ago, the detritus brought down by its current has gradually filled up the bed to its present level. What the amount of this deposit can have been we are left to imagine. Little doubt, however, can be entertained but this filling up has been and still continues the silent work of time, and that as each day La Plata pours its sea of waters out into the ocean, layers of mud and vegetable matter sift to its shallow bottom.

All the great rivers of La Plata flow from the finest mineral districts of the world; but this valley has yet richer mines in its varied and fertile soil, and in the wealth of the vegetable kingdom, which is marvelous. In ascending continuously from the Capes of La Plata to Martin Garcia, from the fragrant isles of the Parana to the fruitful wilds of Brazil, in river and land explorations of over eight thousand miles, we found every indigenous variety of tropical vegetation; passed forests of precious woods, interrupted only by extended plains carpeted with vigorous grasses and capable of supporting an incalculable number of horned cattle. Again: I entered populous districts, and witnessed a demonstration of all the capabilities of the soil for agricultural wealth; but the inhabitants of these districts, not stimulated to exertion by exterior commerce, have heretofore pursued agriculture only as a means of supplying the demand for home consumption. When small fields of cotton, tobacco, and sugar are sufficient for the wants of a few families, there is no inducement to form great plantations; but having seen these articles grown to the perfection of maturity, with but little culture, and even spontaneously, I can readily imagine that in a few years they would become staples.

We brought home sections of a variety of woods, and of their indestructible qualities I had some opportunity of judging in my

frequent visits to the abandoned missions of the Jesuits in Paraguay, where the finest wood-work—columns, statuary, and roofing—exposed to the action of the elements for more than two centuries, were as untouched by time as granite or iron. "A ship built of Paraguay wood," says Azara, "will outlast four of European timber." The economy of nature also is most wonderful and beautiful. In the edible fruits, foliage, barks, fibres, and juices of its great forest trees, as well as in those of every species of minor vegetation, we find farinaceous food, a stimulant, or tea, more healthful than that afforded by the Chinese leaf, precious medicines,* raw materials for the finest tissues and the most useful fabrics, dye-stuffs offering varied and unfading tinges, gums, resins. This exuberance of vegetable life is united with a climate as delicious as it is salubrious.

The exposure incident to works of this character is calculated generally to give a correct idea of the health of the country in which they are prosecuted. And such was the unusual absence of sickness among both officers and crew of the Water Witch, notwithstanding the exposure to which they were subjected, that I am constrained to pronounce Paraguay and those provinces of the Argentine Confederation which constituted the field of our operations among the healthiest regions of the earth. Its proximity to the tropics and physical character, judging from analogy, might, on a superficial knowledge of it, convey a very different idea.

But, in giving this as an opinion, I do not judge solely from the effects of the climate upon our exploring party, but from facts indisputable. In Paraguay there is no practicing physician. It is not an uncommon occurrence to meet with aged persons who will say they have never been sick. In the Province of Santiago del Estero there is no professional physician. One will often hear the remark, "There has never occurred in Santiago a case of intermittent fever." It was in this province that I tested my own power of endurance, and at the same time the salubrity of the atmosphere, by the exposure to which I was subjected both by day and night. During the greater portion of the year the country people sleep in the open air, never "in doors" unless driven in by rain.

This condition of climate prevails, although in a less degree, throughout the Confederation. Had the great delineator and in-

* Among the botanical specimens collected in Paraguay alone are sixty-six varieties of medicinal plants, and yet the collection is incomplete in this branch.

vestigator of South American nature visited La Plata, he would have made it an exception in penning the following passage: "Extreme fertility of soil and insalubrity of atmosphere are as inseparably connected in South America as in Southern Asia."*

The progress made in those countries even during the short period of the operations of this expedition—the Constitutional Government having been established in 1853—was too manifest to escape the most uninterested observer, and it has demonstrated practically to the comprehension of the people the wonderful blessings of peace and good government over civil wars and despotism.

A company, with a large grant of land from the General Government, was soon formed for the navigation of the Salado, and Don Manuel Taboado, Governor of Santiago del Estero, writes to me, under date of September 1st, 1857: "Two years have elapsed since the exploration of the Salado, which, under your direction, has given such good results. Yesterday—the anniversary of your arrival in Santiago—came Captain Benetti, of the steamer Salado, now aground at Monte Aguara, he having ascended the river in a boat, which he left at Navicha.† . . . . Captain Benetti noted, between Aguara and Navicha, about forty fallen trees, and it now remains only to complete the work you began. . . . .

"I have before advised you of our successes on the frontier against the Indians. We have defeated them in several engagements, and they, having since made peace and conducted themselves well, are now employed in the transmission of our correspondences by canoes from Bracho to Aguara."

On the faith of evidence given that the Vermejo is navigable in its ascent by steamers, a company, composed in part of some enterprising Englishmen, was formed for this purpose; and having obtained from the government of the Argentine Confederation exclusive privileges, procured from England four small steamers. Entertaining a deep interest in all such enterprises—the fruits of our work—I strongly advised that the steamers required for the navigation, especially of the small tributaries of the central rivers, should be procured in the United States; for, apart from a national feeling, and without reflecting upon the skill of English ship-builders, I do not hesitate to assert that in no part

* Views of Nature.

† Distant from Bracho, the first military post in Santiago on the Salado, fifteen miles.

of the world has the construction of boats of small draught been carried to the same extent or brought to such perfection as in the United States; and for the simple reason that here we have an inland navigation of vast extent and of great value, which has excited the ingenuity of ship-builders to devise such construction, and so to apply the means of propulsion as to admit of the least possible draught.

Paraguay promises a lucrative commerce to any people that may become engaged in it; producing tobacco, hides, yerba, cotton, medicinal plants, dye-stuffs, indigo, and a variety of woods for ship-building and ornamental purposes. So superior is the quality of her tobacco, to which both climate and soil seem peculiarly adapted, that it would alone become an article of extensive trade. She would seek eagerly in return salt and manufactured goods.

In ascending the Paraguay two thousand miles from the Atlantic we reached the frontiers of some of the richest provinces of Brazil, provinces whose products had before no outlets but the port of Rio Janeiro—a port reached by a laborious, dangerous, and costly land travel, over mountain paths accessible only to the sure-footed mule.

A part of the ancient empire of the Incas—the State of Bolivia—has vital interests in the results of this exploration. Possessing but one indifferent port on the Pacific, Cobija, and from this separated by the Cordilleras of the Andes, it is only by her rivers that the wealth of her mines and the fruits of her forests, teeming with many of the products of the Indies, can be brought into the trade of the Atlantic.

From being one of the best populated as well as the richest of the South American States, a field is at once opened for the manufactures of Europe and the United States. At simply a nominal expense, when we look to the vastness of the interest involved, might she effect this outlet into the Paraguay, through the river Otuquis, now obstructed by a dense growth of grass.

With the navigability of her great interior water-courses once established, La Plata will have received a development of centuries, and we may safely anticipate the tide of immigration which will set into that valley, and, without being visionary, we foresee a future which, in the history of the world, will only be surpassed by the growth of the United States of North America. In offering to immigrants the temptations of a country even richer in

all natural, mineral, pastoral, and agricultural resources than the great basins of the Orinoco and Amazon, we have shown that she offers a climate genial and unrivaled for its salubrity, and a population sufficiently large and advanced in civility to form at once the basis of extensive commercial operations.

Brossard, a French diplomatist, says, in writing on the immigration from France into that country: "In 1838 the number of French registered at the French Consulate at Montevideo amounted to five thousand; at the end of 1842 it had increased to nine thousand; but it must be remembered that this register embraced only adults; and the best authorities compute the whole number, inclusive of women and children, at not less than fifteen thousand. During the first months of the year 1841 there arrived at Montevideo more than thirty-five hundred persons from the Basque Provinces, and it is estimated that not less than 28,245 European immigrants arrived from 1838 to the close of 1841." This tide of immigration flowed in when these countries were distracted by civil wars and revolutions, which have given place to more settled governments and commercial treaties with the United States and some of the great powers of Europe.

The leading governments of Europe have manifested for many years an active interest in the affairs of La Plata, and my opinion of its immense resources for commerce are more than sustained by some of their most eminent statesmen. Austria, at an early period, acknowledged the independence of the La Plata Republics. Proverbially sagacious and far-seeing as her statesmen are known to be, they have doubtless discovered in that region a healthy outlet for the disaffected population of the Lombardo-Venetian States.

M. Guizot comprehended the importance of opening the countries of this great basin to European enterprise. In a dispatch to M. de St. Aulaire, then the French Ambassador at London, he says, in writing of the intervention of France and England in the affairs of La Plata: "We must ask, as an accessory consequence of our intervention, the application of the principles established by the Congress at Vienna for the free navigation of rivers, in relation to those which, flowing from the frontiers of Brazil and Paraguay, throw themselves into the Atlantic."

M. Thiers, in a speech before the legislative assembly of France, delivered January 6th, 1850, says of the commerce and brilliant future of La Plata: "Your trade with the two Americas is enor-

mous; larger than with any other region of the globe. It represents nearly five hundred millions, of which North America absorbs the greater part. Of these five hundred millions North America receives three hundred and fifty; South America one hundred and fifty, which is not quite a third; but you deceive yourselves strangely if you appreciate this hundred and fifty millions of commerce only by the cypher by which it is represented. The trade of North America, which apparently presents such great advantages, and which you regard with such solicitude, has two great drawbacks: First, it is exposed to the tariff, which the manufacturing classes (*parti industriel*) demand. Secondly, they have the advantage of you in navigation. . . . .

"Now let us look at South America. You there trade with nations whose growth surpasses even that of North America. The census of North America represents the population as doubling itself nearly in twenty years. I can prove to you that there are states in South America where the population has tripled in twelve years.

"The trade of Brazil has advanced in ten years from a little less than thirty to sixty millions; the trade of La Plata has advanced, in twelve years, from between four and five millions to forty millions.

"You may judge from this of the progress of trade in those countries.

"I am profoundly convinced that without this war, which your energy alone can terminate, the trade of South America—and I speak without exaggeration—will reach to two hundred millions.

"Again: you encounter there no manufacturing party (*parti industriel*). She can not menace you for a long period with the industrial rivalry which now threatens you in the United States; the people of South America are at best an agricultural people. And, lastly, you have the certainty that your flag will there develop itself immensely; and there is only that region for its development (*et il n'y a plus que cette region pour le developper*)."

In a memorial addressed to the King of Prussia, advocating the establishment of a line of steamers to South America, the views of Thiers for France are applied to Germany. The writers say: "Brazil will never become a manufacturing country, and the products of Germany will there, *in all time, or forever*, find an assured outlet or market. After Brazil the states of the Rio de la Plata merit the greatest attention among the countries of South

America, and an extended commerce with Brazil will secure to Germany relations with these states. The vast territories which form the basin of the Parana, the Paraguay, and the Uruguay, and their tributaries, contain the elements of a prosperity and wealth the most varied. What a future do these countries not offer!"

While benefiting these neighboring and weaker republics by developing their river system, we have opened a vast field for trade in all the products of temperate and tropical zones; and these, with the mineral treasures of the Andes, can find a rapid and safe river-transit to the Atlantic. Protected by the flags of the great maritime powers, this excess of wealth will be poured into the lap of nations. Will not our people seek a fair commercial intercourse with these states of our own hemisphere? We can apply to ourselves with equal force the arguments of Thiers and the German memorialists. We are not there menaced by the rivalry of a manufacturing people, and our flag may find a field of extensive development. If the government of the United States be true to its interest; if it desire to cherish and maintain a feeling of national friendship with those countries; if it desire to secure any benefits likely to arise from its commerce—destined to be of inestimable value—it must step in while the "waters are troubled," it must move ere alliances are made elsewhere.

The most flattering compliment has been paid this government by the people of the Argentine Confederation, through their representatives, that could possibly be bestowed by one nation upon another. They have adopted our Constitution as the model of theirs, in every particular, save some few where it would have been totally inoperative. They point to our progress as an example to their own people; they copy and circulate the writings of our statesmen; they desire to imitate us so far as it may be possible, and to this end they look for a continuance of peace.

I have carefully noted in my narrative the reception of the expedition and the courtesies extended to myself and officers by the inhabitants of La Plata as an evidence of their disposition to fraternize with our people. These countries are worthy of our highest consideration, and if, in diplomatic relations, we are not ably represented, then we are not fairly represented, and we do injustice to ourselves.

CHAPTER XXVI.

First Discovery of the River La Plata by Solis.—Death of Solis.—Sebastian Cabot.—First Settlement in La Plata.—Explorations of Cabot.—Indian Hostilities.—Highway to El Dorado.—Don Diego Garcia.—Cabot's Dispatch to the Emperor.—Pizarro.—Cabot superseded.—Don Pedro de Mendoza.—His Expedition to La Plata.—Founding of Buenos Ayres.—Hostility of the Indians.—Attack upon Buenos Ayres.—Ayolas.—His Expedition up the River.—Death of Mendoza.—Destruction of the Spaniards under Ayolas.—Don Dominguez Yrala.—Founding of Asuncion.—Indian Conspiracy.—The Spaniards and the Natives.—Don Alvaro Nuñez de Vaca.—His Journey across the Continent.—Administration of De Vaca.—He is sent back to Spain.—Yrala appointed Adelantado.—Asuncion erected into a Bishopric.—Disasters of the first Adventurers.—Successful Administration of Trala.—Commanderies.—Death of Yrala.—Zarate and Garay.—Victory over the Indians.—First export Cargo.—Death of Garay.—Final Conquest of La Plata.—Separation from Paraguay.

To the Narrative of the American Exploring Expedition I append a few chapters giving an abstract of the early history of La Plata and the proceedings of the Jesuits in that region.

The basin of La Plata is one of the three geographical divisions of the southern section of our hemisphere, and takes its name from the river discovered by Juan Diaz de Solis, great pilot of Castile, who, having received from the Spanish Crown command of an expedition to follow up the discoveries of Vincent Yannes Pinson upon the Brazilian coast and southward, started in the month of September, 1515, with three vessels, one of sixty and two of thirty tons, all provisioned for two and a half years.

Solis, in the same year, reached the entrance of a supposed estuary, which he ascended for some distance; discovering it to be a river, and finding the navigation intricate, he left his vessels, and in a boat ranged the western shores as high as the island of Martin Garcia. Here, deceived by the submissive movements of Indians who placed at their feet provisions and other offerings, the explorer, with a few men, ventured to land without due precautionary measures to guard against the treachery of the savages, "who," says Charlevoix, "killed him and all his attendants ..... and, stripping the dead carcasses, roasted and ate them in sight of those who had remained in the boat, or had taken refuge in it, and who had now no other course to take but to return to Spain." The right of Spain to one of the fairest regions of the earth was

thus sealed by the blood of the great pilot of Castile, who was, according to Herrera, one of the boldest navigators of the day; but for some years no steps were taken to follow up his discovery.

Sebastian Cabot, having left the service of England, entered that of Spain in 1512. He was received with every mark of consideration by Ferdinand, and in 1518 given the post of *piloto major*. It was reserved for this explorer to reveal the wonderful river system of La Plata. Ten years after the death of De Solis he was charged by Charles V. to pass through the Straits of Magellan and open a communication with the Spice Islands. This expedition, consisting of four small vessels and a caravel, sailed from San Lucar April 3d, 1526. Cabot lost his largest ship on the coast of Brazil, and observing among his crew a spirit of disaffection, which soon ripened into an open mutiny, headed by Martin Mendez and Michael Roxas, two officers next to himself in rank, he determined to abandon the voyage to the Moluccas.

Landing the mutineers at the island of St. Catharine, he, with about two hundred brave followers, among them three brothers of Vasco Nuñez de Balboa, sailed for the Parana Guazu, which he ascended to the scene of Solis's disaster. Leaving here his two largest vessels, thirty men, and twelve soldiers, Cabot, on the 8th of May, 1527, with a brig and caravel, passed through the channel which still bears the name he gave it—Las Palmas—and entered the mouth of the Uruguay; from thence a boat party was sent up the river under the command of Juan Alvarez de Ramon, who, after a navigation of three days, ran aground on a sand-bank, where he was attacked by the savages. Ramon was killed, but a few of the men escaped by swimming, and succeeded in rejoining their ships. The expedition next entered the central river—the Parana—and off the mouth of the Carcaraña, or Zacarania, now known as the Tercero, latitude 32° 50′, came to anchor. Finding the natives, who throughout his ascent flocked in crowds to the shore, disposed to be friendly, and enchanted with the beauty of the country, Cabot ordered up the remainder of his ships, and commenced the first settlement of La Plata, San Espiritu, which was, when completed, garrisoned by an officer and sixty men.

On the 22d of December, 1527, Cabot recommenced his exploration of the Parana, which he ascended for nine hundred miles to latitude 22° 27′ 20″, longitude 59°, at which point navigation was obstructed by the Falls of Apipé. Here the expedition remained for thirty days, during which time its commander fre-

quently communicated with the Indians of the bordering country, who exhibited an amicable spirit, and gave in exchange for articles of little value pieces of gold and silver, which were brought, they said, from lands to the west. The explorers next retraced their steps to the confluence of the Parana and Paraguay, entered the latter river, and ascended to the mouth of the Vermejo, where they were attacked by several thousand Payaguas Indians, who bore down upon them in three hundred canoes, and were only repulsed with considerable loss on the part of the Spaniards. The second in command, Michael Rifos, and the treasurer of the expedition were both killed. Seeing the resolute spirit of the invaders, the savages next made pacific overtures by bringing to them provisions and ornaments of precious metals, which, like the Parana Indians, they described as coming from the west. Herrera says they were the spoils of war taken by the Payaguas in a recent inroad into the dominions of Huana Capuc. Charlevoix believes them to have been part of the effects of the unfortunate Portuguese adventurer, Alexis Garcia, who a short time before this date had traversed the continent from Brazil to Peru, obtained a considerable treasure, and in returning reached the borders of the Paraguay, where he was put to death by the Indians.

Cabot was at this time unaware of the journey of Garcia, but Balboa's letters from the Pacific mentioning a region in the south teeming with the precious metals, had reached Spain before the sailing of this expedition, and he probably received from the savages some definite information of the existence of the Peruvian empire. Undoubtedly believing the great river he was exploring to be a highway to El Dorado, he named it "Rio de la Plata."

The jealousy of the conquerors, and the avarice of the merchants of Seville and Lima, who afterward obtained a monopoly of the trade of the Pacific provinces, the want of enterprise, and the distracted state of the Plata republics since their separation from Spain, have left the problem unsolved. It may be among the developments of the nineteenth century to prove that Cabot's conjectures were correct. The Paraguay may yet be established as the most direct communication between Europe and the finest districts of the Peruvian empire.

A rival now appeared in the field. At the mouth of the Vermejo the explorers met Don Diego Garcia, who, uninformed of the course taken by the expedition of Cabot, had intended to follow up the discovery of Solis. Agreeing to continue their work in

amity the two commanders returned to San Espiritu; but having afterward a misunderstanding, and Garcia's party being greatly inferior in numbers, he left the river. Ferdinand Calderon and George Barlowe (the latter an Englishman) were dispatched to Spain with rich specimens of the precious metals and several Guarani Indians, whom they were instructed to present to his Spanish Majesty, and solicit aid and authority for Cabot to extend his explorations westward.

The messengers, with their human and metallic credentials, were well received by the Emperor; the course of their commander was approved, and promises were given of assistance. But their arrival was immediately followed by that of Francisco Pizarro, who reached Spain in May 1528. Cabot had only offered conjectures of a golden region west of the Paraguay. Pizarro, after incredible hardships, the very recital of which moved his Majesty to tears, had reached the borders of Dorado. One asked both authority and means to continue his explorations; the other sought only the royal permission, relying upon his own resources. He had brought with him material proof of his discoveries. Balboa had sent home drawings of the lama; Pizarro now exhibited to the Spaniard the wonderful animal itself, with fine fabrics of its wool. There were also valuable and artistically-wrought specimens of the precious metals. The golden empire of the south was no longer a chimera of the imaginative adventurers, for they had entered the temple of Tumbez and could testify to its exceeding riches; its coating of gems, gold, and silver; they had visited the gardens of the Inca's brides, resplendent with the precious metals; had actually seen and watched the artisans engaged in the formation of its costly decorations.

Charles was on the eve of starting for Italy to receive the imperial crown from the Roman Pontiff. Before his departure he commended the cause of Pizarro to the General Council of the Indies; the promises made to the messengers from La Plata were forgotten. Impatient for their return, uncertain even as to their fate, Cabot determined to submit in person his cause to the emperor, and, leaving a garrison of one hundred and ten men at San Espiritu, under the command of Nino de Lara,* he sailed for Spain,

* A cacique of one of the neighboring tribes, having conceived a passion for the young and beautiful wife of a Spanish officer, carried her off in the absence of her husband and a large part of the garrison of San Epiritu. This led to conflicts with the Timbres, and San Espiritu was finally abandoned.

where he arrived in 1530, after an absence of nearly five years, only to learn the good fortune of Pizarro and his own disappointment. As some compensation, he was offered and accepted his old post of pilot of Castile.

If fervently impressed with the value of his discovery, the great navigator quietly abandoned to others the right of farther examination; but we must remember that the whole future expense of the discovery and settlement of these countries was borne by the conquerors from their private resources, or those amassed in the course of their explorations. Cabot was not rich, and is represented by contemporary writers as singularly gentle and disinterested in character. He was doubtless totally unfitted for the intrigues of a court, and as the emperor was unwilling or unable to afford him assistance, he probably found it difficult, if not impossible, to obtain credit from other sources for a sufficient sum, especially when he could offer no proof of the existence of golden regions in La Plata, or a connection with Peru more definite than that afforded by the reports of the Indians, who gave five hundred leagues as its distance from the Paraguay.

Don Pedro de Mendoza, a wealthy gentleman of Andalusia, who was attached to the Emperor's household, and had served with distinction in the Italian wars, next offered to defray all the expenses of an expedition to La Plata of a thousand men furnished with provisions and equipments for one year. In return he was to be endowed with the title of adelantado, and to have a jurisdiction limited only by the concessions already made to Pizarro and Almagro. His salary of two thousand ducats was to be defrayed from the lands discovered by Cabot, or from the revenues of new conquests; great privileges were likewise conceded to those who should accompany him.

Not only was Mendoza impressed with the anticipation of finding a direct route to Peru, but the terms of the *asiento*, "If any sovereign prince should fall into their hands the whole of his ransom was to be the reward of the conqueror after deducting the royal fifth," suggested a hope of other and neighboring empires of equal wealth and civilization.

A large number of individuals of distinction, among them thirty noblemen, the eldest sons of their families, and several Flemish officers, joined the expedition; there was, indeed, so great a multitude of all classes* that, instead of a thousand, at the last it was

* Charlevoix.

found that the number composing it had increased to two thousand five hundred Spaniards, and one hundred and fifty Germans. Don Diego de Mendoza, brother to the adelantado, was appointed admiral of the fleet; Don Juan de Osorio, an officer who had greatly distinguished himself in Italy, was made commander of the troops; and Don Juan de Ayolas was appointed alguazil major. Others went out with official appointments from the crown, while many of high birth, among them Don Martin de Yrala, a Biscayan hidalgo, who subsequently made a name in the colony, were satisfied with merely volunteering their services.

A fleet of fourteen ships with their crews, carrying seventy-two horses, completed the expedition, which sailed from San Lucar in August, 1534, and after a favorable voyage entered La Plata in January, 1535.

Ascending the river to the Isle of San Gabriel, the ships came to anchor; and on the 2d of February the Spaniards began their first settlements on the banks of the Riachuelo, which they called, in honor of the day, and as an expression of their delight with the fine climate, "Santa Maria de Buenos Ayres."

On disembarking the stores it was found that, owing to waste, bad management, and the numbers who at the last moment had been permitted to join the expedition, the supplies intended for one year were nearly exhausted. The savages of the pampas, at first allured by the presents of the invaders, brought them abundance of provisions; but as these were exhausted, and familiarity dissipated the feelings of awe which their first appearance excited, or, perhaps, wearied with the task of furnishing food for such numbers, they retired some leagues from the settlement. There was but one alternative—to oblige them by force to continue what they had voluntarily begun.

Unfortunately for the adventurers, the first movements to carry out this resolution were characterized by neither prudence nor sagacity. The admiral, Don Diego Mendoza, who was sent to scour the country in command of a small body of cavalry and three hundred foot, on the second day discovered a large body of savages and essayed a parley; but, finding that they declined to listen to any pacific overtures, the admiral, despising their naked strength and rude implements of war, rushed eagerly to the attack without noting their admirable position on the borders of a morass, in which the foot-soldiers soon became entangled, and were for a time defenselessly exposed to the arrows of the Que-

randis. The cavalry made a bold charge, and the battle ended in the retreat of the savages leaving a thousand slain, but also with a loss on the part of the Spaniards of one hundred and sixty men, including Don Diego Mendoza, Don Pedro de Guzman, and five other gentlemen of distinction—a sacrifice which led to no good result. The Indians, for some months after this battle, kept at a distance; they neither brought provisions nor offered submission to the invaders, who were soon reduced to the most fearful straits through starvation and sickness.

Ships were ordered to the coast of Brazil for relief; and another party, under the command of Ayolas, was sent up the Parana for the same purpose. The first returned after poor success, but reached Buenos Ayres in time to assist in defending it from the attack of twenty thousand Indians, who boldly approached close to the mud-walls, over which they threw bolas with matches attached, threatening entire destruction to the hastily-erected and thatched-roof huts within. Fortunately, the guns of several vessels were brought to bear on the savages, and made such havoc that they were forced to retreat; not, however, before several houses and vessels were destroyed.

The return of Ayolas from the Parana with a supply of maize gave only temporary relief. This commander, like the great pilot, was so charmed with the beauty of the upper country and the seeming hospitality of the Timbú Indians that he left a hundred men to build a new fort, Corpus Christi, near the site of San Espiritu, whither it was resolved by the adelantado to remove the remainder of his followers, who were now too glad to abandon the scene of so much suffering. From Corpus Christi Ayolas was again ordered to explore the upper waters of the Paraguay, and ascended to latitude 25° 38′, where he was attacked by a large body of Payaguas in boats, whom he beat off, but with the loss of fifteen of his men. Continuing his ascent for a few leagues, but finding the natives neither disposed to treat nor bring provisions, Ayolas determined to land and give them battle. A decisive victory established the superiority of the Spaniards, and the savages testified their submission, not only by promising fealty and obedience, and bringing abundant supplies of provisions, but by offering as presents a number of young Indian girls.

The conquerors commenced, August 15th, 1536, on the left bank, the construction of a fortified house—the first of Asuncion. Leaving in it a small garrison, Ayolas continued his exploration

of the river to Puerto de Candelaria, in latitude 21° 05′, where he disembarked and penetrated into the interior, with the hope of reaching Peru.

Mendoza determined to return to Spain. Charging Francisco Ruiz with the shipping and one hundred and fifty men left at Buenos Ayres, and also with an appointment for Ayolas to act as his lieutenant, the unfortunate adelantado, ill and broken-hearted, sailed from La Plata. He died on the passage home, but with his last breath urged those around him to have succor sent to the suffering colonists.

Don Dominguez Yrala, who had been left at Candelaria in charge of the vessels of Ayolas, after waiting nine months without news from his commander, was forced by want of provisions to return to Asuncion. While engaged in strengthening that settlement, ships arrived with several hundred men and supplies for two years. About the same time Francisco Ruiz left Buenos Ayres to proceed up the river in search of Ayolas. Joined by the garrison at Corpus Christi, which he found driven to great straits by the repeated attacks of the Indians, he reached Asuncion soon after the arrival of the relief from Spain. Thus the whole of the Spaniards of La Plata, in all six hundred souls, were assembled there. The fate of Ayolas and his men had been ascertained. Traversing the Chaco and Chiquitos, they had reached the borders of Peru, obtained a quantity of the precious metals, but in returning were massacred by a party of Payaguas Indians near Candelaria.

The Emperor had ordered the colonists to elect a governor should Ayolas not return. Their choice fell upon Yrala, who was in all due form proclaimed Captain General of the Rio de la Plata, August, 1538. He at once applied himself with energy and ability to strengthening the settlement and completing the subjugation of the neighboring Guarani tribes. The lines of a city were drawn, each individual of the community receiving an apportionment of land; the whole was surrounded by a palisade. Alcaldes and police were appointed, municipal laws framed, and a church and several substantial buildings for public use erected. Asuncion was the first, and remained for some time the most considerable city of La Plata.

The Spaniards congratulated themselves upon their escape from Buenos Ayres to Paraguay, that "blissful country," as Muratori calls it, where the climate was benign and the aborigines more

docile and civilized than those of the pampas; for the Guarani industriously cultivated their land and raised large crops of maize, cassava, and sweet potatoes, which, with honey, fish, fowl, and wild animals, gave them abundance of food. They had also a wild cotton, from which the women wove such light garments as were needful in that climate.

Some of the natives took refuge with the fiercer tribes of the Chaco, others made fruitless attempts at resistance, and, about a year from the establishment of Asuncion, a conspiracy to massacre the whites during Holy Week was revealed by an Indian girl. The leaders were executed, and from this time the neighboring tribes east of the river resigned themselves submissively to their fate. The women became willingly, indeed eagerly, the wives and concubines of the settlers, and a new generation rose, asserting nature's claims on both races. The Guarani language was generally spoken, and to this day is more generally used than Spanish in Paraguay.

After the death of Mendoza, Don Alvaro Nuñez Cabeza de Vaca, who had been many years prisoner among the Indians of Florida, volunteered to expend eight thousand ducats in equipping an expedition for La Plata. His offer was accepted, and with the title and privileges previously accorded to the deceased adelantado, he sailed from San Lucar, November 2d, 1540, with four hundred men and forty-six horses. At St. Catharine, March, 1541, he received the first intelligence of the death of Ayolas and the removal of the colonists to Asuncion, and conceived the extraordinary project of reaching that place by traveling across the continent. Sending his vessels round to La Plata under the command of Don Philip de Carceres, De Vaca supplied himself with beads, hatchets, knives, scissors, and other articles which his experience of Indian life had taught him would be useful accessories in a march through a country entirely in the possession of the savages; and on the 2d November, 1541, accompanied by two hundred and fifty men, and with only twenty horses—all that had survived the voyage—he began this extraordinary journey.

After toiling through the forests of the mountainous regions of the coast, the adelantado entered upon a magnificent plain, watered by the great river Curitiba, and covered, as far as the eye could reach, with the villages and fields of Indians, who received him with great hospitality, supplying his party with abundance of provisions in return for trinkets of little value. Charmed with

the beauty and fertility of the land, De Vaca took possession of it, in right of discovery, for Spain, and called it Vera, from his own family name. Continuing their journey without any discouraging incidents, the Spaniards reached Asuncion after a traverse of more than a thousand miles, which was made in one hundred and thirty days, and with the loss of only one man, who was drowned by the upsetting of a canoe in crossing the Parana.

This was undoubtedly one of the most extraordinary exploits of the conquest of La Plata; but the administrative talents of the new adelantado were not equal to the courage or address he had shown in this journey, or rather not equal to the control of the turbulent spirits of Asuncion. He became involved in difficulties with them, which ended in their sending him home, after a close imprisonment of ten months, upon charges of maladministration. During the short period that he ruled over Paraguay De Vaca succeeded in impressing several of the most warlike tribes of the Chaco—the Guaycurus and Agaces—with a due sense of the power of Spain, and energetically sought to accomplish, what was a prominent object with all the first governors, the opening of a communication with Peru. He ascended the Paraguay to the lagoons of Xarayes, but the periodical inundations obliged him to retrace his course, after having penetrated some distance west. It was upon his return from this expedition, in April, 1544, that he first encountered the open hostility of a party who, during his absence, had assiduously endeavored to undermine his authority. Taking advantage of the absence of Yrala, the most energetic and popular man of the colony, who had always acquiesced in the measures of De Vaca, they dragged the adelantado from a bed of sickness, and placed him in irons until a vessel could be prepared to send him to Spain for trial. The Council of the Indies, to whom his case was submitted, after keeping him in suspense for nearly eight years, acquitted De Vaca of the charges, but never permitted him to return to La Plata.

Some fatality seemed to attend the governors of this region. Don Diego Centino, who had assisted La Gasca in suppressing a rebellion in Peru, next received the appointment as adelantado of La Plata, when on his death-bed at Chiqusaca. Don Juan de Sanabria, his successor, died while engaged in preparations for his departure from Spain, and the son of Sanabria, who was next appointed adelantado, perished by shipwreck after entering the waters of La Plata.

The claims of Yrala could no longer be overlooked. Twice, subsequent to the death of Ayolas and the deposition of De Vaca, he had been chosen governor, and, when superseded, had shown himself a loyal subject by giving the new adelentado the benefit of all his great experience. He was not without enemies. Some accused him of abandoning Ayolas, without an energetic effort to save him from the treachery of the Payaguas; others asserted that he cunningly instigated the intrigues against De Vaca; but there is nothing to support these charges, and evidences of his courage, administrative talent, and general popularity meet us on all sides. He ascended the Paraguay four successive times; he penetrated to the very borders of Peru, though not permitted by La Gasca to enter the country; and, returning from this memorable journey after an absence of eighteen months, brought with him twelve thousand Indian prisoners.

On the other side, he had traversed Paraguay, crossed the Parana above the great falls, and ascended its left shore to the Tiete, whence he overran the Province of La Guayra, and gave a check to the Mamelucos by founding the town Ontiveros.

The Portuguese had instigated the Tupi Indians to make descents upon the less warlike tribes of Paraguay and carry off their prisoners to be sold as slaves to the dealers on the coast. Yrala's energetic measures had checked these iniquitous proceedings, and from the borders of Peru to the confines of Brazil he made the authority of Spain acknowledged and respected. The appointment which he received from the crown, in 1555, of adelantado, by the hands of Father Pedro de la Torre, the first titular bishop of Paraguay, was only a well-earned honor.

In a consistory held in July, 1547, Asuncion was erected into a bishopric, and Father Juan de Barros, of the order of St. Francis, was appointed to it. On his nomination to another see without having entered upon the duties of that in La Plata, Pedro de la Torre, of the same order, was named to succeed him and sailed the following year. The arrival of the bishop was anticipated with delight; Yrala and the whole Spanish population of Asuncion, who went out to meet him, knelt as he approached and implored his benediction. He was accompanied by a retinue of priests and friars, who were as a "fountain in the desert to the poor colonists," thirsty and perishing for spiritual refreshment.

A series of tragical occurrences marked the discovery and settlement of La Plata. The bones of the noblest sons of Spain—the

gallant cavaliers who had served with distinction in the Italian wars—were bleaching upon its pampas; massacres had ensanguined its soil; disappointment, famine, and its consequence, pestilence and death, had alone formed the burden of reports to the mother country. These sacrifices were unrelieved by brilliant conquests, or by the reports of auriferous regions. Gold! was the cry of the Spanish adventurers; its discovery was with them the great incentive to action. The name, La Plata, was alluring, and the wording of Mendoza's asiento shows that the band of cavaliers who joined his expedition were perhaps animated by the expectation of finding such empires as

> "Rich Mexico, the seat of Montezuma,
> And Cusco, in Peru, the richer seat
> Of Atabalipa, and yet unspoiled
> Guiana, whose great city Geyron's sons
> Call El Dorado,"

or royal captives, whose ransom would be rooms heaped with the precious metal and gems of fabulous size. These hopes vanished like the illusions of the mirage. But the climate was benign; land and water teemed with animal life; there were no inhospitable elements to contend with, save the hostility of the aborigines; and when we remember that a few years later Cabeza de Vaca, with a comparatively small party, traveled the continent from the Brazilian coast to Asuncion, and passed through hordes of Indians unharmed; and that De Garay afterward, with so little loss, obtained a decided victory over the Querandis, when aided by the fiercest pampa tribes, we can readily believe that the disastrous issue of the first attempt to settle Buenos Ayres arose from the inexperience and mismanagement of Mendoza and his chief officers.

But, thanks to the vigorous administration of a Biscayan hidalgo, a social and political fabric was at last permanently established north of the confluence of the Parana and Paraguay, and a brighter day dawned for the unfortunate settlers, who discovered that in the products of the soil were their best and only resource; that its fertility, genial climate, and the exacted but comparatively reasonable labor of the Indians promised them homes offering an abundance of the comforts of life. As the earth yielded its fruits with the smallest possible labor, there was no temptation to an abuse of aboriginal labor.

Policy as well as duty dictated a considerate course toward the Indians; and the laws of Yrala, who was assisted by the counsels

of the bishop, for their entire subjugation, though vigorous, were made with all due regard for their physical and spiritual welfare. Many voluntarily offered themselves to the Spaniards as domestics; others, prisoners of war, were divided into a class of commanderies, called *yanaconas;* each commander receiving the control of a certain number of both sexes and all ages; and in accepting them he assumed the obligation to feed, clothe, and take proper care of them when sick or disabled from labor by age or infirmity, and to afford them due spiritual instruction. An examination was made into their condition each year by the government, and where the Indian considered himself aggrieved he had the right to be heard.

Another class, called *mitayos*, was formed of such tribes as had capitulated in war, or voluntarily offered their submission to the government. These were collected in villages, controlled by municipal laws and an alcalde, generally selected from among their caciques. But the whole were subject to the supervision of Spanish officers. In these commanderies all females, caciques, eldest sons, and children were exempt from forced labor; males only, from eighteen to fifty-one, being compelled to work one-sixth of their time for the whites. Even this time was given in rotation. The conquerors received this service for two lives only, during which period the Indian could neither be sold nor alienated, and at its expiration he was free. In 1612 a new code was promulgated, abolishing all forced servitude.

The Governor of Asuncion extended his system to Guayra; a Spanish force was sent to take possession of the country, and forty thousand Indian families were divided into commanderies. The site of Ontiveras proving sickly, the town of Ciudad Real was founded higher up the river. On the Paraguay settlements were made in the lands of the Xarayes to facilitate communication with Peru; and one was attempted—though afterward abandoned in consequence of the hostility of the Charruas Indians—on the east side of La Plata at its confluence with the St. Juan, nearly opposite to the site of Buenos Ayres. In short the conquest of all Paraguay was completed.

While Yrala was taking advantage of this happy healthful condition of affairs, to devote his energies to the embellishment and extension of the capital, Asuncion, he was carried off by a fever (1557) at the ripe age of seventy, and lamented by the whole population, aboriginal and Spanish. Twenty years of his life had

been spent in a series of enterprises for the conquest and settlement of the country. Daring, generous, kind to his people, full of resources, of extraordinary personal prowess—displayed on one occasion by slaying twelve Payaguas Indians who at once attacked him—Yrala is justly considered one of the ablest and most fortunate of the conquistadores.

After the death of this governor Paraguay was distracted for a long time by the dissensions of parties who were striving to obtain a controlling influence in the affairs of the colony; but the rivalries of factions rather stimulated than crushed the indomitable spirit of enterprise that characterized the Spaniards of that age, and towns and cities rose in the most distant corners of the basin of La Plata. In 1560 Chaves founded Santa Cruz de la Sierra, the farthest settlement northwest of the Paraguay; and after the conquest of the Querandis of Buenos Ayres, Spanish dominion was established from the mouth of the Plata to Parana on the Pacific Ocean.

In 1557 Don Juan de Garay, while founding a settlement at Santa Fé, in the vicinity of Cabot's old fort, San Espiritu, heard of the arrival on the coast of what is now the Banda Oriental of the adelentado Don Juan Ortiz de Zarate, who, having received the appointment from the Viceroy of Peru, had visited Spain for the purpose of obtaining its confirmation. He had succeeded in his mission, and sailed in 1572 with nearly five hundred volunteers, half of whom died before reaching La Plata from the privations and hardships of the voyage, while the remainder, having landed on the east coast, were surrounded by the warlike Charruas. De Garay, fighting his way through hostile tribes, at last succeeded in giving assistance to the adelantado and his besieged party, who, under his guidance, reached Paraguay in safety. Zarate died in 1575, a few months after his arrival at Asuncion, but testified his gratitude to the bold De Garay by leaving him guardian of his only daughter—who, in right of the law conferring the adelantasgo for two lives, was his successor—and appointing him captain general and lieutenant governor during her minority. The honest zeal displayed by the lieutenant governor for the welfare of Zarate's daughter, his success in reconciling many rival parties, and the energy with which he promoted the general interests of the people, proved that he was in every way worthy of the trust reposed in him by the deceased adelantado.

After restoring peace among the colonists and successfully car-

rying out many of Yrala's original projects for extending Spanish authority over neighboring countries, by forming reductions and founding villages and towns, De Garay, hearing that the Pampa Indians were distracted by tribal dissensions, thought it a propitious time to descend the river and found a town near the mouth of La Plata. The frequent disasters to vessels from Spain had shown the absolute necessity of a port where ships and boats ascending and descending the river might find a safe harbor, or rest and refreshment after a long voyage. He effected a landing without opposition near the Riachuelo; selected a site in the vicinity of Mendoza's former settlement for the new city, which was commenced on the festival of the Holy Trinity, 1580, with the name of "Cuidad de la Santissima Trinidad." For the port the name given by Mendoza, of "Santa Maria de Buenos Ayres," was retained.

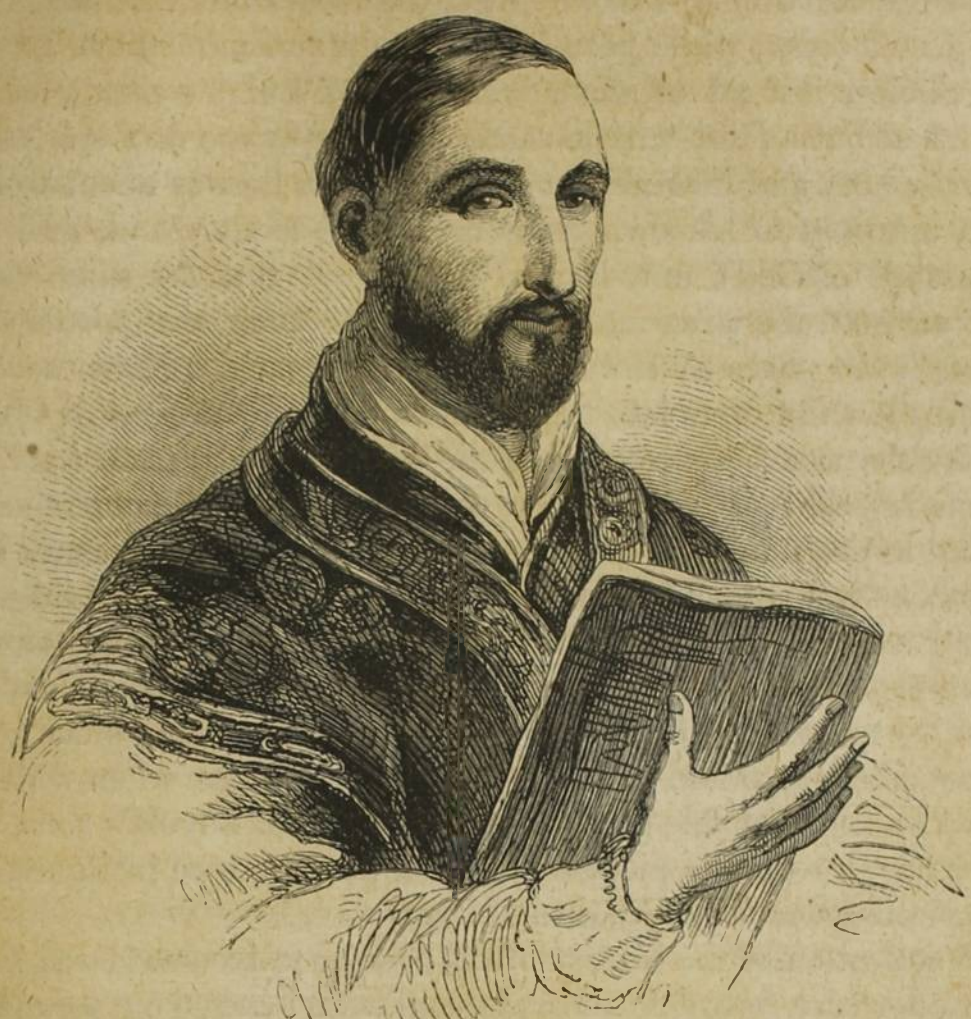
It must not be supposed, however, that the works of the town were continued without molestation from the savages. Though absent when the expedition first arrived, the Querandis, when they learned of this fresh invasion of the white man, assembled all the tribes in alliance with them from far and near; and, led by Tabobá, the greatest warrior of the country, bore down upon the founders of the new city. De Garay's men boldly sallied forth from their intrenchments, and a fierce sanguinary battle followed, the savages only giving way when they saw the fall of their chief. They then fled in every direction, closely pursued by the Spaniards; and so great was the slaughter, that the scene of the conflict, near the Barracas, upon the Riachuelo, is to this day known as *Matanza*, or the "Killing Ground." The lands on the river side, from Buenos Ayres to Baradero on the Parana, with the neighboring Indians, who soon gave in their submission, were divided among sixty-five of De Garay's followers.

For three years the governor continued to occupy himself with great energy in strengthening the new settlement and regulating its affairs; and before his return to Paraguay he had the satisfaction of dispatching a vessel to Spain with an account of his conquest; but, above all, freighted with a cargo of the first products ever exported from La Plata—hides and sugar; the first as an evidence of the extraordinary adaptation of the pampa country for the raising of horned cattle, the original stock having only been introduced thirty years before.

In returning to Asuncion in 1553, De Garay, having incautious-

ly ventured to sleep ashore, near the site of San Espiritu, was murdered by a party of Minuas. His death was greatly deplored throughout Paraguay, and his name is associated with that of Yrala as one of the bravest, discreetest, and most beneficent of the first rulers of that country. From the permanent establishment of the town of Buenos Ayres the conquest of La Plata may be regarded as achieved, the foundation of towns which still exist in its various provinces having previously been made. But for many years the colonists were disturbed by the open hostility or treacherous attacks of the Indians.

Owing to the rapid increase of European population, all the country south of the confluence of the Paraguay and Parana was in 1620 separated from Paraguay, and the government of the "Rio de la Plata" established, with Buenos Ayres for its capital. At the same period Pope Paul V., at the request of the Spanish sovereign, Philip III., made it the seat of a bishopric.



IGNATIUS LOYOLA.

CHAPTER XXVII.

Arrival of the Jesuits in South America.—A pious Fraud.—Early Missionaries.—St. Francis Solano.—Chaco Indians.—Fathers Cataldino and Marcerata proceed to Guayra.—Foundation of Loreto.—St. Ignatius, St. Thomas, and the twelve Missions.—Establishment and Destruction of the Uruguay Reductions.—Mamelucos of St. Paul.—Persecutions of the Indians.—Attack upon Guayra.—Retreat of the twelve Thousand to the Salto Grande.—Descent of the Falls.—Peace at last.—Renewal of the Uruguay Reductions.—Bickerings between Ecclesiastics and Laymen.—Retreat of another twelve thousand.—Fathers De Montoya and Tano are dispatched to the Continent: their Missions are crowned with Success.—Fire-arms and papal Briefs.—Another Attack of the Mamelucos.—Battle of Acaray.—Triumph of the Reduction Indians.—Don Bernardin de Cardenas.—Excommunications.—Penitence of the Governor.—Deposition of the Bishop.—Return to Asuncion.—The Dictator.—Cardenas is relieved of his assumed Authority and retires to La Plata.—Defeat of the Mamelucos and Guaycurus.—Services of the Reduction Indians.

THE French soldier who, at the siege of Pampeluna, brought to the ground its gallant defender, little thought what a work he

was consummating. The wounded, disabled, suffering founder of the Jesuit order, while perusing the holy and miraculous life of the Savior, instead of the adventures of knights-errant, could have had but a faint consciousness how deeply the new spirit was moving him, and how perfect a regeneration he was about to impart, not only to his own inner being, but to thousands and ten thousands of God's unredeemed creatures. But the same voice that arrested the persecutor on his way to Damascus here spoke through the pages of Holy Writ, and converted a brave soldier and his few followers into the most dauntless champions of Christianity the world has seen since the days of Paul. And thus Ignatius Loyola founded an order, probably the most complete and united in itself on record, but into the history of which enter differences, divisions, and disputes, inviting either to the partisan who would unite in the enthusiasm or bitterness of one cause or the other, or to the impartial writer who would censure or applaud in an equal measure of justice. For where one has found pious zeal, unwearying devotion, and every worldly sacrifice wherewith to stamp an imperishable glory upon the deeds of Loyola's sons, another has presented a picture of selfish designs, base intrigues, secret plottings, and inordinate ambition.

That portion of the history of the Jesuits to be considered here conveys a very favorable sense of the mission marked out for many of the fathers. Whatever their European wranglings may have been, they scarcely extend to the reductions of South America. How low soever may have been their court intrigue, according to writers well informed or not, in the supplanting of ministers and strife for offices of power, a lofty calling awaited the Jesuits in the vast region of Paraguay. Pascal, Pombal, Choiseul, Aranda, Louis XV., Madame de Pompadour, Charles III., and the like, may have applied all the asperities of their respective languages to depreciate the Jesuit influence, but on this side of the Atlantic their work was holy.

Montesquieu, in speaking of the company of Jesus, says: "It is to its glory to have been the first to associate in those regions the idea of religion with that of humanity; in repairing the devastations of the Spaniards it undertook to cure one of the greatest sores that have ever infected the human race."*

Voltaire admits that, "The establishment in Paraguay of the

* Esprit des Lois, liv. iv., chap. vi.

Spanish Jesuits alone seems, in some respects, to be the triumph of humanity."*

Then let the means serve the end, and though the fathers may at times be found erring from a path strictly scrupulous, let it be borne in mind that it is for purposes not unworthy of good men.

About half a century from the discovery of the western continent, and nine years after the followers of Loyola had been organized into a religious body, a few Portuguese Jesuits accompanying the expedition of Don Thomas de Soza, Governor of Brazil, landed at Bahia de todos los Santos. They were the first of that order destined to fulfill the duties of the missionary among the aborigines of South America; and, faithful to their vocation, they were soon engaged in the arduous task of converting them to Christianity. These fathers are supposed to have facilitated their labors by a pious fraud. They came as the descendants of St. Thomas, the apostle of Christ, as chosen delegates to proclaim eternal peace and happiness to all those who would bow to the cross and come within the pale of the great Mother Church.

The supernatural and the marvelous are alluring to minds darkened by ignorance and superstition. Savonarola comprehended the springs of human impulse when he declared to a bigoted multitude that he was gifted with something more than the ordinary powers of man, for strange was the devotion of his followers even to the fiery ordeal. So also did the Indians believe that St. Thomas, the subject of every missionary's discourse, had assumed the guardianship of the land. So did they credit and adopt, as one always familiar to them, the tradition to which the Jesuitic teachings gave rise—that St. Thomas had landed on the coast of Brazil, journeyed throughout the vast country of the Guarani race, preaching, cross in hand, Christianizing savages, and taming wild beasts; then, that he traversed the grassy deserts of the Grand Chaco; and finally crossed the Andes into Peru, when he must have descended, like the setting sun, into the Pacific, as we hear of him no farther. There was still another mystery connected with this mission of the apostle. It was taught and believed, that the cross he bore had been hidden by some unconverted Indians in a lake near Chiquisaca, and there found by a Padre Sarmiento.†

* Essai sur les Mœurs.

† Don Pedro Alvear, commissioner appointed for adjusting the boundary line between Spanish America and Brazil.

Thus the Jesuits began their early teachings. Physically, morally, and spiritually dauntless, their boldness of speech was soon made practical in an equal boldness of action; and so early did they succeed in engaging the reverence of the natives that, from the outset, not all the panoply of Mars could have given them such sense of security as did their humble garb and sandal-shod feet. A way was forced into the depths of the forest that stretched westward, and in this direction they pursued a perilous course until the Parana rolled majestically before them, and the hardy fathers found themselves in Spanish territory, brought into contact with the settlers of La Plata, who received them with all the marks of consideration their good intentions could claim.

We read much of the spiritual thirstings of the first conquistadores. The discovery of Peruvian gold never elicited more joyous demonstrations than the arrival, during the early stages of the conquest, of a few ecclesiastics. The slackened zeal of modern times conveys no sense of the religious spirit of that age, and the Church was careful to make an early recognition of this devotion in the elevation of Asuncion to the dignity of a bishopric, an honor conferred upon the rising capital of La Plata by Pope Paul III. Indeed similar appointments were soon after made for Tucuman, Cordova, and several other cities of New Spain noted for their fervency.

Yet, notwithstanding the establishment of these bishoprics, they were at first but feebly sustained. Very few of the Jesuits who had landed on the South American Continent had at that period reached this interior portion of it, and as missionaries their want was severely felt. The ecclesiastics who administered religious instruction and the holy mysteries in the provinces of Paraguay* up to the latter part of the 16th century were mainly of the Franciscan order; men of zeal, but endowed with little of the nerve and indomitable perseverance so conspicuous in the Jesuit, whose advent in these times was soon to be the dawn of a new religious era.

Among the Franciscans the most deservingly prominent is St. Francis Solano. He came from Peru for the purpose of converting the wild nomads of the Chaco, a project attended with no little success, notwithstanding its uninviting prospects. Solano's career, according to Charlevoix, was that of "a saint whose zeal knew no bounds, and whom God invested with the gift of mira-

* The name of Paraguay was then given to the whole of La Plata.

cles to such a degree that the inhabitants considered him as something more than a mortal being." His name grew into a watchword to those who languished in the service of the Church, and many flocked eagerly to his banner; but while unceasingly engaged in this holy work he was recalled by his superiors from the field of his labors.* The soul of the enterprise for redeeming the tribes of the Chaco, its existence ceased at his departure, and a temporary check was given to any further advancement. The Bishop of Tucuman, however, thought to give a new impulse to the missionary work, and secure the conversions Solano had already made. There were evidences of a rich spiritual harvest which needed but the reapers, and he judiciously concluded that more faithful and more successful instruments could not be found than the members of the Jesuit order. The experience of thirty years had shown that they alone were in every way fitted for the hardships and reverses of a missionary's life.

So the bishop sought in Brazil and Peru this much-needed assistance, imploring them in somewhat vehement style, "by the entrails of Jesus Christ" to grant the request. There was no difficulty in complying. Re-enforcements from both countries arrived in 1586 to appease the religious hunger of the land, the fathers from Peru settling in Santiago, then a town of about 2500 inhabitants, and those from Brazil entering Cordova amid acclamations that testified to their heartfelt welcome. The gushing of water from the rock could not have been received more gratefully than the arrival of these Jesuits. They came as "angels from heaven," says a writer of their order, hailed by the shouts of the people and the Te Deum of the Church.

But there are schemes and designs lurking beneath the surface which gradually develop themselves. The Jesuit's vocation begins to stand out prominently before the world, and it is to benefit the native, whose interests are early and faithfully taken to heart. This course, as politic as just and generous, soon proved a source of exacerbated feeling between the Spanish population and the fathers.

The various tribes bordering on the Chaco had bidden fair to receive the baptism of the Church under the teachings of Solano, but their hostile disposition was found to permit of little success after his departure. Living mostly on horseback, subsisting by the chase, and continually wandering from one portion of the

* Charlevoix, vol. i., p. 194.

country to the other, each lord of all he surveyed for the time being, they could not be led to settle quietly into a religious community. Other more favorable localities were sought and discovered. The tribes east of the Parana and Paraguay, supposed to be of Peruvian origin, and especially those in the neighborhood of Asuncion, were found to be more docile and in the enjoyment of comparative civilization. The attention of the fathers was therefore given to this quarter of the continent as the most open to the spiritual conquests they had been so long anticipating. The Province of Guayra was looked upon as possessing inviting prospects; thither the chosen fathers, Ortega and Fields, the former a Portuguese, the latter a Scotchman, directed their steps. Proceeding to Ciudad Real—founded first in 1557 by Rui Diaz Melgarejo, under command of Yrala—they boldly advanced into the wildest districts of the country, and in a short time gathered around them "*two hundred thousand* Indians quite ripe for the kingdom of God."* Charlevoix must be in error with regard to the number, but they doubtless laid extensive foundations for the missions that ere long dotted the province.

The Jesuit name began in the mean time to grow in favor among the natives, for most zealously did the order espouse their interests, in doing which it could but incur the enmity of the Spaniards. The larger portion of the population regarded it as a right, a privilege in virtue of conquest, that they should enslave the Indians or force them to their service, and would compromise for nothing less. The fathers, to diminish this servitude, but undoubtedly aiming also to establish church communities which should be separate from and independent of the cities, reasoned against this right. Thus there was soon sufficient ground for the growth of a future contest. The two parties had been for some time nursing this enmity, and on the arrival of the "Provincial" did not hesitate to make open hostile advances the one against the other.

It was in 1607 that the Father Diego de Torres, of Rome, attended by fifteen clerical assistants, arrived in South America in the quality of Provincial of Peru and Chili. He immediately placed himself at the head of those who had opposed the cruelties at all times exercised over the natives. He made it his chief aim and duty to alleviate their sufferings and to put an end to the bloody strifes that had year after year been waging between the

* Charlevoix, vol. i., p. 155.

conquerors and the conquered. Oftentimes the taunted spirit of the latter had goaded them on to some desperate act of revenge, or carried fire and destruction into infant settlements. This, too, the fathers sought to check.

"Nor would, with all their power, the King of Spain,
Austrian, or Bourbon, have at last availed
This torrent of destruction to restrain,
And save a people every where assailed
By men before whose face their courage quailed,
But for the virtuous agency of those
Who, with the cross alone, when arms had failed,
Achieved a peaceful triumph o'er the foes
And gave that weary land the blessings of repose."*

The Provincial crossed from Peru into the country now known as the Argentine Confederation, passing through Jujuy, Salta, Santiago, and visited all the important cities west of the Paraguay. His arrival was every where hailed with the most enthusiastic demonstrations, and every grateful acknowledgment was lavished upon him. But even the limited number of individuals composing his retinue, at first a subject of regret, was soon found sufficient to create distrust, and indeed not a little startle the people of Tucuman by the lenient and indulgent course they proposed pursuing toward the much-aggrieved Indians. It was not expected that De Torres should advocate such a cause, and it proved too much at variance with their preconceived ideas of the treatment due to these people to at all elevate the Provincial in their good opinion. When, upon one occasion, he gave pecuniary compensation to a number of native laborers who had assisted in the erection of a church at Cordova, it was considered a grievous offense, and met only with the most vehement clamors against its injustice.

The Provincial, having made by such examples many enemies on the west of the Paraguay, found his way to Asuncion; but a rumor of his preachings had preceded him, and roused a by no means amicable spirit in his behalf. Such indeed were the hostile feelings entertained toward him, that he entered the city only by the intercession of the governor and bishop.

These later demonstrations signally failed in their desired effects; for, about this time, that is, toward the latter part of 1609, new instructions were received from his Spanish Majesty which entirely conformed with the views of the Provincial. Commands

* Southey: Tale of Paraguay.

for the conversion and liberation of the Indians were so urgently conveyed that the authorities of Asuncion deemed it proper to immediately comply, although they had not unfrequently disregarded such royal ordinances, trusting for security in their distant and isolated position. To carry into effect the new decree, particular attention was, as heretofore, given to the Guarani race, stretching over the immense tract of country lying between the Parana and Paraguay Rivers and the Atlantic Ocean, and resembling in nothing the warlike Charuas and Abipones in the vicinity of the western cities.

Lewis de Bolanos, a disciple of Solano and translator of the Catechism into the Guarani language, was among the first actively engaged in the conversion of these natives. He had confined himself, however, to the neighborhood of Asuncion. The Provincial proposed to extend the benign influence of the Church into more interior regions, to immediately follow in the footsteps of Ortega and Fields, and reap the reward that seemed there to await them. For this duty were chosen Fathers Cataldino and Marcerata. They consented to accept it under certain conditions, and these conditions embodied the policy of the Jesuits: they must be permitted to build churches and incorporate towns independent of all Spanish influence or control, and the privilege should moreover be extended to them of opposing in the king's name all those who should attempt to reduce the natives to personal servitude. These demands were finally acceded to, though at first somewhat ungraciously received.

The destination of the fathers was the Province of Guayra, at that time, as now, after a lapse of two centuries and a half, very little known. We can readily imagine that there were many impediments of a very serious character in the journey of these two Jesuits. Though passing through a country neither mountainous nor inhospitable, as regards climate, it presented other features of obstruction: its thickly-grown and trackless forests, its broad inundating rivers,* and hordes of uncivilized Indians, were alone sufficient to daunt the boldest travelers. It may be noticed at this point that intrigue and cunning are words familiarly and unhesitatingly associated with the Jesuit; but nothing is hazarded in saying that in their labors among the La Plata savages an energy, piety, zeal, and perseverance worthy of the best cause are

* Several of Ortega's companions, when traveling among the Guarani, perished by one of these sudden overflows of water, and the father barely saved his own life.

eminently conspicuous. It may be safely added that no historical church order can boast among its members of such activity, devotion, and self-sacrifice as have distinguished the sons of Loyola in their missionary labors over the entire surface of the globe. There was in this order that unity of thought and action which gave its every step an irresistible momentum—a secret, invisible, but iron link, that bound all its parts into unison and harmony. The same spirit moved and had its being in the Jesuit, whether as keeper of kings' consciences and ruler in the councils of nations; whether superintending the observatory at Rome or that of Pekin, in the mandarin's garb; whether in Japan or Paraguay; whether engaged in heated controversy with Pascal and Pombal, or devoting a life to the savages of Africa and America, in explanation of the signs, symbols, and mysteries of the Holy Church, of the rotation of the heavenly bodies and the wonders of the universe. Fathers Cataldino and Marcerata were equally in their proper sphere, whether in the thickets and woods of Paraguay and the pampas of the Chaco or at the court of Madrid. A buoyant untiring zeal bore them on, as it did their predecessors and their successors, in whatever duties and charges fell to their share.

Ciudad Real and Villa Rica lay in their way, but the inhabittants of these two towns had grown as sensitive as the rest of the Spanish population in the country with regard to the encroachments of the fathers upon their imaginary rights, and so withdrew their previously proffered assistance. They found little or no sympathy among their own countrymen, but, thankful that they were held in better esteem by the natives, they pushed on for Guayra; journeying by land until reaching the Paranapané, they embarked upon this river (a beautiful and well-wooded stream), and ascended to the mouth of the Pirapé, one of its tributaries. Like a vision, they now beheld the banks crowded with Indians in expectation of their arrival, and prepared to welcome them in their midst. Drawing their boats to shore, they landed.*

Entering into an explanation of their mission, no difficulties were experienced in reconciling the natives to the destiny thus shaped out for them. And

> "Then the black-robe chief, the prophet,
> Told his message to the people—
> Told the purport of his mission;
> Told them of the Virgin Mary,

* Charlevoix, vol. i., p. 247.

And her blessed Son, the Saviour,
How in distant lands and ages
He had lived on earth as we do;
How He fasted, prayed, and labored;
How the Jews, the tribe accursed,
Mocked Him, scourged Him, crucified Him;
How He rose from where they laid Him,
Walked again with his disciples,
And ascended into heaven."

No doubt

"The chiefs made answer, saying:
We have listened to your message,
We have heard your words of wisdom,
We will think on what you tell us:
It is well for us, O brothers!
That you came so far to see us."

They had conceived a reverence for the missionaries, as unexpected as it was sincere; and from the assurances that had been held out, did not doubt but that life, under their guidance, would be most happy. Voluntarily and eagerly yielding to their direction and commands, baptism was administered to young and old, and the whole assembly, consisting of several hundred families, submit in peaceful obedience to Christian rule. Means are devised by which the wants of this new people may be supplied. The immediate project is to lay out the foundations of a permanent mission, and the present locality, hallowed by the scenes that had just transpired, seemed suited to this purpose. It is chosen. Here, then, at the mouth of the Pirapé, the few workmen who had accompanied the fathers, assisted by the natives, begin their labors toward the construction of this Christian village; it is called Loreto, the first of the famed Paraguay missions, and stands out a bright and redeeming spot in the savage country that surrounds it.

Huts were hastily erected to shelter the people from the inclemency of the weather, and soon the church, and other public buildings rose up in stately proportions from their foundations. Loreto increased in wealth and prosperity; it had well-cultivated fields, a peaceful and diligent population, among whom were numbered agriculturists, mechanics, and artisans. The training of the rising generation was not neglected; it grew up impressed with a perfect sense of the obligations due the missionary. Many were the benefits bestowed, and there was no want of followers in return. The embassy of the fathers was one of peace; they used no arms but those of words; they had apparently but one object, and that was the welfare of the Indian.

Reports of this success reached Asuncion, and it was responded to by the departure of several fathers and assistants for the new field. Such were, in the mean time, the number of natives that flocked to the mission or reduction, as it was styled, that the fathers probably found it difficult to enforce the regulations that entered into their peculiar government. It seems to have always been their policy, and it may in most instances have arisen from necessity, never to allow a larger population to accumulate in one town than could be intrusted to the care of two or three of their order; hence other localities were sought for new missions, and the arrival of assistance hastened these measures. The second reduction was called, in honor of the father of the order, St. Ignatius. Others followed in rapid succession until the province counted no less than twelve. One received the name of St. Thomas, for by a tradition of the Indians or Jesuits—it would be difficult to say which—in the mound upon which it was built that apostle had interred a number of Christians.

This success in Guayra awakened a missionary spirit in every Spanish city and town. Besides some scattering reductions along the Parana, we find them in 1627 rising on the banks of the Uruguay, amid warlike tribes of Indians who had again and again baffled the arms of Spain, but appeared for the moment to lean to the more moderate rule of the Church. Father Gonzalez is the indefatigable character here presented to us. Attended by two assistants he found his way to the Uruguay, and succeeded in establishing two or three small missions with every prospect of future prosperity. With rare enterprise he undertook at the same time to survey the unknown regions of country that stretched far around him; he entered the Province of Tapé, and would, had not an untimely death sealed his fate, have extended his labors throughout the Uruguay basin. It was while thus engaged, and at the same time watchfully guarding his small but growing towns, that he was called upon to battle with rebellious proselytes and neighboring unfriendly tribes. Adherence to a determination not to abandon his flock cost him his life. The reductions were attacked and the inhabitants ruthlessly murdered. The fathers all perished—one was stoned to death. Gonzalez is regarded as one of the missionary martyrs. He did indeed apply all his energies and devote his whole soul to the great work of conversion which was illuminating the many dark places of Spanish and Portuguese rule with the lights of Gospel truth. Every danger,

every sacrifice seems to have been met by him with a stoic calm that marked him the divine instrument he was. Father Tanner, in his *Societas Jesu usque ad sanguinis et vitæ profusionem*, enumerates tersely the many trials of the father—"incredibile dictu est," says he, "quanta in hisce molitionibus dura atque adversa tolerârit, edendi bibendique penuriam, lecti, testi ac vestium inopiam, æstum, lassitudinem, sudorem et defectionem virium." He was born in Asuncion, according to the same writer, "parentibus Hispanis et nobilitate et virtute claris."

This was the sad beginning of a succession of severe trials and hardships, which required all Christian fortitude and Jesuit resoluteness to face. The warlike Indians proved unfortunately not to be the only obstacles to the missionary's work: an ill-forboding storm arose in another quarter, the town of San Paulo, taking us back to Guayra.

The city of San Paulo was at this time a den of pirates and marauding gangs, the safe retreat of all outlawed Spanish or Portuguese adventurers, who chanced to find their way to the Brazilian coast. Slave-dealers by profession, they speedily overrode the influence and power of the Church, and drove out its ministers. Their town became the great slave-mart whence issued thousands and ten thousands of Indians to be bartered away on the public squares of the Atlantic cities. Here they assembled day after day, as party after party returned from its inhuman expedition, the crowds of trembling, bleeding wretches that had been hunted and captured in some distant wilds never before trodden by the white man. Their passage was every where marked with destruction and depopulation without check or remonstrance. The intricacies of the forest were pierced in their savage pursuit, and the natives followed to their most secret hiding-places.

These well-trained, well-armed, roaming, pillaging Paulistas or Mamelucos, as they were popularly called, became the dread and scourge of this beautiful land. Many of the persecuted Guarani by good fortune found their way to the newly-established missions of Guayra, and took refuge under the government of the Jesuit fathers; indeed the tide of population, like a retreating army, had gradually receded to this point, the hungry enemy still hanging on its flank. The Jesuits embraced earnestly the opportunity of affording these natives, under such trying circumstances, every assistance and protection, and so brought upon

themselves and their missions the Mamelucos' merciless revenge. Notice soon arrived of their but too rapid advance, foreshadowing a general onslaught upon the hapless reductions. The accounts of coming danger were quickly confirmed by an attack upon the two frontier missions, St. Anthony and St. Michael; many inhabitants perished, but the greater number remained the prisoners and property of the enemy. The retreating few fell back upon the "Incarnation," which in turn underwent its ordeal of fire and sword.

Unfortunately for the Jesuits and for Spain herself, Don Lewis Cespedez was at this time Governor of Asuncion. His wife, a Portuguese woman, bore an ill-will to the Spanish, which was only surpassed by her hatred of Loyola's order. The governor, acting under this influence, as well as from entertaining of his own accord no very amicable feelings for the fathers, turned a deaf ear to their entreaties for succor against the invading bandits of St. Paul. He showed in this matter a dereliction of duty as weak as it was infamous—injurious to himself and treacherous to his government. Personal aversions were indulged, and personal dislikes satisfied, that he might play away Spanish territory into the hands of Spain's most inveterate rival and enemy on the southern continent. It was not a difficult game, and the loss and gain are easily traced. To-day the Portuguese or Brazilians embrace within the limits of their empire far more territory than they were virtually entitled to, and all that they have acquired in addition to their original possessions, was permitted to slip through Spanish fingers by the imbecility of Spanish governors. The whole vast Province of Guayra now belongs to Brazil, and her possession of it may be traced to this refusal of Cespedez to tender any assistance to the missions in their present critical condition. It was false to imagine that these reductions would not prove loyal to Spain; it was short-sighted, indeed, not to perceive that Jesuit influence, in this its legitimate missionary sphere, more powerful and more stable in itself than all the arms of the mother country could have made it, was the proper instrument to permanently secure the extension of the boundaries of New Spain.

Thus indirectly seconded, and even at times openly countenanced by this faithful governor, fresh incentives were afforded the Mamelucos for continuing their cruel and unwarranted depredations upon peaceful missionaries and their still more unoffending flocks. An extensive but secret expedition was in fact fitted out

with a view to complete the extinction of the Guayra reductions. Before proceeding to extreme measures the Paulistas resorted, according Charlevoix, to a sacrilegious piece of trickery which met with some success. Clothing themselves in the humble habiliments of the Jesuit, they dispersed, in various directions, to visit those places which had been already frequented by the fathers, distributed presents in more than necessary profusion, erected crosses, and with mock piety, aided by a perfect fluency in the Guarani language, explained the principal articles of the faith. Then came in due form a proposition to add another to the present happy and prosperous reductions, by establishing themselves into a settled and permanent body, to whom the blessings of perfect peace should not be wanting. The delusion was successful, and vast numbers were entrapped. These wolves in sheep's clothing bound or murdered the victims as best suited their convenience, summarily disposing of those that proved an encumbrance, and driving the rest to the market.*

But this drama proved too slow a mode of procedure for the Mamelucos, who soon doffed their gowns, and once more the steel-clad pestilence swept the country. They made a sudden and unexpected appearance at the mission of St. Paul, their leader's entering the house of Father Suarez being the first announcement of their arrival. This ungracious surprise, the fierce aspect of the bandit chief, and his offensive weapons roused all the fears of the good Jesuit, who fell upon his knees and implored, with tears, that the few unoffending Christians under his guardianship might be spared. But finding his supplication unheeded, he calmy bared his breast and said he was satisfied to lay down his life for his flock, but implored, in the name of Jesus, that it might be a propitiation for all; that his people might be allowed to disperse in peace. Saurez's resignation disarmed the Paulista, and saved his own life, but the natives shared their usual miserable fate. It was to them a choice between slavery or death. Some yielded to the former, others preferred the latter, and a few only escaped to the neighboring missions to tell their tale of despair. The marauders passed to other settlements, and marked their steps with blood and desolation. Emboldened by a reiterated refusal, on the part of the Governors of Asuncion, to afford any assistance to the missions, they had little regard for any one or any thing; their object was to drive the Jesuits out of Guayra, and they had few scruples

* Charlevoix; Dobrizhoffer, vol. i., p. 160.

as to the means employed. St. Xavier and most of the reductions were razed to the ground; houses were ransacked, churches pillaged, altars polluted with innocent blood, and the whole given to general conflagration when its treasures had enriched and overladen the successful enemy. Loreto and St. Ignatius, the first and last of the Guayra missions, now stood alone in the enjoyment or the misery of a momentary existence. Here a consultation was held among the surviving fathers and natives, who had retreated to this their last place of defense. Some proposed a united and desperate attack upon the Mamelucos, trusting for victory to the superiority of their numbers. Others, whether more judiciously or not it would be difficult at this distance of time to say, advised an immediate retreat from the dangers that surrounded them, suggesting that there were brilliant hopes in other lands, and nothing cheering in their present condition. This latter course was approved. Over twelve thousand people, men, women, and children, were hastily assembled together, bearing with them whatever portable property they had secured from the general wreck, and provisioned as time and circumstances would permit. Organizing themselves with that order to which they had been trained, and entreated by the Provincial, who was in the country throughout this contest, to obey their pastors, this motley army was marched to the Parana. Meantime the Paulistas were in pursuit, for scarcely had Loreto been abandoned when they entered the now deserted town. That mission and St. Ignatius were soon a heap of ruins.

What fortunate traveler will be the first to find his way into this old Province of Guayra, and, descending in his canoe the almost fabled river of Paranapané, gaze upon those interesting ruins which tell of a civilization due to the sacrifices and Christian devotion of Jesuit missionaries? Or perhaps time may have effaced every lingering vestige. It is sad that the servants of God should have met with such rewards, and a foul blot to Spain and Portugal to have permitted the inhuman depredations here practiced. An industrious and peaceful population was in a moment of time swept from the land. It has been estimated by several good authorities that no less than sixty thousand Indians were sold in the public square of Rio Janeiro between the years 1628 and 1630, the period of this succession of invasions; and it was not the savage Indian that suffered thus, but men who had received the light of the Gospel and come within the pale of Christianity.

The retreating army reached the Parana in safety, startled now and then by a false report of pursuit. A number of balsas or rafts were there constructed to descend the river; they reached the Salto Grande, but here they were called upon to endure renewed hardships. These rapids extend for many miles down the river, and the passage by land to their base is both difficult and dangerous. As an experiment to test the force of the fall, some of their boats were given to the current, and dashed to atoms in descending. Then old and young, mothers and children, fatigued by eight days' marching, slowly commenced the painful journey by land. A scarcity of provisions next added to their trials; they subsisted as they could upon roots and upon whatever wild fruits could be found in the surrounding country. Many deaths occurred; and, to avoid the horrors of a general starvation, they were, for a short time, divided into four sections, and directed to take different courses. A number, unable to proceed, were left in the country on either side of the falls, where they remained for upward of four months. Finally, Father Montoya assembled these scattering remnants of a once numerous population, and formed them into two missions near a little river called Jubaburrus, flowing into the Parana on its left bank. These new missions were called Loreto and St. Ignatius.*

The unholy work was thus consummated. Though deplored by many, it found favor among the usual enemies of the Jesuit missionaries; their exultation, however, was but short-lived. The important fact at last revealed itself to their blinded and prejudiced minds that they had been false to themselves; for the Mamelucos, after every possible pillage and depredation had been committed in Guayra, assembled their forces, marched successively upon the Spanish towns of Villa Rica and Ciudad Real, and destroyed them both. To this startling news was soon added that of the expected advance of the Portuguese upon Asuncion. Much to the relief of that city, these dismal expectations were not fulfilled, for other and more attractive inducements had given a different course to their aims for the enslavement of the Indian.

The death of Gonzalez had by no means thwarted the indomitable purposes of the fathers. The country of the Uruguay, though settled by warlike tribes, was found to be advantageous in many respects for the establishment of missions. The places of those who fell martyrs to their devotion were filled by others equally

* Charlevoix, vol. i., p. 350.

enthusiastic. Father Ranconnier was the soul of this new attempt, and, under his direction, in one year four reductions* sprang up as from some enchanter's wand. About the same time, in 1633, as if to ruin every good project, the bickerings between laymen and Jesuits were again renewed. The Bishop of Asuncion, considering the reductions as coming within his diocese, complacently convinced himself that Franciscans, or rather ecclesiastics, would better supply the places of the present Jesuit beneficiaries, and he undertook to make known his impressions on this point somewhat energetically. The Governor of Buenos Ayres hazarded next in turn to entertain the design of establishing a Spanish city in the midst of the Uruguay reductions, but was speedily requested by Philip IV. of Spain to banish all such thoughts from his mind.

In revenge for such unexpected opposition to their schemes against the Jesuits, governors and bishops declined assisting the missions in their continuous defense against the Paulistas and unfriendly Indians. From the Province of Guayra the attention of both these latter had been turned to the Uruguay. The port of San Pedro was one of the slave-markets of the Paulistas, and the missions were so conveniently approachable from this point that it required but short consultation to decide upon their annihilation.

Father Romero had received early intelligence of the expected attack upon the missions, and being stationed at Jesus Maria, the most easterly, made every possible preparation for defense. The hounds were soon upon him, and though his people gallantly stood at bay for a while, they were eventually forced to capitulate. The church and houses were burnt, many Indians butchered, and the rest taken prisoners. A general abandonment of all the neighboring towns took place in consequence, for to resist the Mamelucos was always looked upon as little short of madness; yet they smarted not a little under this new triumph. The missionaries with their Indians retreated in safety, and even burnt some of their reductions in so doing, to prevent them from falling into the hands of the enemy. The Provincial had in the mean time been entreating for aid at Asuncion, but without success. Buenos Ayres and Corrientes equally declined. Abandoned to their own unaided efforts, the fathers, marshaling with all speed whatever force they could bring together, obliged the Mamelucos

* St. Joseph, The Angels, St. Peter, and St. Paul.

to retreat with their present rich booty. Spain never regained this lost territory, as she never regained that of the Province of Guayra. They are both embraced within the Empire of Brazil, both undoubtedly rich and fertile tracts of country, coursed by broad and navigable streams, but uncultivated, without population, and very little known.

The Paulistas, however, did not altogether retire from the country; a few sudden attacks and some considerable skirmishing still warned the people that there was cause for alarm. In the early part of 1638 the reductions of St. Charles and the Apostles were abandoned. A slight success at first favored the Indians in the field; the Mamelucos were for a moment checked in their march, but, profiting by the indecision of the natives —surprised at their own good fortune—they made a vigorous attack that placed the whole country at their discretion. A general evacuation of all the missions* took place; twelve thousand Indians,† exclusive of women and children, crossed the Uruguay, settled in the country between that river and the Parana, and were afterward numbered among the thirty Parana missions.

Thus after a contest of several years and the destruction of twenty-one reductions, the Jesuit missionaries were gradually forced and driven into the territory now called Missiones, hemmed in on every side by Spanish, Portuguese, and Indians, and pursued by the enmity of their own countrymen as by the arms of the Paulistas. They had been engaged in a fearful and bloody strife for the Church as well as for Spain, and yet found no relief beyond the limits of their own reductions. A hundred thousand Christian natives had been either butchered or enslaved, while the governors of provinces and bishops of dioceses looked calmly on, the latter threatening all the while, in the face of the king's edict, to purge the land of Jesuits, the former proposing to lend thereto the more substantial means at their command. Brothers of the order had nobly perished at the hands of savages they sought to convert, but outside sympathy was yet withheld. We know that all their interests were at variance with those of the Spaniard, and therefore the fathers keenly felt the want of more faithful allies and more trustworthy friends. Thwarted in their labors, and unnoticed in their earnest appeals for aid to the high-

* St. Joseph, the Angels, St. Peter, St. Paul, St. Christopher, Jesus Maria, St. Anne, St. Joachim, St. Theresa, St. Charles, the Apostles, and St. Nicholas.

† Charlevoix, book i., p. 382.

est authorities on this side of the waters, abandoned to their own resources, and left to carve out their own destiny, they had recourse to the final tribunal—the Spanish monarch and the Pope. For although fortune once more began to smile upon the reductions they had so industriously established out of the remnants of the former missions, yet their late reverses were remembered with grief and wounded spirits. Their present proximity to the Spanish towns was a check upon all their movements and measures; and to secure the prosperity, wealth, power, and independence they sought to attain, other privileges and immunities must be first secured. The Spaniards had declined to assist them; they would no longer succumb to this unnatural opposition. They would now have arms of their own, and would fight their own battles.

Fathers De Montoya—one of the most learned men of his day—and Tano sailed for Europe, the former accredited to the court of Spain, the latter to the Pope. Both were eminently successful in their missions. De Montoya forcibly represented the necessities of the missionaries: they were laboring, he said, only for the conversion of the Indians, for the success, prosperity, and safety of their reductions; and the king, favorably disposed to his Indian vassals, under the good and loyal guidance of the fathers, granted his every request. The law of 1611, forbidding the Spanish settlers to enslave the natives unless captured in a just war, had, like many others, been little heeded.

> Often had kings essayed to check the ill
> By edicts not so well enforced as meant;
> A present power was wanting to fulfill
> Remote authority's sincere intent.

De Montoya asked that it should be strictly carried into execution; he also succeeded in obtaining from the king an edict which not only commanded the Mamelucos to set at liberty those who had been captured by them, but which was to find guilty of high treason any who might attempt to renew this unlawful traffic. This ordinance, though of a more humane character than that of his grandfather, Philip II., when he condemned to death the whole population of the Netherlands, rivaled it in its utter impracticability. De Montoya did not blind himself to the fact that little confidence could be placed in these parchment scrolls unless accompanied by a *sword of justice*, the unfailing instrument which could alone sever the Gordian knots of future dissensions.

An all-important object was to obtain a grant which should allow the reduction Indians to have *fire-arms*. This was the main proposition made by the Jesuit envoy. It was objected that the natives once finding themselves in the possession of such power, would use it to endanger the stability of Spanish authority. These fears were dissipated by the agreement that they should not be permanently supplied with arms except in cases of urgent necessity, and by the assurance furthermore that the fathers would be responsible for their conduct. De Montoya overcame all obstacles; he received a grant, with the seal of Spain upon it, which established the perfect independence and future power of the missions.

Tano had equal reason to be elated with his success. He was received at Rome with every kindness and regard. His story of the hardships, reverses, and sacrifices of the Jesuit brothers in the wilds of South America, of the cruelties and butcheries of the Mamelucos, and of the inimical disposition toward them even of the Spanish settlers themselves, was full of thrilling interest and the tenderest appeal. The sympathies of the Church were with him. Pope Urban VIII. was much affected at his recital of all that had transpired in the brief history of the missions, and the anathemas of the Holy See went out against the actors and abettors in the heinous offenses committed against Loyola's devoted sons. The Pope accorded all that could in any way tend to the tranquillity and security of the new missions, and, says Charlevoix, "would have made him (Tano) completely happy, could that missionary answer for the thunders of the Vatican being sufficient to put an end to all the evils of which he had given his Holiness an account."* But among the Mamelucos the thunders of the Vatican, like the thunders of the heavens, rolled on with an imposing noise and then died out, harming none.

Father Tano, on returning to Madrid from Rome, found a number of missionaries assembled at the instance of De Montoya, and prepared to accompany him to the western continent. He sailed shortly, but adverse winds forced him into Rio Janeiro. Here, making known the edicts of the Spanish monarch and the papal briefs, a shout of indignation, and even violent demonstrations, rose up against him and his attendants. Spiritual condemnations bore lightly upon the shoulders of the Mamelucos, but they were not easily composed with regard to a law which so materially affected

* Vol. i., p. 391.

their temporal goods; they lived by the slave-traffic, and it would take a powerful force to bring them to renounce it, to compel them, at that late day, to give up the fruit of their bloody toils in Guayra and Tapé. Their exasperation was not slight nor to be disregarded; several tumultuous outbreaks convinced Father Tano that his sacerdotal robes might not possibly prove a sufficient protection to his person. At the same time, the revolution which had taken place in Portugal, and which placed the Duke of Braganza on the throne, warned him against a longer stay in his present perilous position. He reached Buenos Ayres in safety in November of 1640. Father Montoya passed the rest of his days in Peru and Tucuman, performing many important and useful duties in the service of his order, and especially engaged in furnishing arms, for the grant of which the missions owed him every indebtedness.

The Mamelucos were still gathering strength. They probably never had a greater encouragement for renewing their inhuman conquests than that offered by the late Portuguese revolution. A declared hostility to Spain, arising from that event, only confirmed them in a bold determination to reach the Paraguay. Considering the countless hordes that composed the Guarani family, it is a matter of astonishment that this their mortal enemy ever should have advanced with impunity so far as he had; but gentleness, meekness, and unwarlike habits were the characteristics of their nature.* Yet a docile spirit may be spurred to despair. Pillaged churches and burning houses would stir even stagnant blood. Mothers, fathers, brothers, sisters, wives, and children mercilessly butchered, or bound and carried off to be sold in the market of some distant city, leaves its impress upon the Indian mind. To be pursued from place to place, hunted from wood to wood, with the prospect of eventual extermination, would make the dullest nature revolt. The Indian felt at last that he had the sinews wherewith to fight; fight he must, or there was an end to him; but his light lance and erring sling might even at this time have proved of no avail but for the gunpowder about to greet the Paulistas.

Due notice had been received of the expedition that was ad-

* M. Crétineau Joly is in error when he asserts (Histoire de la Compagnie de Jésus, vol. iii., p. 312): "Les Jesuites avaient trouvé les Guaranis cruels, vindictifs, enclins à tous les excès, sauvages par nature et avec volupté." Next to the Peruvians they were probably the most civilized people in South America, and their future amalgamation with the white race, while other tribes held their own in the deserts of the Gran Chaco, shows conclusively that they were above the ordinary level of the savage.

vancing against the reductions. The fathers made every effort to give their visitors a warm reception, and raised an army of four thousand men, mostly armed with bows and slings, for three hundred muskets were all that could possibly be obtained at the time; these were distributed among the chiefs, and they did effectual service in the coming engagement. The Paulistas, numbering four hundred, and joined by as many Tupis Indians, ascended the Acaray River in a fleet of boats. Abiaru, chief of the native army, advanced to meet them, and, stationing himself at the head of a small arm of the river, awaited their approach.

After a short and useless interview with the Paulista chief, he retired to draw up his force; soon the two boat fleets were seen steadily advancing to the shock. The banks were lined with men, women, and children, watching with intense anxiety this measuring of strength, and "invoking with a loud voice the Apostle of the Indies." The discharge of a small cannon, as unexpected as a stroke of lightning to the Paulistas, sunk three of the enemy's pirogues, and threw the rest into no little confusion. The three hundred muskets were also used with such deadly effect that the invaders pulled for the shore, determined to try their strength on terra firma. Here again they were vigorously met; a united attack of the whole Guarani force for once broke their line and completely dispersed them. Hotly pursued, they skirmished for a while, but finally secreted themselves in the thickets or sought shelter in the neighboring forests. Collecting the next day their scattered and much-diminished forces, and still despising the clouds of Indians that now began exultingly to hover around, they thought yet to drive them from the field, or at least gain time to be re-enforced. A rapid and murderous charge made by the Guarani exploded all these hopes. But few of the invaders escaped.*

For the first time the Mamelucos were worsted in their long-continued persecutions of the Indians. They had at last been checked and beaten in open fight, forced back into their own territory, and cut off almost to a man. It was a severe and withering blow, one from which they were long in recovering. The cobweb defense behind which the missions had heretofore fought was replaced by a sterner front, and the scales of fortune were completely turned. Hope and assurance relieved their old and habitual fears of the Paulistas. Twenty-nine reductions, banded together and supplied with arms, began to feel their power. The battle of Acaray made

* Charlevoix, vol. i., p. 407–8.

a hundred thousand natives, all weak and trembling until now, conscious of their strength. They now sprang, like the god, into the panoply of war and might. Yet scarce had the dreaded foe from without been vanquished when a domestic broil ensued—the old clashing between Jesuits and laymen is renewed. The Bishop of Asuncion wages war against them.

Don Bernardin de Cardenas is a prominent character in the history of Spanish America. He was a native of La Plata (or Chiquisaca), early distinguished himself as a preacher and a missionary, and when still young was elevated to the bishopric of Asuncion. Here his excitable disposition and executive qualities developed themselves. Looking upon himself as a head supreme to the government of church and province, utterly regardless of the separate and distinct powers vested in other officials associated with him, all affairs brought to the consideration of the city authorities underwent the ordeal of his consent or dissent. His was a temporal as well as a spiritual administration—a combination not unexampled, but inconsistent in this case, and injurious under any circumstances. Those hazardous enough to thwart this ambitious prelate's designs learned the violence of his displeasure. The bishop held within his grasp a mighty power—excommunication—one which he wielded mercilessly. From the governor down, all underwent this mark of his resentment, not once, but again and again. Day after day lengthened lists of excommunicated individuals were framed, whole columns of condemned were placarded about the town. No penitence was too severe to remove the mark of sin, though its blasting effect had been somewhat tempered here by its too frequent and continuous occurrence. The anathematized grew bold in their numbers; a rebellious spirit showed itself; a din of tumult and disorder reached the bishop's ears, and in the midst of it he wisely retired to Yaguaron, a considerable Indian village about thirty miles distant. His last instructions were that there should be no intercourse with the excommunicated, and that divine service should be performed in no church in presence of the governor, Don Gregorio de Hinistrosa. Hinistrosa's devout head bore heavily and sadly the excommunication that rested upon him; he calmed his anger and softened his jealousies that he might undergo the necessary penalties for its removal. For this purpose he found his way to Yaguaron, as an humble pilgrim come to atone for his sins. There was not a door but was closed against him, not a hand raised in his behalf. He

sought the presence of the haughty bishop, who received him with a demeanor and in a manner worthy of Gregory VII. Hinistrosa fell at his feet and asked forgiveness; it was purchased by consenting to pay a heavy fine.

Cardenas, in this retreat at Yaguaron, while forcing the penitent governor and people of Asuncion to humble themselves before him, was also engaged in concocting and planning schemes by which he was to bring about the overthrow of the Jesuits. Already had he forbidden many of the fathers to preach, and closed their schools in Asuncion. He had probably, among many other reasons, felt aggrieved because he lacked the power to exact from them certain tithes; for, through Jesuit influence at Madrid, their payment of royal tribute was postponed until 1549. The missions were increasing in wealth and power, independent of outside control, and contributing nothing as yet either to the king's coffers or to the Church. These were extreme privileges which excited this bishop's wrath. Upon one occasion he thought to drive them by force from their college in Asuncion, but desisted on learning that his purpose was anticipated. Meantime answers began to pour into the country to the numerous communications which at the outset of these difficulties had been forwarded to the viceroy and the Audience of Charcas. Cardenas was severely censured. The governor, too, was greatly blamed for allowing himself, the representative of his Majesty, to be outwitted and overruled by a prelate whose business it was to attend to his own spiritual affairs. Don Gregorio's confidence and courage were restored; his devotion was temporarily laid aside that he might strike an effectual blow to regain his legitimate authority.

Leaving Asuncion, attended by thirty men, he was met not far from the city by a body of Indians, whom he had been expecting. A night's march brought them to Yaguaron, and the bustle of their arrival soon awakened the peaceful town. Cardenas, startled at the disturbance, was hurriedly dressing when the governor entered his apartment. Attempting to retreat by a private door, he was quickly followed, until Don Gregorio found himself standing upon the steps leading to the high altar of the church. The excited people, soldiers and Indians, fast crowded in. Cardenas, from his place in the sanctuary, inquired of the governor the cause of his unexpected appearance. "To serve you, by order of the viceroy, with a sentence of banishment from this province, and a seizure of your goods, for having usurped the jurisdic-

tion which I hold from our sovereign lord the king," was the reply. Cardenas answered, unmoved, "I promise to obey, and take this congregation to witness my promise." Then, giving way to his pent-up animosities, he violently denounced the governor and his associates, and served them in turn with a renewed excommunication. He was forced to return to Asuncion, but there finding his power lost and his personal liberty restrained, he writes with exquisite disgust to the governor that he could not prevail upon himself to remain in a country inhabited almost entirely by an excommunicated people. Amid public displays and ringing of bells the humbled bishop took leave of the city and descended the river to Corrientes.

The old spirit of authority and mania for anathematizing accompanied him in this banishment. Bishop of Paraguay he still was and would be, but his thunders now fell comparatively harmless upon his offending children. The Jesuits haunted him; he bore them earnestly and perseveringly in mind, nursing the while a fixed resolve that at some period, sooner or later, the order should be driven from the country. He bitterly complains of them in all his letters, and his epistolary correspondence increases as his case grows desperate. To the Bishop of Tucuman he appeals in the strongest language, pleading his commiseration in a world of humble regard. The bishop's reply could not have healed many wounds or afforded much satisfaction: his sympathies were with the fathers, and he rejoiced that they had stemmed the current of Don Bernardin's wrath. He writes that his power does not consist "in splendore vestium sed morum, non ad iram sed ad omnimodam patientiam." The deposed but overbearing bishop had but little patience; his temper was superabundant; his prejudices and perseverance were unfailing, and, though repulsed in this quarter, he was more successful at La Plata and in his influence with the Audience of Charcas. From the latter he finally obtained permission to return to Asuncion under the plea of settling his much-deranged affairs. He was enthusiastically received by his friends in that city, for there was still a party in his favor, and the governor deemed it impolitic to interfere, although he could not have but foreseen that his welcomed guest might prove a dangerous enemy. Judging from his prolonged stay, the prelate's affairs must have been in a most deplorable condition. He, however, declared his disinterestedness in all public measures: spiritual, not temporal, matters engaged his thoughts. During

this visit the governor died (1649). Who shall succeed him? Surely not the prelate, on a mere visit to the city, apparently lost in the mazes of his pecuniary embarrassments. Yet it was so. The people held a clamorous meeting to decide for themselves; for with them Cardenas was popular, and, under the shadow of an ancient edict of Charles V.—a piece of parchment the bishop had been hunting for all his life—they declared this their right. Don Bernardin was proclaimed governor, bishop, captain-general —dictator, in a word.

This power was wielded with crushing effect upon the Jesuits; he held them in his grip, and they would have felt the hold "through bars of brass and triple steel." The blow came at last. Says the worthy bishop, while preaching in the cathedral, "Be firmly persuaded that I have an order from the king to drive the Jesuits out of this city."* He may have persuaded himself to this effect, but certainly not the fathers. The only consideration with him now was as to what were the most expedient and summary means for ridding Asuncion of their presence. He issued an order compelling all good citizens of the city capable of carrying arms, under pain of excommunication, to join the standard of Villejo Villasanti, lieutenant to the king, and obey his instructions. On the 10th of March, 1649, this rabble marched to the college; finding it closed they summoned its inmates to open the gates, but received no answer. Gates and doors were easily forced open and the chapel abruptly entered. Here the lieutenant made known the object of his mission. The rector stoutly replied that the college of Asuncion had been erected by permission of Philip II., that they exercised their privileges by grant of the king, and that, of their own accord, they would neither abandon the one nor relinquish the other. Villasanti, being a man of action, not of words, retorted by a signal to his men, who made a disorderly attack upon every thing that came within their reach; the fathers were driven out of the college, the sick dragged from their beds; all were hurried to the boats that awaited them on the river, and, cast adrift with few provisions, and many without oars, were exposed to the mercy of the current.

The college was ransacked and plundered throughout, the plate on the high altar stolen, and every thing of value pillaged from the chapel. Two statues, representing St. Ignatius and St. Xavier, the great missionary of Japan, after going through a sufficiently disfig-

* Charlevoix, vol. ii., p. 30.

uring process, were thus converted into St. Paul and St. Peter, remaining about as resemblant, perhaps, as the antique busts of the Roman emperors resemble their great originals. A picture of the Savior, clothed in the habit of a Jesuit, a fancy which the writers of the order excuse or account for by saying that he appeared so "to the famous Donna Maria de Escobar, whose memory is still held in veneration all over Spain" (Charlevoix), was severed at the neck so as to preserve the head, and the rest burned. Finally, after making a wreck of the interior of the building, an attempt was made to pull down the wooden steeple, but they succeeded no farther than in drawing it from its perpendicular position.

This triumph was very short-lived. Don Bernardin must answer for these high-handed measures, a consequence of which he was perfectly aware, but no one knew better than himself how to act under such circumstances. He was prompt in making his own representations to the Audience of Charcas; he wrote voluminously to that body, and so far fortified himself as to send a special envoy to Madrid; he had a voice in every assembly or deliberation which was to pass censure or approval upon his conduct; but in this instance all his endeavors were futile. He was baffled in every manœuvre; he failed in every attempt, and was summoned to Peru; while Don Sebastian de Leon was appointed to see that the summons was obeyed. That functionary approached Asuncion, followed by several thousand reduction Indians. Hearing of this expected force sent against him, Don Bernardin was rash enough to oppose it; the two forces met, but the bishop lost the day. It remained for him to yield, with the best possible grace, at a time when he thought,

> "Good, easy man, full surely
> His greatness was a ripening."

But, like the cardinal, he had ventured in a sea of glory far beyond his depth. In March, 1651, he returned to La Plata, entering his native city in triumph. There, in retirement, he passed the rest of his days, after a restless and scheming career, excused by no wholesome purposes and attended with little ultimate success.

The first step of the party now in power was to recall the Jesuits. The edicts fulminated against them by Don Bernardin were publicly burnt; the censures passed upon them were removed; their much-deranged temporal affairs were restored to a more healthy condition; the college, almost a ruin, underwent the nec-

essary repairs; the statues, pictures, vases, candelabras, and columns that had been carried off were restored; all the pillages and spoliations they had suffered were handsomely remunerated.

As one enemy disappeared another rose up against the persecuted Jesuits. At this time Spain and Portugal were still at war. King John, desperately fighting for a nation's independence and a throne, was not scrupulous as to the means to be employed, and so gave his nod of assent to the Mamelucos in a fresh attempt they were about to make to reduce the missions. At the latter part of 1651, this expedition, composed of four separate divisions, was put in motion. The Spanish authorities, now conscious that it was their best and only policy to oppose these bandits, prepared to resist them, and sent word to the reductions to assist them with whatever force they could collect. Happily the country was in a state of internal quiet, and the authority of the Jesuits such as to enable them to act promptly and decisively. Before any of the government forces from Asuncion appeared in sight of the enemy the fathers had assembled their neophytes, furnished them with fire-arms, advanced against the Paulistas, and repulsed them in every direction; then, sharply wheeling upon the Guaycurus, who had taken advantage of the occasion and thought to join in the plunder, they annihilated them at a blow.

This was neither the first nor the last occasion upon which these Guarani Indians rendered eminent services to the government. They drew even from the gold-thirsty, fortune-seeking Spaniards a tardy acknowledgment of their good and loyal conduct, and an acquiescence in whatever grants and privileges the king may have been pleased to grant them. Indeed their services were not to be despised, for they formed a strong defense along the boundary of Spanish America most open to attack. Under the strict discipline of the fathers many had conceived a fondness for and become adepts in the art of war; in all their engagements with the Paulistas since the return of the deputies they had been successful. The last repulse settled the question of superiority, and associated with the reductions quite a military prestige. At later periods these natives distinguished themselves not a little as allies of the Spanish. More than once the Portuguese, before Buenos Ayres, had reason to admire their courage and the perfect discipline under which they acted; more than once they had been worsted by them, and learned to dread them as much as they ever feared the Spanish. At Montevideo, also, in the disputes about

Nova Colonia and in many other instances, the reduction Indians rendered effectual assistance. In times of peace they never declined aid in the construction of public works. Upon the cathedral of Buenos Ayres, the citadel, and fortifications of the port they were diligently and perseveringly engaged; in other cities and towns they likewise assisted in the erection of churches and public buildings. Many forts and important military posts sprang up from their labors, under the skillful direction of the missionaries, and many flourishing towns were built by them alone. Often had they defended these from the attacks of unfriendly Indians, or from the more alarming advances of an outside enemy. Yet how small and uncharitable was the return they met with.

CHAPTER XXVIII.

Fathers placed in charge of the Missions: their Duties and Power.—Opinions and Researches of Azara.—Foundation of St. Joachim and of Belen.—Means and Measures adopted.—Jesuit Reduction.—College.—Dispensary, Gardens.—The Arsenal and Soldiery.—Sham-fights.—The Church: its Splendor.—Music.—Attendance at Church Service.—Fêtes and Processions.—Clothing.—Schools.—Police System.—Daily Life.—Labor in the Fields.—Christian Republic.—Social Equality.—Mercantile Restrictions.—God's Inheritance.

So far this brief review of incidents does not embrace what, probably, with the generality of readers, most excites an interest in the history of the Jesuit missions of South America. The disputes of governors and bishops, the dissensions of religious and laymen, the expulsion, at different times, of the order, the continuous contest with the Paulistas, yield to a different phase of the subject. A system is firmly established so marked, so peculiar in itself, and yet rising to all appearances from so natural an order of things as to claim at least some passing consideration.

What was a Jesuit reduction? In what relation did the missionary stand toward his people, and they to one another? What was their political and social organization? Following these establishments in their advance to civilization and power, we pause to note the means and causes of the ascendency which they attained. Here we meet with contradictions not easily reconciled. The only histories of the South American missions are by the Jesuits employed in them, or by Spaniards—men of their own faith, but who seem ever to have regarded the labors of the fa-

thers with distrust and enmity. Both parties present us with a picture of life, of a people, of a polity unexampled in history; and if simplicity of government conduces to the happiness of the human family, we have here a wonderful example of it.

It is of primary importance that we should impress upon ourselves the fact that this success was mainly due to the peculiar composition of the Jesuit missionary, the training which so fitted and girded him for the life here portrayed; but above all to that unity of spirit and action visible in the whole order, how diverse soever its pursuits or varied its acquirements. Priests, statesmen, astronomers, captains, artisans, every profession, every art and trade, are found represented among its members. It possessed every natural element for settling and civilizing the wildest and most distant countries. "The vast shore washed by the farthest sea" was accessible to the Jesuit. Never have men, moreover, discharged a duty or attained an end with more unflinching fortitude, or evinced a more lofty disregard of danger. It was not of uncommon occurrence that the sermon should serve the purposes of the general's proclamation, or the missionary lead from the sanctuary to the battle, where in the hottest of the fight one father might be seen binding up the hurts of the wounded, and another administering the last sacrament to the dying. In time of peace they planned towns, built churches, drew up municipal regulations, instructed in the schools, drilled the soldiers—for every able-bodied native was a soldier—and judged in all matters; though there were nominal courts and tribunals presided over by robed natives. Their authority was absolute, disputed by none, unless occasionally by some governor or bishop of Asuncion or Buenos Ayres. The master's power over the slave could not be more unquestioned than that of the father in charge of a mission.

To each reduction, in proportion to its population, were attached two or three priests. In one, the chief, was vested all spiritual control; to the other was intrusted a necessary, watchful, and diligent superintendence of its temporal concerns. At the head of all the Paraguay missions—each of which was, according to Ulloa, "like a family governed by a wise and affectionate parent"*—was a superior, who resided at Candelaria,† and had the general super-

* A Voyage to South America, by Don Antonio de Ulloa: translated by John Adams, Esq. London, 1806, vol. ii., p. 182.

† Founded 1627. Latitude 27° 26′ 46″, longitude 58° 7′ 34″ west of Paris. Tableau des Peuplades formées par les Jesuites. Azara, vol. ii., p. 260.

vision of the Christian republic. He also exercised the power of appointing the assistant Jesuits, under whom there were many subordinate offices filled by the natives.

There are minor cogs and wheels to this machinery, and the unison of all its parts is due to causes, circumstances, and appliances worthy of note. Its perfect adaptation to the native population must have arisen from wise and artful measures—a very possible and very Jesuitic combination. So firm a footing in so vast a country is not to be traced to weak brains or distrustful instruments. Many and different means tended to the accomplishment of the one great work. Azara discusses the subject with animosity against the fathers, much of which, though evidently unjust and proceeding from a fixed prejudice, yet does not permit us to totally disregard his opinions and observations. He is slow to make any acknowledgment in favor of the missionaries; he mercilessly pursues and investigates all their labors, how deserving soever they may be apparently, and would attribute the foundation of the reductions more to the fears inspired by the Portuguese of St. Paul than to any persuasive powers of the fathers themselves, or any merit in their system.

True it is, the establishment of the Paraguay missions took place partly at times when the Paulistas were devastating the country, and we can readily infer that, exposed to this pursuit, the Indians were rejoiced to find the shelter which the fathers afforded them. This undoubtedly increased to an extent the population of the reductions, but does not account for that strange influence which Jesuit teachings seemed to bear with them upon the Indian's untutored mind. Fear of the Mamulucos did not lay the foundations of the early missions of Guayra, nor is any such agency to be found in the rise of those of Chiquitos and Moxos. At the same time there can be little doubt that numbers of the Guarani race, persecuted on the one side by the Spanish and on the other by the less clement Paulistas, clung to the Jesuits as an all-protecting safeguard and refuge. They might have retreated for a time to the inmost depths of their forests, and there sought the peace which had been so ruthlessly disturbed; but even those wilds could not have afforded them the security they eventually enjoyed in open day under the fathers. The Jesuits from the first became their champions; and we must believe that their possession of and continuance in this power was due as much to the self-sacrificing spirit of the order as to intrigue or accidental cir-

cumstances, though doubtless there were arts and policies best known to the fathers that served the one end. We may or we may not see dimly into these, for their writers have been accused of being suspiciously silent as to the means employed in the establishment of these reductions; but there may have been nothing to disclose, there may be nothing now to drag out into the light.

The missions rise throughout the country, increasing in wealth and population and possessed of no ordinary civilization; yet it is difficult to follow them through all the phases of this progress. We know that the efforts of the founders were crowned with success, but the inner work of the fabric has been dimmed by time, if not lost; or is presented to us only through the exaggerations or prejudices of Jesuits or Spaniards. The father finds his way to some distant unknown tribe, unattended and unarmed. He throws himself completely on their mercy; but his mission is one of peace; he is a chosen successor of the great apostle, and soon inspires a mysterious reverence for his person. There is something fearless and imposing in his speech that does not fall harshly upon the Indian's ear. Christian life and religion he depicts with a marvelous eloquence that touches the heart of the savage. Nor does he forget that it is well to be wary; he is mindful of temporal advantages, and avails himself of a knowledge of savage instincts. His promises are profuse; he is willing to accord much, and only asks in return obedience to the cross. So were the old Loreto and the new Loreto founded; San Ignatius, San Xavier, and St. Thomas sprung into existence, and were soon numbered among thirty prosperous reductions. They are populous, powerful, and civilized. Their future history is well defined; the early stages only are obscure.

We have referred to Azara, whose information of these missions was obtained while in the country itself, and associating with men whose recollections of the Jesuit rule were still fresh in their memories. He relates as follows of the founding of St. Joachim:

Wishing to establish a mission among this branch of the Guarani family, the fathers first sent them, by Indians of their own reductions, offerings of some trifling value, pleasing to Indian fancy. This preliminary treating was repeated several times before taking more decisive steps. These gifts, they were told, came from a Jesuit who loved them much and was desirous of

living among them; that, if so permitted, the father would bestow upon them things of far greater price, that they might live without labor. He would bring them cattle, iron, and every useful article; he would build them houses, give them clothing, attend to the sick, and extend to the whole people every care. Such conditions were tempting; they flattered too much the natural indolence of the Guarani to be disregarded. Thus a way was opened to some apparently good and generous Jesuit, who, attended by a number of Christian natives, started on this expedition, bearing presents, and driving before them cattle for the use of the expected converts. Arrived in the midst of his newly-adopted children, the plans for a town were laid, the fathers at the same time keeping a vigilant watch over the cattle. They soon disappeared, however, as the Indians thought of nothing but eating.* Provisions must needs be abundant, for to satisfy the palate was indispensable in view of successfully administering a healthful spiritual food. He who was fed the best was generally the most speedily converted to the true faith, and made the best Christian—at least in the way of telling beads and in submitting to Jesuit authority. He who was neglected in this respect preferred aboriginal independence, and subsistence obtained by his bow and arrows. Hence the flocks and fields required the same constant watchfulness as those of the Church. Says Dobrizhoffer, quaintly: "If, according to St. Paul, among other natives faith enters by the ear, with the savages of Paraguay it can only be thrust in by the mouth."

St. Joachim grew and prospered; numerous houses were built, and soon a church faced the great square. An abundance of corn and cotton followed a general and diligent cultivation of the land. The Indians were elated with the change beyond all expectation; they were for the present in the enjoyment of an easy, indolent kind of life, as unlooked for as it was novel. But it was never understood that the treasury should be drained by too long a continuation of this course. The necessary advances had already been made; it was now time to halt, that the Indians might be impressed with the necessity of working for themselves. Azara again explains: "Assembling them one day the father appealed to their sense of right; it was neither just nor proper that their friends and brothers, the Guarani, brought from other reductions, should continue to labor for them; they should begin to assist themselves;

* Azara, vol. ii., p. 228.

there was much need of cultivation in the fields; some simple trade could be easily acquired, and the women could learn to spin cotton." They were probably at the same time impressed with the fact that all these were most agreeable and Christian-like occupations, such as were commanded by the Church. The converted Indians were instructed to make similar entreaties. Some returned to their wilds, many yielded, and from that time St. Joachim became one of the most important of the missions.

These gentle measures, though comporting with the docile Guarani character, proved impotent in other quarters, where fiercer dispositions had to be encountered; and hence led to more stringent measures for the success of the proposed reduction. The foundation of Belen,* in all but the preliminaries, is a different story from that of St. Joachim. The gifts were sent, and the Jesuit, numerously attended, arrived at his destination among the Mbayas—a warlike race who discovered no charms in the mission "community" life. The father's eloquence neither moved their hearts, nor did his material offerings affect their senses. The chase, as a means of subsistence, was preferable to agricultural labor. The caciques, moreover, declined assigning to others the power they exercised over their respective districts—a power, it is well known, which the Jesuits were never willing to share. So the father's schemes must have been thwarted but for a well-timed stratagem, which seemed at once to remove all difficulties. There was every facility for carrying it into effect. Under the plea of concluding a treaty with the Chiquitos, among whom there were at this time numerous missions, the fierce chiefs opposed to the cause of the Church were enticed beyond the confines of their territories. The most cordial reception awaited them on the part of the reduction Indians. Numbers of friendly allies flocked to greet them; bands of music were in continuous attendance, and every kind of native amusement or festivity was called into requisition, that the welcome might admit of no distrust. Thus the snares were well laid. The unsuspecting chiefs manifested unbounded gratification, while the secret plans of the Jesuits for securing their persons were being brought to maturity. Suddenly, in the night, and at the sound of a bell, their universal signal, the Mbaya caciques were attacked, bound hand and foot, thrown into prison, and not released until the final expulsion of the order. But,

* Founded in 1760.

though the chief obstacles were thus removed, Belen never rose to the full dignity of a mission.*

These are the two examples cited by Azara, and thus, according to him, were the Paraguay reductions established. It is not generally understood, however, that coercion was ever employed in the great work of conversion; at least we have no evidence of it, nor any declaration to that effect except from our previously-mentioned author, who may have been too happily confident in the success of his researches; or he may have confounded the inhuman occurrences among the *lay* reductions with those of the fathers. If not governed by principle, the sagacity of the Jesuit discovered that, with the Indian, persuasion effected more than force; the Spaniard never essayed the former and ever abused the latter. It was of necessity a duty and an object with the fathers to overcome prejudices, to dispel distrust, to soothe all latent fears by constant assurances of kindly feelings and by manifesting a paternal watchfulness over all affairs that came under their direction. In Christian charity they did not offer a stone for bread, nor a serpent for a fish, but opened to those who knocked, and extended hospitality to all who entered. Unlike the Spanish adventurers their goal was not hastily-acquired wealth; their declared ambition was to serve God and the order; an assertion reversed by their enemies, who say the order was first considered, and then God. They had neither impracticable schemes nor dazzling projects, and so seldom failed in the more rational aims they proposed to further.

A Jesuit reduction was a model of order and regularity; perfect uniformity was observed in its long, comfortably-built rows of houses, and the small circuit of the town offered every facility for preserving its domestic tranquillity, or insuring a ready defense against any outside danger. The great square was the centre point, the public resort and general rendezvous of the people; upon it were erected the church, the college, the arsenal, the stores, the workshops of carpenters, joiners, weavers, and smiths, together with other important public buildings, all assembled under the close and unsleeping vigilance of the fathers.† The missions of Moxos among other things were noted for their hospitals

* Azara, vol. ii., p. 230–1–2. This information was obtained by Azara from the caciques referred to, who were still living at the time of his stay in South America. Dobrizhoffer, however, relates nothing of the kind. Vide vol. i., p. 97–98.

† Charlevoix, vol. i., p. 269.

and medicines; those of Paraguay enjoyed this advantage only partially,* but they needed them less. Moxos is a marshy, feverish, sickly country, while the climate of Missiones is highly salubrious. At Concepcion, however, was established a very extensive dispensary. The gardens attached to the colleges were cultivated with every care, and may still be traced in neglected yerba groves, or some struggling growth of fruit and flowers.

The church and arsenal were generally placed at opposite extremities of the square. The military dépôt of the mission became a point of considerable importance after De Montoya's return from Madrid, though the provisions of the grant were strictly enforced, and no such dangerous weapon as a fire-arm was ever intrusted to the entire keeping of a Guarani. Arms were distributed only at stated times, and returned when the occasion for their use had passed; but this caution did not prevent a frequent and regular drill, or even constant practice at shooting. Each reduction had its body of cavalry and infantry and military insignia. The foot-soldiers were variously armed with the marcana, the bow and arrow, the sling, sword, and musket; the horsemen with the sabre, lance, and carbine. In the use of the sling and lance these Indians, as all the Indians of La Plata, were most skillful; prizes were frequently awarded to the successful competitor in trials with native weapons or fire-arms. The great square was the Campus Martius for all such exercises, and there every Monday the corregidor reviewed his troops, the officers being distinguished by their uniforms, richly laced with gold and silver, and embroidered with the device of the town.† These weekly evolutions terminated usually with a sham-fight. Equal parties were formed and stationed at opposite extremities of the square. A flag of truce was first forwarded, to prevent, if possible, the coming disastrous struggle, but, being treated with contempt, signal to battle was given, and the combatants rushed to the midway shock. Always enthusiastic, and even impetuous upon such occasions, the fight often waxed so warm as to render necessary a forcible separation. This was never difficult, for the fathers had carefully soothed and quelled all domestic or tribal dissension. It was thus that they acquired that experience and discipline which finally enabled them to compete successfully with the bandits of St. Paul; it was this constant training that made their co-operation so effectual at Buenos Ayres, Montevideo, and

* Charlevoix, vol. i., p. 272.

† Ulloa, vol. ii., p. 177.

other places. And there was another element in this military schooling, in that they were taught to turn in the same cheerful obedient spirit from a long and doubtful struggle to the peaceful cultivation of their fields, or again to leave the plow and grasp the sword in defense of the missions—a cause as sacred in their eyes as the rescue of the Holy Sepulchre from the infidel to the crusader.

The mission church, a building of considerable and often vast proportions, was constructed with an eye to symmetry, taste, and splendor, and was in no respect inferior to those of the Spanish cities. Its decorations rivaled the "richest of Peru." No expenditure, no time or labor was too great to be devoted to this sacred edifice; vast amounts were lavished upon it, and artists and artisans continually engaged to add to its magnificence. The surplus funds that remained in the mission coffers were consecrated to the high altar, which shone with gold and silver vessels richly and elaborately chased; frescoes and paintings, busts and statues, illustrative of scripture history or the lives of the saints, covered the walls and ceiling, lined the aisles, or were grouped around the altars; but, above all, their wood-work was brought to a perfection which may still be traced in the missions of Santa Rosa, Santiago, and others. All bespoke a wealth and civilization unsurpassed in Spanish America.

The pomp and display of the Romish Church were brought to bear upon the simple minds here instructed and developed. The gorgeous ceremonies of high mass perhaps drew numbers within the pale of Christianity under circumstances that might have rendered of no avail the exhortations of a St. Bernardin. If there was no choir of stout, sonorous-voiced monks, there was one of neophytes, who chanted with feeling and perfect intonation the anthems of the Church. This important addition to the sacred service was never neglected. The Guarani had a fine musical organization—an ear delicately sensitive to sound. He displayed grace and power in the use of the voice, and was taught to perform with facility upon various instruments of modern invention, but of his own manufacture. The Jesuit found in him a natural, instinctive love of the art, which needed but the cultivation he was able to impart, and each town, in the course of time, had its bands and its choirs, and every habitable spot resounded the day long with their music. Charlevoix thus quaintly alludes to the power of song over the Guarani: "The

Jesuits having observed, in their journeys by water, that as soon as, to recreate themselves in an innocent and holy manner, they began to sing any spiritual canticle, crowds of Indians flocked to the banks, and seemed to take a particular liking to their music: they improved the opportunity to explain to them the subject of their songs, when, as if the melody had changed their hearts, and rendered them susceptible of the sentiments with which they longed to inspire them, they easily prevailed upon the poor creatures to follow, and gradually insinuated into their hearts the most elevated sentiments of religion, thus realizing in these savage countries what fable relates of Amphion and Orpheus." We know not whether the analogy will hold good, but it is certain that music was a powerful instrument in the work of the missions.

The attendance at church service was exactingly regular. On such occasions the men and women never mingled together. A line of separation was drawn down the middle aisle, and the two sexes respectively occupied the thus divided sections. Their attention to the service, their pious observance of all religious duties and the minor formalities of prayer, have elicited the praise of most writers of that and subsequent periods. But Azara, always ready to criticise the aims and labors of the fathers, attributes it to a grave, quiet, and peaceful disposition. The first evidences of coming day found the children of the reduction assembled for morning prayer, when they chanted until the "rejoicing in the east" signaled the whole town to be present at early mass. Baptisms took place in the afternoon; vespers and the evening prayer completed the duties of the day, when each one retired to his house. Marriages were celebrated only on festive days.

Fond of music and the dance, given to martial display, gay and lively in disposition, as were the Guarani, it is not astonishing that the fêtes of the Church should have been events in the Paraguay reductions, celebrated by long and dazzling processions, and by the rejoicings of the whole people. That of the sacrament appears to have eclipsed all others. The zoology and the botany of these fruitful regions of creation were represented on such occasions. The matting which covered the way was strewn with evergreens; arches were erected at short distances apart, not decked with banners and devices, but green branches; tropical plants and superb flowers enriched the atmosphere with their fragrance; attached to these were birds of every kind and color, with sufficient scope allowed them to fly free in the air. "Nature

appeared, if I may so speak," says Charlevoix, by way of a résumé, "all life and soul upon the occasion." To render the pageant more imposing, they assembled wild beasts from the forests and fishes from the neighboring rivers. Lions* and tigers were chained at different points, and huge vases of piscatory specimens added to the general enlivenment. The public buildings and houses of the town were hung with tapestry—in the embroidering of which the women excelled—covered with wreaths and flowers, the most superb of any in the world.

The musicians, dancers, and choir-boys led the procession; the priest followed, wafer in hand, covered by a canopy carried by the cacique and corregidors, resplendent in the costly apparel worn during these festive displays. Behind the sacrament was borne the royal standard, and the military, all brilliantly caparisoned, brought up the rear. In this order they paraded through the mission, and after mass partook of a public banquet. Ulloa, one of the best authorities in this connection, and frequently quoted by Charlevoix, says: "In short, these neophytes omit no circumstance either of festivity or devotion practiced in the most opulent cities of old Spain."

The chief article of clothing was cotton, for the genial climate of Paraguay rendered necessary no heavy vesture. Short breeches and shirts were made for the men, loose gowns for the women, and with the latter a cotton cap was not uncommon as a covering for the head.

Much attention was paid to the schools. Early training was very properly regarded as the key to all future success. That the Spanish language should never have been taught is considered by many a sufficient evidence that the Jesuits were not looking dimly into the future. Excuses were not unfrequently offered for this omission in their course of instruction by the fathers. They pleaded the simplicity of the Guarani's mind, the impossibility of his ever acquiring a language possessed of such difficulties, although they succeeded in making the Latin of the Church very familiar to him. If the establishment of a hierocracy were contemplated, it is but another evidence of Jesuit sagacity; for isolation is always essential to success, and ignorance of the Spanish tongue was the most formidable obstacle that could be placed between the Indian and the Spaniard.

* It would seem needless to remark that the so-called lion of South America is an altogether different animal from the African.

Finally there grew into existence among the missions an institution for which there was never any actual necessity, and which foreshadowed further evil consequences. It was the police. It first consisted merely of a nightly watch for the purpose of preventing dissensions or wanderings from the reductions; but it was enlarged to a passport system, stringent in all its acts and hostile to the stranger. The Jesuit writers speak in high terms of this police. It may have tended to preserve the order and discipline for which the missions were noted; but it was one of the causes that precipitated them to their final ruin.

Daily life among the Guarani was one of military order and regularity. Alfred divided the day into three equal parts, assigning to each the duties which were to engage his mind; but here we have a whole population, extending over a vast tract of country, subjected to restrictions and regulations timed like the rising and setting of the sun. To the most insignificant occupation was attached a stated time. There were hours marked for laboring in the field, for working in town, for retiring at night, for rising in the morning, and they were most rigidly enforced. The reduction moved and had its being, as it were, with the precision of clock-work. The people prayed, toiled, ate, and slept so long and no longer; from one duty or employment they passed to another like soldiers changing guard, equally participating in the charges of the day, each one undergoing his measure of fatigue for the one and common family. In going to the fields natural indolence was no excuse for straggling parties or lounging assemblages; a life of military discipline did not permit of habits which their otherwise monotonous existence might have probably brought about. The moral rigor of the Jesuit was by every possible means infused into the bodily members of the Guarani. Formed in marching order on the great square, enlivened by music, and bearing a favorite statuette in lieu of a banner, they proceeded to the working-ground. There arrived, the first care was to erect an arbor for the patron figure, a tasteful covering of leaves and flowers; then to each man was assigned by the *capitan* his duty for the day. The return was equally lively, and executed in the same orderly manner.

These missions have been spoken of as forming what was termed a "Christian Republic." The republicanism seems to have had no other existence than in the institution of social equality among the natives, that the power of the actual rulers might be the more

absolute. Some Indians were necessarily endowed with titles and nominal powers, and were distinguished by carrying silver apple-headed canes as symbolic thereof; but they were the mere executors of Jesuit will. Azara, on the one hand, offers his objections to this polity, because he attributes to it on the part of the native a general inert state of mind and body, and regards it as having offered no incentives to excellence in any art; while Charlevoix, with other fathers, found in it all the admirable principles and results which might exist in and proceed from a political formation of that nominal and actual character. Not that there was in reality any such political formation, but that the fathers would most felicitously overlook every consideration urged against the unquestioned rule vested in themselves, and present it to the world as in no wise interfering with the so-called republicanism of the reductions. The Indian, thus subjected to the moral influence as well as to the forcible control of the Jesuit, may have attained a higher degree of civilization than would have been possible under a less restraining government; but, at the same time, this system, so skillfully grafted in the native's mind, after a few generations of time brought his race to that childish dependency which the missionaries, when in danger of being driven from their old and proper field, argued as unfitting it for actual sustenance under self-government. In every relation of life the Guarani felt the finger of the Jesuit father resting upon him, or acted unconsciously under its guiding influence. There was no sensible burden, however, to awaken a disaffection, and amusements or festive displays added to the general contentment. If conscious that there were chains gently riveted upon him, the native laughed and danced off the sense of enslavement. The fathers were always politic; if their government was absolute and unquestioned, it was administered in a paternal spirit and faced with a semblance of liberty. They accorded to the natives two or three days of the week to be devoted to their private interest or advantage. There was very little actual profit to be derived from this apparent generosity, for it was never the intention of the fathers in granting these opportunities for free labor, that the Indians should become free merchants and trade according to their interest or pleasure. They could sell all their produce to the Church, but very strict prohibition prevented it ever passing the confines of the missions, except under instructions from a Jesuit superior. The fathers' reasons for this regulation

are specious or just, as we may be inclined to consider all acts of this character.

This contact with an outer world could not but have recoiled with a ruinous effect upon the reductions. Spanish corruption—a term of strong meaning—would creep in among a virtuous, spotless people. Spanish avarice and deceit were bugbears ever to be dreaded in a Christian republic of this character, where no Indian could lay claim to this or that object, for every spot was common neutral ground, and what natural obstructions or climatic influences did not permit them to till, was called God's inheritance. "Mine and thine" were unknown words; they were cautiously avoided upon all occasions. Men worked for the community, and every thing belonged to the community or its embodiment, the Jesuits—a difference regarded as immaterial. The Indian labored for his spiritual guardian and looked to him for a material return.

CHAPTER XXIX.

Tarija Missions.—Failures.—Confided to Franciscan Friars.—Spanish Settlement in the Province of Chiquitos.—Foundation and Removal of Santa Cruz Missions.—First Establishment by Father Arcé.—Successive Reductions.—Native Officials.—Jesuit System.—Abipones.—Concepcion and the Rosary.—Dobrizhoffer.—Voyage along the Coast of Patagonia.—Patagonia Missions.—Revolt of Indians.—Cangapol.

A JESUIT convent was erected at Tarija in 1574, the year of the foundation of the city. The Chiriguanos—a fierce, warlike tribe that had resisted the arms of Incas and Spaniards—occupied this region of country. Although their welfare was pronounced to be the all-absorbing object of the fathers, the mere announcement of disinterested motives was found insufficient to bend the children of the land to this nominally spiritual rule. Caciques who, in their native strength, recognized no earthly superior, scorned submission to men in long black frocks and of meek demeanor. On the other hand difficulties were promptly met and, to a certain extent, removed. A Jesuit missionary never quailed before the perils of duty or the hazards, how imminent soever, of his vocation—a sublime indifference to danger associated him with the wildest and most ferocious tribes on the continent.

At a very early period after the foundation of Tarija, an at-

tempt was made to establish a mission on a small branch of the Rio Grande and upon the present site of Piray. Its existence was but brief. The natives were not made up of sufficiently credulous elements to place a necessary confidence in the alleged purposes of the fathers. These they drove out. They burned the church, pulled down the cross, and threw the image of St. Rosa, their patron saint, into a neighboring lake. Potrero—such was its name—remained a heap of ruins until 1768, when the mission was built anew, and intrusted to the only remaining religious in the country, the Franciscan friars. It was then called Mission de Nuestra Señora de la Asuncion del Piray, which for brevity sake is known at present as Piray. Not far from this town, and on the Rio Grande, the Jesuits also founded at an early period the Santissima Trinidad de Abapo, but again they were constrained to seek safety in flight. Abapo, restored shortly after the expulsion of the order, still stands.

In 1690 Father Arcé, a zealous and indefatigable missionary, extended his labors into the valley of Salinas, east of Tarija. His efforts were at first partially successful. But neither the Mataguayos nor the Chiriguanos could be induced to submit to the quiet and repose of a more civilized and hence a more stationary life. The fathers faced every obstacle and incurred every risk that the lost sheep might be found, and then had the mortification of seeing them dispersed as fast as they were collected together. Houses and churches were built, but the natives poured in and out like the water through the bottomless barrel; until, wearied of the untiring perseverance of the missionaries, the Chiquiacas and Tariqueas resolved to rid themselves of their presence in summary style. For this purpose they rose up in revolt, burned the missions, and massacred several of the fathers, threatening the rest with destruction if intrusion were again made into their territory. Frequent warlike demonstrations of this character gave an offensive and defensive aspect to the whole country, to all its little towns, hamlets, and missions. The Tarija reduction resembled an outpost or frontier fort—a safe retreat for foraging parties rather than a home for converted natives. Indeed, repeated and murderous assaults from outside Indians had rendered necessary the erection of strong fortifications and numerous guards to defend them.

But the Tarija missions, properly speaking, do not belong to the Jesuit period. The numerous reductions founded in that

province date from a time subsequent to the expulsion of the order and were confided to Franciscan friars. They are inclosed in the annexed table as they were in 1799, with their respective positions in latitude, population, and number of head of cattle. The authority is Fra Antonio Tomajuncosa.

	Name of Mission.	Tribe.	Latitude.	Population in 1799.	Number of Head of Cattle.
1	Piray	Chiriguanos.....	18° 40′	1,630	1,293
2	Florida	"	18 42	493	1,195
3	Cabezas	"	18 58	1,440	2,784
4	Abapo	"	19 —	1,648	2,000
5	Mazavi	"	19 24	1,384	387
6	Ignuri	"	19 26	550	216
7	Tacuru	"	19 28	313	273
8	Zaypuru	"	19 31	877	609
9	Tapuita	"	19 36	553	593
10	Tacuarembo.....	"	19 38	1,431	160
11	Boracupiti	"	19 39	719	354
12	Piriti.....	"	19 42	798	312
13	Ubay.....	"	19 45	874	487
14	Parabiti	"	19 58	756	666
15	Tayarenda	"	19 20	362	562
16	Iti	Chaneses.....	19 22	1,014	843
17	La Tapera	Chiriguanos.....	19 28	67	435
18	Azero	Chaneses.....	19 16	485	1,835
19	Salinas	Chiriguanos and Mataguayos...	21 37	375	4,727
20	Itan	Chiriguanos.....	21 18	387	916
21	Centa	Mataguayos et Vejoses.....	23 15	520	2,566
				16,576	23,183

From Tarija we pass to Chiquitos.

Before giving particular and immediate attention to the missions established in this latter province, it might not be relaxing too much the thread of our narrative to glance at the first early attempts at Spanish settlement among the natives of that country. But eleven years after Solis had steered his ship into the broad estuary of La Plata, instead of the waters of the Indies, and in the same year that Cabot sailed from Spain for a similar Dorado destination, Alexis Garcia, who had been expedited from St. Vincent —on the coast of Brazil—to explore the interior of Paraguay adjoining the territory of the Portuguese countship, conceived the bold project of reaching the Andes and the golden land of Peru across the wilds of the Gran Chaco. A perfect familiarity with the Guarani language gave him every advantage in its execution. But the few Spanish explorers who had accompanied him thus far were too feeble an escort for this perilous journey; so he addressed himself for assistance to the natives with whom he had of late been brought into contact. He spoke of the wealth of this

distant land, of the conquests he was about to achieve, and of the share of plunder that would fall to their lot. Two thousand Indians gathered around him to enlist in the enterprise and acknowledge him their leader.* Re-enforced by this band of numerous and apparently eager followers, the adventurous Portuguese pushed forward with the usual reckless daring of the early conquistadores. In dim perspective, down a long vista of savage dangers, a golden prospect drew him on.

What his exact course was it would be difficult to say. He probably reached the Paraguay above Asuncion, descending in so doing, it is said, a river called Paray,† and then, entering the Chaco, he passed in a northwesterly direction through the southern portion of Chiquitos, fighting his way through hordes of savages, until he finally hailed the lofty mountains of present Bolivia or the ancient district of Charcas. Garcia, pursuing the policy of the Conquistadores, robbed and plundered in the name of the authority under which he acted. He ravaged the whole frontier of Alto Peru, baffled the force the Inca (probably Atahuallpa‡) had sent against him, and when heavily laden with booty retraced his steps to the Paraguay. Here he dispatched back to St. Vincent two of his three Portuguese companions to give an account of all that had transpired in his remarkable journey. Soon after their departure he was treacherously murdered by the Indians who had accompanied him.§

He perished, as did the unfortunate Solis, by an inglorious death, and when on the eve of reaping the laurels he had so dauntlessly won. He had made no maritime discovery to rival, in the annals of Spanish America, those of the chivalrous Balboa, or that "good old man" Sebastian Cabot, and their historical associates. But he accomplished an inland journey which must be looked upon as a bold and adventurous feat even in the age of daring to which it belongs. Pizarro was lingering on the little island of Gallo, when Garcia, almost alone with his Indian escort, first came in view of the lofty ridges and snow-clad peaks of Alto Peru; and when the conqueror of Peru landed at Tumbez, in the Bay of Guayaquil, this Portuguese hero had met with an untimely death, or we should probably have seen his name and deeds

* Argentina, book i., chap. v., by Ruidiaz de Guzman, conquistador el año de 1612.

† Argentina, book i., chap. v., p. 24.

‡ It is impossible to say at what period of 1526 Huascar Capue divided his kingdom between the two Inca brothers.

§ Argentina, book i., chap. v.

enrolled on the brightest pages of the Conquest. These lesser lights have grown dim since Prescott wrote of Mexico and Peru, but should not be permitted to pass away from us. If we miss in the Plata conquest that advanced civilization among the aborigines which the great Inca roads will record to all time, the tale is replete with early adventure and thrilling withal. It enters but meagrely into our subject.

In 1537, as we have seen, Juan d'Ayolas ascended the Paraguay, in search of some brilliant conquest, to latitude 21°. Here leaving his ships with Yrala, he marched for the country of the Incas, the golden land. Like Garcia, he reached his proposed destination, and returned, elated with his triumph and enriched with spoils, to perish at the hands of Payaguas Indians.* Such was the fate of the two early adventurers who crossed into Bolivia; tragic incidents which conveyed in themselves, however, no discouragement to the hardy explorers of the day.

It was five years later that Nuñez Cabeza de Vaca placed Yrala in charge of an expedition to extend into Peru across Chiquitos. His lieutenant failed to reach the difficult goal. Nuñez himself, making a similar effort in the following year, met with no better success. Yrala, again, after being appointed to the governorship of Asuncion, renewed his heretofore futile attempts to unite the eastern and western districts of the king's large domain. The new governor, with qualities which stamped him for that age and field of life, was so far successful upon this occasion as to reach the frontier of the Chuquisaca province. Thence he sent Nuflo de Chaves to wait upon the viceroy; but, on account of a rising discontent among his soldiers, he was forced to return before hearing from his lieutenant. Eventually Chaves proved to be the fortunate conquistador who was to first couple his name with the establishment of a colony, intermediate between the already conquered territories of Paraguay and Peru.

On his return to Asuncion this officer again embarked with two hundred Spaniards and several thousand Indians, with instructions from Yrala to ascend the Paraguay and found a city near its supposed head waters on the lake of Xarayes. This considerable command awakened ambitious motives in the breast of Chaves; for what might not such a force accomplish in the beautiful and fertile country of Chiquitos? The death of Yrala, which happened shortly after his departure, confirmed him in his de-

* Argentina, book i., chap. xiii.

signs. But while on this high road to fame, indulging in flattering expectations, and building already in air the castles of his new territory, he is suddenly accosted by a party from Peru, headed by Andes Manso, not unlike his own in numbers and appearance, and apparently pursuing similar objects. Mutual salutations could not dispel the differences that might arise from this contact, and as the coffers of neither one were sufficiently replenished to buy off the other, the expanded and expanding views of the two commanders brought them to the very broad conclusion that the vast interior of the South American continent was not of sufficient dimensions to contain them both. They consequently referred the matter to the Marquis de Camette, Viceroy of Peru. Chaves here had the advantage, for the viceroy was a connection, and had always entertained, we are told, an affection for him, though from reputation alone, as they had never met. Upon him he conferred the territory of Chiquitos and a grant for the foundation of a city, much to the discomfiture of the less fortunate Manso. Hence, in 1560, were laid the foundations of the old city of Santa Cruz de la Sierra. Chaves' government was wise and peaceful, but short-lived. He was assassinated by his native subjects.

The site of Santa Cruz was for many reasons pronounced objectionable. Situated in the heart of a densely-populated Indian country, grave impediments presented themselves for a free intercourse either with Paraguay or Peru. Moreover, it lay at too great a distance from Bolivia. Communication with Asuncion was not so important as with Tarija, Tucuman, Cordova, and other westerly cities, so that in 1592 the city was removed several hundred miles westward, to where it now stands. At this distance of time, with all the implements of modern civilization at command, we can perceive that Chaves' position was the more judicious of the two; for did the population of the Santa Cruz department centre at present on the waters of the Paraguay, it is probable that the vast resources of that interior country, rich in natural products and mineral wealth, would have been developed to a very great extent. We should not need be told that a broad and navigable stream runs its course of nine hundred miles through as fertile a country as ever the sun shone upon, and yet undisturbed for the uses of man. This city of Chaves would have been the great mart of the interior of South America, connecting with the tributaries of the Amazon and the cities of Bolivia; not a mere

point of distribution for the daily wants of a slowly-growing isolated population, but the head and fountain of a commercial activity, which even Spanish indolence could not have restrained. We shall see what was accomplished on a smaller scale by the Jesuit missions, following, from necessity, the direction of the removed city; and, judging from their success, we can conjecture what would have been at the present time the old Santa Cruz, with an easy outlet to the products which must have poured into its lap.

A year before this change in the locality of Santa Cruz the Jesuits entered the country. The governor had written entreatingly to Tarija, requesting the unfailing services of the order in the long-neglected spiritual instruction of the natives throughout his province. This led to the appointment of Father Arcé, whose long experience well qualified him for the calling he so eagerly embraced as missionary among the Chiquitos. His arrival was viewed with suspicion; no enthusiasm from the people, who had an innate distrust of and dislike for the Jesuit, inaugurated his good work. The slave-traffic generally ceased its existence wherever a father made his appearance; and though a mother and her child could at that time have been bartered for a sheep and lamb,* even this was a sufficient consideration with the many dependent upon the traffic to insist upon its continuation. Father Arcé, however, without farther exordium than to secure his own personal safety as best he could, entered heart and hand upon his newly-assigned duties. We can imagine the difficulties and dangers that beset this father, and, at the same time, his perfect disregard of them; for, schooled in the failures and reverses of the Tarija missions, his composure was not now to be disturbed nor his courage to fail.

The Chiquitos Indians were a comparatively intelligent and independent race. The more peaceful and stationary habits of the Guarani were unknown to them, so that the fathers did not meet with the same pliant submission to the rule proposed to be established over them. They had warlike instincts, were brave, and excelled in all manly exercises. "A young man found it a hard task to get a wife until he had given proofs of his courage, or skill in hunting."† Long-established religious rites and settled superstitions were found existing among them. They neither feared nor worshiped a Supreme Deity, but lived in great dread of dev-

* Charlevoix, vol. ii., p. 103.

† Id., vol. ii., p. 97.

ils. They believed in the immortality of the soul or the body, and interred provisions with the dead, together with arms to supply themselves when these should have been consumed. They called the moon their mother. On occasion of an eclipse they imagined her to be bitten by dogs, and would arm themselves with bows and arrows, shooting into the air until the satellite resumed its wonted brightness. Thunder and lightning were to them occasioned by quarrelings among the departed of the tribe and the heavenly bodies, among which they were supposed to take up their final abode. They took omens from the howls of wild beasts and chattering of parrots.*

Here was an open field for the missionary; these mists Father Arcé was called upon to dispel. Astronomy, among her sister sciences, has always been awarded the preference by the Jesuits—*Cœli enarrant gloriam Dei.* It has enabled them in their peculiar vocation to associate in a more religious spirit things visible with the invisible, what we see by day or by night in the firmament with what may lie beyond. And we can picture to ourselves this father engaged with unusual zeal in removing the superstitions that had clustered around the darkened souls of the tribe, and explaining to them in simple language the wondrous mechanism of the heavens, tracing the whole to a mighty spiritual power, in whom he would have them believe and put their trust.

The first fruit of his labors was the establishment of San Xavier, in 1691. Yet scarce had this much been accomplished when the Mamelucos of St. Paul, the Bedouins of South America, were announced as pursuing the direction of his people. Defeated in Paraguay and on the Uruguay, they had extended their atrocities even to the distant territory of Chiquitos, and already depopulated, at one fell swoop, whole villages, men, women, and children. The energetic measures of Father Arcé soon put an end to these incursions. As the Chiquitos lived mostly apart in families or squads, a want of unity had at first given great advantage to the enemy, who leisurely overawed and captured the small parties that fell in their way. But, well trained in martial exercises, the natives presented a formidable appearance when banded together into one force and led on to the fight by their missionary. A few Spaniards also tendered them some assistance. The Mamelucos were defeated, driven across the Paraguay, and never appeared on its western banks again.

* Charlevoix, vol. ii., p. 98–9. D'Orbigny, vol. iii., p. 32–3.

From this time until the period of their expulsion the Jesuits were supreme in power in this province. Many other missions followed that of San Xavier. In 1696 San Raphael was built; in 1706 San José and San Juan; in 1707 Concepcion and San Ignacio. The foundations of Santiago were not laid until the year 1740, nor those of Santa Corazon until 1751. Santa Anna and San Miguel were founded at an earlier period.* These were the most important of the Chiquitos Missions. They were not unsettled masses of people attracted by beads and trinkets to listen to the declamation of a missionary, but well-organized communities, possessing every element of civilization and all the features of an orderly government. They offered, moreover, very peculiar advantages for a perfect development of this Jesuit system, and, consequently, to arrive at its actual and reliable results, to balance its faults against its virtues, we are led to give them the preference over all others in our research. They occupied an isolated position, one which made them independent of Spanish manufactories and of Spanish products, as it freed them from the suspicions, jealousies, and animosities of governors and bishops. After the chastisement of the Paulistas they had, in the enjoyment of a peaceful and harmonious existence, been enabled to acquire and practice many industrial arts. While wranglings, disturbances, and revolts were upturning Paraguay, and the Parana missions bristled with arms, the neophytes of Chiquitos were cultivating their fields, establishing manufactories, and carrying on a remunerative trade with Bolivia and Peru. The Jesuits' views, plans, and operations were here untrammeled and unchecked. Santa Cruz was too distant and too weak to hold over them the rule so often exercised by Asuncion elsewhere, and thus their system was probably brought to whatever perfection the age and country would admit of. One thing we know, that since the departure of the fathers the Chiquitos have been gradually receding to their original rude haunts. It may be well to note the various divisions and offices of employment throwing light upon their condition.

As in the Parana reductions, there were attached to each Chiquitos mission two fathers, the one charged with the spiritual, the other with its temporal affairs. The *correjidor* was the native chief, but exercised no authority of his own. He was the mere

* D'Orbigny, vol. iii., p. 40: Fernandez. Fernandez wrote a history of the Chiquitos Missions up to 1723. His work was published in 1726.

executor of his superior's orders, assisted by a *teniente*, *alferes*, and *alcaldes*, all subordinate military officers. Added to these, a chief-justice and a sergeant-major formed what was termed the "cabildo," or tribunal—the Jesuit's privy council. Every morning these members of the cabildo, bearing a cane headed by a silver apple as emblematic of their position, waited upon the fathers to receive their daily instructions.* Though the missionary's power and will were arbitrary, he was cautious to call this tribunal for the consideration of all matters of importance, and aided by their advice to adapt himself and his measures to the wants and wishes of the people. There was no clashing of opinion or purpose. If the fathers found themselves in the wrong they gradually, imperceptibly yielded their ground. In all private occupations, in every art and trade, there was adopted a similar system of order and control. To every branch of manual labor or mental training, to every *parcialidad* or division, there was a master—a *capitan*, as he was called.

We have already seen that the Indians were led out in military procession to work in the fields. The overseers or captains were styled *fiscales*. The office of *cruceros* was an important one, generally filled by men of supposed experience, who were known and recognized by their wearing a black cross.† They were the physicians, the medical stewards, and nurses, and were also charged to give notice of births and deaths, to prepare for marriages and confessions.‡

The *Mayor domo de Colegio* was a kind of commissary general. He was intrusted with the granaries, the stores, and provisions of the mission, and distributed the weekly allowances.

The *Capitan de Carpinteria* was literally the captain of carpentry, the constructor general, "commissioner of public buildings." He had in charge not only the erection of churches and other public edifices, but the construction of every house in the town, the manufacture of furniture and other wood-work. Great skill was attained in this art, giving rise to a considerable commerce with Santa Cruz and other Spanish cities. The Chiquitos Indians

* D'Orbigny, vol. iii., p. 44.

† A party of Spaniards once ascending the Paraguay noticed that a huge cross had been erected in a small Indian village situated on the river, and having inquired into the cause of it were told that the natives had heard from the fathers so much of the protecting influence of the cross that they had hoped it would keep off the jaguars infesting the neighborhood.—CHARLEVOIX.

‡ D'Orbigny, vol. iii., p. 44.

also excelled in turning. The turners had their *Capitan de Rosarios*, and their manufactures were sold at considerable cost throughout Peru.*

The *Capitan de Herreros* was the captain of the blacksmiths. He was master of the iron-works, provided iron for building purposes, working implements, and every description of utensil. Hatchets, locks, and the like were not unfrequently exported.

Another important office was that of the *Capitan de Teyederos*, or captain of the weavers. The Jesuits grew cotton extensively, and manufactured it not only for their own domestic purposes, but exported yearly a large quantity of hammocks, table-cloths, ponchos, and similar articles.

The wax department had likewise a director. The mule-drivers, or transporters, and shoemakers were headed respectively by a captain. The *Capitan de Plateros* had charge of the sacred vases, candelabras, and all decorations of the church. He directed the manufacture of the crosses and apple-headed canes already mentioned, and was chief of all the gold, silver, and copper smiths. Another office belonging to the church was that of the *Maestro de Capilla*, the master of the chapel. He had charge of the church-choirs, taught music, singing, and dancing, instructed also in reading, writing, and deciphering music, and had mainly under his care the schools of the mission.

These are some of the offices established by the Jesuit fathers to which we are led to refer as proof of the advanced civilization they had been enabled here to introduce, and as affording an illustration of the workings of their system. In fifty years from the arrival of the sons of Loyola the scattered squads of Chiquitos and other neighboring Indians had been formed into one and a marked people, adopting a Christian mode of life and worshiping in churches that rivaled the finest in Spanish America, indeed often surpassing them in the costliness of their decorations. Writers do not hesitate to place these Indian towns in advance of the Spanish.† Their manufactures were finer and better, the produce of their lands superior and more abundant. The circulation of money was dispensed with, as the Indians worked for the community and had in turn every want supplied. *Dii laboribus omnia vendunt.* Their treasury was annually filled, we read, with a surplus of $60,000, all of which was lavished upon the churches, the public buildings, and necessary mission improvements.

* D'Orbigny, vol. iii., p. 45. † Id., Viedma, etc.

Painting and sculpture were not neglected. Marble statues by Roman sculptors found their way to the Chiquitos missions,* and paintings of merit adorned the walls of the churches. The Indians themselves were highly skilled in the art of wood sculpture, which chiefly supplied the place of stone.

We can well wonder at this rapid change in the tide of the Chiquitos' existence, and the future development of his capabilities subjected to this religious government; and we become deeply impressed in favor of the latter, whatever Spanish writers may regard as its ultimate tendency and aim. One of the many triumphs of the Jesuit in this province should be especially recorded—a work worthy of his highest efforts. I refer to the language of the country. A knowledge of the language spoken by the tribe among whom the missionary proposes to establish himself is certainly an essential acquirement. The Jesuits were thorough linguists and understood many Indian dialects, but the most famed polyglot among them might have stood appalled at the unmeaning sounds that grated upon his ear on entering the territory of Chiquitos. Up to the latter part of the seventeenth century thirteen languages as distinct as English and French were there spoken—so trifling was the intercourse between the respective tribes. The Chiquitos tongue, however, was happily the most universal; the other twelve were each embraced in a comparatively narrow compass. To acquire all these bordered on an impossibility. They must be moulded into one; there must be one language for the whole Indian race to be settled into these western missions. This was the project the fathers had conceived, and they adopted every means for its execution. Chiquitos Indians and instructors were largely disseminated among their neighbors. They taught in their schools and conversed in none but the Chiquitos language. Prayers were said in that tongue, and in it also all business was transacted. Gradually, with time, these efforts became successful. Every year added new affinities to the varied patois. They are at present one and the same Chiquitos language, and it is a living monument to the labors of the Jesuit, rising above the meaner things writers would attribute to his ambition and self-interest.

Yet all the wealth and splendor of Chiquitos were rivaled in the more northern and marshy province of Moxos, notwithstanding its sickly atmosphere and continuous subjection to riverine

* Vide D'Orbigny, Chiquitos, vol. iii.

inundations. Moxos was under the more direct supervision of the Audience of Charcas. That body made several unsuccessful attempts, toward the middle of the seventeenth century, to civilize its inhospitable haunts. It was not until the year 1686 that the foundations of a mission were here laid, called Loreto—the name given, it will be remembered, to the most early of all these missionary settlements, the ill-fated town that fell into the merciless hands of the Paulistas. This triumph was followed up by a succession of similar acquisitions. Trinidad was standing in 1687, San Ignacio in 1689, San Xavier in 1690, San José in 1691, San Borjia in 1693, six reductions containing, according to Father Equiluz, the historian of the Moxos missions, nearly 20,000 inhabitants. Toward the period of the Jesuit expulsion eight others* were added to this number. San Pedro was regarded as the capital city, although in 1691 the population of Loreto was increased to 4000 souls.

These Moxos missions were but a repetition of those of Chiquitos. Both had their *parcialidads* and *capitans*, similar in every respect. The Chiquitos reductions, though founded at a later period generally than the Moxos, seem to have served as a model for the latter, who, observing the excellence of their wood and iron work, did not hesitate to derive every advantage from securing Chiquitos workmen and imitating Chiquitos art. Cattle were brought from Santa Cruz, tradesmen from Peru and Chiquitos. Moxos had its cotton factories, its iron-works, and soon excelled in various kinds of domestic manufacture. Its towns averaged three thousand souls, with churches unsurpassed on this continent for their vast proportions and lavish expenditure in decorations and votaries. The church of San Pedro alone contained two thousand pounds of massive silver, and valuable works of art.†

There was this difference between these two converted tribes, that among the Moxos Indians there existed a social distinction peculiarly defined. This, as we have seen, was studiously avoided in all the previous missionary establishments which have come under our observation. There must be no rule but that of the missionary, and, to render it the more absolute, there must be no

* San Pedro, Santa Anna, Exaltacion, Magdalena, Concepcion de Baures, San Simon, Joaquim, and San Martin.

† D'Orbigny, vol. iii., p. 233. In this sum are not contained the offerings to the Virgin.

improved rank or grade among the natives. This perfect equality was a fundamental principle in both the Guayra and Parana missions, and hence they were called Christian republics. Along the Marmore and San Miguel, however, we find an aristocracy and a commons as distinct as old Egyptian castes. The former were called *Las Familias*, the latter, very expressively, *El Pueblo*. The families were the capitans and higher order of artisans, the people composed the soldiery and lower class of laborers. The superiority of the one was duly recognized over that of the other, nor did the Jesuits seek to remove the line thus drawn between the two classes of people. They were all religious enthusiasts, submitting themselves cheerfully to self-torture and persecution if chancing in any way to offend the Deity.*

Such was the Jesuit empire in part toward the period of its fall. Now expanding with the march of civilization, now a beacon to this, it had known no decline. With a hundred arms it swayed the native population of Santiago, Tucuman, the Parana, the Uruguay, and Paraguay. Thence ascending the Paraguay River, or skirting along the last slopes of the Andes, we have seen Chiquitos and Moxos yielding with superstitious reverence to its rule. We have traversed almost the whole basin of La Plata, we have stepped beyond it, failing to discover any terminus to this religious government. In the whole extent of this portion of the continent there was scarcely a tribe that had not at some period yielded to its genial influence, though not unfrequently this success proved a mere temporary check of barbarous habits and customs, to fall back with merciless penalty upon the authors of the good work. No tribe had been found more difficult of persuasion than the Abipones.

This race covered that portion of the Gran Chaco which lies south of the Vermejo. They were among the most warlike and ferocious Indians of the southern continent, exhibiting none of the sedentary habits and docile manner of life which so fitted the Guarani for Jesuit rule—a bold, equestrian people, roving and wandering from place to place, and, like the Getulians, making that spot their home where the night chanced to find them. Fond of war, endlessly engaged in strife with their neighbors, and practiced in the destructive use of their native weapons, they had preferred, we are told, the enmity of the Spaniards to their friendship; they would rather excite their fears than their love—a sanguinary pref-

* D'Orbigny, vol. iii., p. 230.

erence which they had every opportunity of gratifying. The name of Abipone became one of terror. Their plunderings, massacres, and devastations have been recorded by a missionary who lived long among them.* The people of Santa Fé considered at one time the proposition of abandoning their city, so completely was it at the mercy of these besiegers. Not until a peace concluded in 1747 were Corrientes and the neighboring missions freed from the same relentless pursuers. In the course of time every Indian town and hamlet was swept from the country watered by the Salado, and the panic more than once spread to Santiago and Cordova. Missionaries, since the days of St. Francis Solano, had succeeded in appeasing none of this revengeful, bloody, inhuman spirit. Fears and anxieties were as much alive and as keenly felt as they had been for ages back.

With the name of Solano are associated those of Barzana and Añasco.† But their endeavors, whatever they may have been, gave rise to few practical results. The Spanish population in the country was not sufficient to daunt so vigorous and unyielding a tribe as the Abipones. At a much later period these efforts were renewed by Fathers Pastor and Cerqueira. Pastor advanced a great distance into the heart of the Abiponian territory. For this perilous mission he had yielded up the mastership of the college of Santiago, probably feeling himself fitted for its difficulties from his indomitable energy and large experience among the native tribes. From Matara, on the Salado, he passed into the Chaco, and, before completing his journey, found himself close to the waters of the Vermejo. Meeting here a band of two hundred men, he addressed them in the Tonocoté language, and succeeded in gaining their good wishes.

Caliguila was the name of the chief here encountered. He invited the missionary to instruct his people. He further showed his complete confidence in Pastor by extending to him the liberty of erecting a church. But, true to his warlike instincts, he entered a provision that the young men should not be detained at long prayers and tedious ceremonies, lest inactivity and sedentary habits should damp their martial ardor and lessen their dexterity in the use of arms;‡ and, moreover, that they should be allowed to carry their bows and arrows during the service of the Church. These were Caliguila's only conditions. Pastor erected a huge cross, as his first step, and dedicated the land to Christ. One by one he

* Dobrizhoffer, vol. iii. † Id., vol. iii., p. 103. ‡ Id., vol. iii., p. 109.

led the Indians before the crucifix, and there made them kneel. He explained and expounded, with unceasing enthusiasm; party after party, passing that way, joined his congregation. Solano's spirit seemed to have descended upon him. To calm Abiponian fury and in any wise subject it, was regarded as something superhuman. This Pastor did; and, as an evidence of his extreme good fortune, he found the quiet and leisure for arranging a vocabulary of the native language. But, a century ago, the memory of it alone survived.* He excited the reverence, and, to a certain extent, the love of this newly-baptized people, though he somewhat failed to inspire the necessary fears of a dread evil spirit. He, upon one occasion, as related by Dobrizhoffer, desired to baptize an old female conjurer, who was about passing to another world. She resolutely declined to submit. The father pictured to her eternal joys on the one hand and eternal torments on the other. He threatened her with the evil spirit and strove to bring to her comprehension that her soul would perish unless she reformed before passing from time to eternity. He was but little heeded. Laughing at his earnestness she replied that she had too long held connection with the demon to think of fearing him now; and so she died.

Pastor, like St. Francis Solano, was prematurely recalled, though his ultimate aim was to return with a number of fathers for the purpose of missionizing the territory of the Abipones. According to Father Sigano, he was sent to treat at Madrid and Rome in behalf of his province. When about to sail with the desired number of Jesuits, assembled from all parts of Europe, he was informed that no foreign missionaries could enter Paraguay or the Plata country, which makes the worthy father disappear. This prohibition was revoked at a later period; the reason of its origin can be readily conceived. Fears of Jesuit independence were not much regarded so long as Spanish missionaries governed the reductions. But once intrusted to men from all quarters of the globe, the Spanish monarch was alarmed that they might at some time refuse allegiance to his crown, and acknowledge that authority to which their local inclinations might lead them, or acknowledge none at all.

A considerable space of time elapsed before any advantage was taken of Pastor's successful efforts in converting the Abipones. Old feuds were revived. A fearless attack upon some Spanish

* Dobrizhoffer, vol. iii., p. 110.

city was followed up by an active pursuit of the offenders. There seemed to be no preventive to the constant collision of the two races. Upon one occasion a Spanish boy—Christopher Almaraz—was taken captive by the natives and carried into the interior of the country. Almaraz lived to be the founder of a mission. He grew up among the savage Abipones and became a savage himself in all their ways of life. The very fact of his origin seemed to have rendered him the most hostile of his tribe toward the white race. In many a plundering expedition and cold-blooded massacre he was the foremost. He "was an Abipone in the eyes of the Abipones themselves."* He became wedded to an Indian woman. In an unsuccessful defense against a strong Spanish force this woman was taken prisoner and conducted to Santiago. Almaraz's affections were strong; he sought to recover his wife. Shut up in that distant city he saw no hope of effecting his object except by some peaceful means. He bethought himself of founding a colony, that the many captives who had been taken from them might be returned to their homes. For this purpose he addressed himself to his cacique, Alaykin, and the project met with his approbation. Almaraz offered himself as negotiator in the matter. He reached Santiago in safety and his petition was granted. The captured wife was returned and Concepcion was built. Azara situates it upon a lake two hundred miles from the Parana and about midway between the Vermejo and Salado. Azara is good authority for all the Paraguay country, but Dobrizhoffer only can be here relied upon. He says it was nine leagues from the Parana, sixty from Santa Fé, and one hundred and seventy from Santiago. This position is easily determined. Dobrizhoffer was at one time appointed to this mission, and states all the vicissitudes to which it was subjected. Though Alaykin's authority was supreme, he proved false to his promises and Jesuit interests by abandoning the reduction and carrying off most of the cattle. Its present locality was to be desired in every respect for its natural advantages, but the unfortunate hostility and insubordination of the Indians compelled a change. After a perilous journey to Santiago and back, Dobrizhoffer removed the mission to the Salado, but a want of fresh water drove them from place to place until their final settlement on the Rio Dulce.

There are three other important missions to be noted, St. Je-

* Dobrizhoffer, vol. iii., p. 213.

ronymo, St. Ferdinando, and the Rosary. Father Hobezozo founded the first of these. Dobrizhoffer places it on the northern bank of the Rio Rey, ten leagues from Concepcion. St. Ferdinando was established under the auspices of the Governor of Corrientes, and situated across the river, opposite to that city. The foundation of the Rosary took place in 1763. Dobrizhoffer, who was its founder, has given its history minutely. He had no exalted appreciation of his mission. He compares its inhabitants to the generation of one thing from the corruption of another, to the creation of "insects from putrid substances, because they were already the outcasts of the Church and other ruined reductions." He next finds fault with the name, and, with a poor jest, calls it "the most thorny of all the colonies." The advent of the Rosary among the sisterhood of missions was attended with more than usual military effect. The known warlike habits of the Abipones rendered this necessary. Four hundred soldiers accompanied the governor and Dobrizhoffer in descending the river from Corrientes. With extreme caution they landed every night on the left bank of the river, until their final arrival at the proposed site of the new mission. The governor was a brave man, but had learned to live in no little fear of an Abipone. The most vigilant watches day and night, a strong guard in continual attendance upon his person, four pieces of cannon planted at the entrance to his house, and "forty large muskets" within, could not calm his unstrung nerves in the face of this Indian tribe about to embrace the Christian religion. If we can trust our author, who jokes at all his movements, he took every fly for an enemy. At last a most precipitous and unlooked-for decampment of the whole force left Dobrizhoffer alone in his glory. Some friendly Indians rushed to the banks to wish the party farewell, but the rapid execution of the governor's orders did not permit of this pleasure.

On the other hand Dobrizhoffer's equanimity was not for once disturbed. With cross in hand, freely and undisturbed he made his way among the Indians, counseled and commanded, and sometimes acted as mediator. Left alone in the power of the Abipones, entirely isolated from the other missions, badly armed against the desperate tribes that infested the neighborhood, with the smoke of their fires curling in sight, it required no small amount of fortitude to remain at his dangerous post. "Yet," says he, "depending on the protection of the Almighty alone, I never felt myself more secure."

While relating this Christian resignation to the perils of his situation, Dobrizhoffer does not omit to strongly depict its disadvantages and its miseries. According to his account, never was such mean provision made for the establishment of a mission; and the little he did possess was either scattered or stolen. The enmity of neighboring Indians did not permit of the enjoyment of the least quiet to the Rosary. Macobios and Tobas made sudden and frequent descents upon the defenseless village to plunder it of horses and cattle, if not to massacre the inhabitants. Sleepless nights and harassing cares preyed upon the disconsolate father, whom long experience alone among the savages could have nerved to such endurance. A successful expedition of Spanish horsemen against the Tobas Indians brought upon his reduction the final revenge of the latter. In due time six hundred mounted Tobas surrounded the mission; but, after a doubtful struggle, they retreated with whatever booty had chanced to fall into their possession. Dobrizhoffer, upon this occasion, was severely wounded by an arrow. The discharge of his arms had thrown the enemy into a panic, without waiting to experience to any degree their deadly effect. The father faithfully fulfilled his many and arduous duties; long years had he devoted to this little-remunerative cause, and there was no sacrifice to which he had not cheerfully submitted. He was a type of the stern and unflinching qualities of the Jesuit missionary. At the same time he was no stranger to learning or literature and the amenities of life, notwithstanding eighteen years' stay among the Abipones. On his return to Vienna the Empress Queen Maria Theresa often engaged his company in "discourse both pleasurable and sage." And here it was that

> "He the years of his old age employed,
> A faithful chronicler, in handing down
> Names which he loved and things well worthy to be known."

Southey has still farther thus preserved his name:

> "He was a man of rarest qualities,
> Who to this barbarous age had confined
> A spirit with the learned and the wise
> Worthy to take its place, and from mankind
> Receive their homage, to the immortal mind
> Paid in its just inheritance of fame:
> But he to humbler thoughts his heart inclined.
> From Gratz, amid the Styrian hills, he came,
> And Dobrizhoffer was the good man's name."

A remote region still remained open to Jesuit enterprise and adventure. The discoverers of many an unknown land, from Africa to China, and from China to Peru and Paraguay, the fathers were planning anew, in the middle of the last century, an expedition destined to extend into the desert promontory of Patagonia. The Spanish government being at the same time anxious to explore its coast, a joint party left Buenos Ayres in 1745, during the reign of Philip V. The Jesuits attending the expedition were Fathers Quiraga, Cardiel, and Strobl. The Straits of Magellan were reached by them. They probably made a faithful survey of the coast, its harbors and advantages; but on returning bronght reports of a cold, bleak, barren, and unpopulated country. The three missionaries landed upon several occasions and undertook journeys into the interior, but scarcely met with a sign of life or living creature. This failure had only the effect of awakening new energies in the Patagonian cause.

The town of Concepcion had already been built, and its prospects satisfied every expectation. It was situated among the Pampas Indians, who cover that extensive region to the south of Buenos Ayres, and served as a midway point and barrier for the city against the hordes that infested that district of country. Father Strobl, an Austrian, and Querini, a Venetian of noble family, were chosen to take it in charge. By gentle rule and indulgent treatment they gained over to their spiritual government many of the Patagonian Indians who came to visit the settlement. Discovering the peculiar benefits that might arise from an establishment of this character in their own midst, they did not hesitate to make expressions of a desire that the fathers should visit their country and there build towns. This proposition was embraced with avidity. Fathers Falconer and Cardiel undertook in 1746 to satisfy the spiritual cravings of the supposed giant Patagonians.* Traveling some distance southwest, they first "felt the pulse of the people," according to Dobrizhoffer. Settling in a favorable location they founded a mission, to which was given the name of Nuestra Señora del Pilar. Shortly afterward the erection of another took place in the same neighborhood. It was called Nuestra Señora de los Desamparados, but why its inhabitants were termed deserters it is not easy to conceive. And, in addition to these, many others would have followed in quick succession, until they overlooked the Straits of Magellan, had not a certain cacique come

* Dobrizhoffer did not find them of remarkable stature.

finally to the reasonable conclusion that his territory and his power were being alike too rapidly encroached upon. Cangapol was the great cacique. He planned a dark conspiracy against the few and defenseless missions that lay within his reach. Gathering around him all his warriors and such as were willing to follow him to battle, he led them to a murderous assault of the Reduction de los Desamparados. Emboldened by unlooked-for success in this quarter, he pushed on to the next mission and compelled it to share a similar fate. Though all his preparations and movements had been anticipated by Father Strobl—who made the most earnest entreaties to Buenos Ayres for military succor, yet only to suffer a sad disappointment in the reception of any such—his advance upon Concepcion was not in the least impeded. And so, ravaging the country, he approached this flourishing mission. The fathers were without difficulty driven from this their last retreat, and Cangapol resumed his sway. The abandonment of Concepcion in 1753 was not long in being followed up by the total expulsion of the Jesuit order from Spanish and Portuguese territories.

CHAPTER XXX.

Stability of the Christian Church.—Contest for the Governorship of Asuncion.—Antequera.—Expulsion of the Jesuits.—Defeat of Don Balthazar Garcia Rosas.—Zavala.—Flight of Antequera, his Arrest and Execution.—Appointment of Don John de Barua.—Return of the Jesuits.—Rebellion in Paraguay.—Communeros and Contrabandos.—A President.—Another Expulsion of the Jesuits.—Don Manuel de Ruiloba, Governor of Asuncion.—A Defender.—Zavala enters Asuncion.—Contest at the Court of Madrid.—Triumph of the Jesuits.—Their exclusive Policy.—Suspicions revived.—The Contest renewed.—Sebastian Carvalho, Marquis of Pombal.—The boundary Line.—Attempt to assassinate King Joseph.—Expulsion of the Order from Portugal and France.—Squillaci.—Charles III.—Aranda.—The Jesuits driven from Spain.—A Cruise at Sea.—Final Landing at Corsica.—Letter of the Pope.—Bucareli.—Viceroy of Buenos Ayres, his Messengers and Dispatches.—Plans thwarted.—Sudden Arrest of the Fathers.—Destruction of the Cordova Library.—Memorial of the Indians in behalf of the Order.—Alarms of the Viceroy.—Expedition against the Parana and Uruguay Reductions.—The Fathers shipped for Europe.—Fate of the Missions.

We left the Jesuits in favor and in power at Asuncion, their missions along the Parana and Uruguay victorious at last in their bloody strifes with the Mamelucos, and in the enjoyment of a peace that promised to be enduring. The seventeenth century glided out with nothing to disturb the calm of their existence.

A rigid observance of each day's routine faltered not for a moment. Fathers passed away and their posts were filled as if the vacancies had never taken place, so semblant were they in life, thought, and action. No one Jesuit differed from another. Nearly the whole Indian population east of the Paraguay was now included within the reductions, lay and Jesuitic, and the Christian republic had grown into an imposing fabric. The rising generation of Indians, impressed with a profound sense of gratitude for the temporal and spiritual benefits to which Jesuit teaching had advanced them, contemplated, without doubt, its permanency. Time had perfected that peculiar development to which the missionary desired to bring the Indian mind. The system was complete and matured after passing through the ordeal of a century's trial, and commanded the admiration as well as the restless attention of the world. We meet with no serious revulsion until the year 1723; it is then that old wranglings are renewed, and we trace them as usual to a dispute for the governorship or the exercise of power. Don Joseph de Antequera and Don Diego de los Reyes are the contending parties. The Jesuits, seemingly unable as ever to keep aloof from these disturbances, are either forced or enter voluntarily into the contest, so that they soon find themselves engaged in entanglements and perplexities from which the experience gained in the past career of Don Bernardin de Cardenas should have saved them. Don Diego, whose cause seems to have been just, found sympathy among the fathers. Each champion had his claims, the merit thereof, however, effecting little against him who could best wield his sword and best pay his followers. Antequera had this good fortune. He attempted, though unsuccessfully, to seize upon his opponent's person in Asuncion, and then pursued him through every reduction by which the fugitive successively passed; but the faithful Indians baffled his every step. In return for the fruitlessness of this expedition, he vented his angry spirit against the Jesuits of the city, believing that he discovered in them a very serious obstacle to his ambitious designs. He determined upon their expulsion from Asuncion; three hours' notice was regarded by some as too much for the victims; but the governor, in his clemency, insisted on this point. In three hours, therefore, the order was once more driven from the capital, not with the violence applied upon a former occasion, but with equal certainty of their departure.

Antequera was a bold and intractable character. Positive instructions from the viceroy had been most unpardonably disregarded by him, and orders to lay down his power as Governor of Asuncion met with sovereign contempt. Confidently trusting in the support he found immediately around him, he drew upon himself the *ultima ratio* of force. Don Balthazar Garcia Rosas, appointed by the Viceroy of Peru to the duty of quelling the rebellion in Paraguay and removing its present chief magistrate, assembled for this purpose a Spanish force and several thousand reduction Indians. With these he quietly crossed the Tibiquari, when, suddenly meeting Antequera at the head of three thousand men, he was completely routed and forced back into the mission territory. The victorious governor next proceeded to inflict summary punishment upon the missionaries and their reductions. He began the work of destruction by attacking several of the towns in the neighborhood of the city, when he was checked by the report that five thousand natives were advancing upon him, and wisely retreated to Asuncion, as his force was inconsiderable. The Guarani were no longer the ill-clad, unarmed, unwarlike, persecuted natives of former days. Now organized into well-trained, well-armed bodies, and led by not unskillful officers, it required consideration before engaging under the disadvantage of such great numerical inferiority.

The governor was as resolved as ever, notwithstanding this little reverse, in his purpose of opposing any force sent against him, and the triumphal greetings that awaited him on his return to Asuncion still farther excited his ambition. Great was the surprise when the news of these events reached Lima. The Jesuits banished, Don Balthazar beaten, and Paraguay in open rebellion: here was a rapid succession of difficulties that fell with the force of a united blow upon the Audience of Charcas and the viceroy. Orders were immediately forwarded to Zavala, Governor of Buenos Ayres, to march upon Asuncion, seize Antequera, and punish the rebels accordingly as they deserved.

Zavala left Buenos Ayres in January of 1725, and entered Asuncion in April of the same year. Antequera and his accomplices had taken the safe course of abandoning the city in good time, so that every thing was peaceably secured. By by-roads and almost alone the ex-governor found his way to Cordova, where he shortly learned that a price had been set upon his person by the Audience of Charcas. He proceeded secretly to La

Plata, was arrested, brought before the Audience, found guilty, and after a short imprisonment dispatched under guard to Lima, where he was closely confined. The viceroy, the Marquis del Fuerte, anxious to rid himself of the responsibility of bringing his prisoner to trial, wrote to Spain that he might be conveyed thither. The king, however, commanded that he should be tried where he was, and if found guilty executed as a rebel. Antequera was consequently brought before the Audience of Lima. His trial, lasting several years, excited much interest; the charges against him were gross and undeniable, but he had the cheering sympathies of the people. A commissioner was dispatched to Asuncion to secure all possible evidence either in his favor or against him, and this evidence sealed the fate of the unfortunate governor. He was found guilty of high treason by the Audience, and was sentenced to be taken from prison clothed in a cloak and hood, placed upon a horse caparisoned in black, and, preceded by a herald, whose duty it was to proclaim the crimes of which the condemned had been convicted, to be thus conducted to the great square, there to be executed on a scaffold by the side of a lower one on which his accomplice, Don John de Mena, was to be strangled.*

This announcement roused the people of Lima. The condemned rebel, on leaving his prison on the 5th of July, 1731, found himself surrounded by a devoted and enthusiastic populace, maddened at the sentence that had been passed upon him. They thronged the streets, the balconies, and windows. Cries of "Mercy! mercy!" were mingled with the more threatening sounds of "Injustice! injustice!" The herald, in the midst of the tumult, delivered his proclamation, but it produced no effect. Even the appearance of a body of soldiers and horsemen failed to appease the tumult. There were fears of the prisoner being released, when the viceroy, attended by a guard, rode to the spot; his presence only infuriated the people the more. He retorted fiercely by an order to fire upon the prisoner. Antequera fell dead, and it was supposed that the two friars who attended him perished similarly by the volley. In regard to this Charlevoix introduces a remark rather singular for its uningenuity: "Two of the religious who assisted the criminal might have fallen (from their horses) through fear, and been afterward trampled to death." Antequera's body was placed upon the scaffold and his head dissevered. More than

* Charlevoix, book ii., p. 260.

once he had rebelled against the highest authority in Spanish America, and according to the laws of the day, met with a deserving fate; but it would be difficult to discover any thing more reprehensible in his conduct than in that of Bishop Cardenas. Both had neglected the viceroy's orders, and opposed those sent to enforce them; both had expelled the Jesuits. Cardenas, indeed, was less considerate than Antequera, for he seized upon both the temporal and the spiritual power of the province. The governor paid the penalty with his head; the bishop was even honored by the Pope with a removal of the censures that had been at first imposed upon him.

Zavala did not remain longer at Asuncion than was necessary for the purpose of appointing a governor: his choice fell upon Don John de Barua.

A marked policy is observable in the course of every Governor of Asuncion—to favor the Jesuits or oppose them. The sequel to the many contests for governorship was either ill treatment of the order and their expulsion from the city, or a still greater enlargement of their power. One commotion confiscated all their property and reduced them to beggary, the next gave them complete control over the affairs of the province. We might suppose that the flight of Antequera would be followed by their restoration; but the disposition of Barua toward them was not friendly, and he avoided, as best he could, the viceroy's instructions to that effect, until a more peremptory command put an end to his indecision. The Jesuits must return to Asuncion, and with all the honors and marks of respect due to that distinguished order. It was in accordance with these instructions that, in March of 1728, the whole military force of Asuncion was drilled early in the morning of the 18th, and marched out of the city, followed by the governor, bishop, the chief officers of the government, and an attendant cavalcade of horsemen, on their way to welcome the fathers, at a distance of twelve miles, and escort them back to their college. The two parties re-entered the city under salutes; and prayers and Te Deums completed the excitement of the day.

We pass rapidly from this act of peace to another of trouble. The people of Paraguay were growing each day more restless. We begin already to discover, at the end of a long succession of tumults and popular commotions, faintly depicted, a future attempt to doff the control of a power beyond the Paraguay and Parana. In 1730 matters were brought to a climax. Barua's governorship

was only intended to be temporary, and his removal was followed by the appointment of D. Ignatius Saroeta. The new governor met with open opposition in the city, and hopelessly abandoned it after a very short visit. A declared rebellion rose throughout the country; the will of the people was overtly preached to be paramount to that of the king; they must have a ruler suited to their own views. Two parties, *Communeros* and *Contrabandos*, the former for the people, the latter for the king, now distracted the country with their opposing arms. Barua, in the mean time, thought it best to "be not too bold." Wily enough to publicly reprimand the disturbers of the peace, he adopted a very different tone in his private intercourse with them, and secretly seconded all their measures so long as they did not directly aim at the establishment of an independent power. Brought to this point, he hesitated, and being unwilling to endanger his life by such extreme action, he took the safe course of resigning.

After deposing all the king's officers, and throwing many into prison, the Communeros bethought themselves of some head to their government. A junta was formed, and, having grown somewhat weary of the title of governor, a president was chosen to preside over that body. The first-elected chief was Don Josef Lewis de Barreyro, who, having shown himself to incline to the Contrabandos and the service of the king, was speedily disposed of, that a stauncher republican might be put in his place. A wild ferment followed the news of Antequera's death, which was received about this time. If Antequera were a rebel, so were all the actors in the present movement rebels; they, too, if captured, must necessarily perish on the scaffold, and with this fear they grew strong in their rebellion. This feeling foreshadowed another attack upon the Jesuits. Antequera was the arch-enemy of Loyola's order, so the Communeros also became violent in their opposition, and quickly decided upon their expulsion. In 1732 the college was attacked, its inmates driven out and the building pillaged. Once more the fathers mournfully plodded their weary way to the nearest missions.

Soon an alarm spread to the reductions that those nearest to Asuncion were in danger. They presented at this period quite a bellicose aspect, for the fathers had kept in the field for some time past a standing army of several thousand natives, in daily expectation of coming in contact with the Communeros. As a guard to the frontier missions, seven thousand men were sta-

tioned on the Tibiquari, prepared for any emergency. They were well armed, well equiped, and sufficiently experienced to render them not a little formidable. But the appointment of Don Manuel de Ruiloba to the governorship of Asuncion somewhat abated this military uproar and painful suspense. Well aware, however, that he would require considerable force to establish his authority, or even enter that volcanic city, he sought successfully this assistance among the Jesuit missions, and on the banks of the Aguapay found encamped a large and well-organized body of Indians ready to act at his command. First, and wisely, making overtures to the rebel authorities, with the hope of settling the dispute in a peaceable manner, he was met by them at the Tibiquari, and to his great astonishment received assurances of their willing obedience.

A few days' journey brought him to the capital, where he took up his residence in the governor's house; but from that moment affairs presented a different aspect. In an attempt to disband the Communeros and quench the independent spirit of parties that raged throughout the city, he was most hopelessly foiled; resisted, too, in other measures, abandoned by those in whom he had been led to place the greatest confidence at the most critical moment, his gubernatorial existence soon drew to a close.

The removal of the Junta, or General Junta, was the work of a day; the title of President being changed to that of Defender. Grown bolder than ever, the Communeros essayed to bring the king's party to terms by a sweeping confiscation of all their property; they then proceeded to inflict a similar punishment upon the Jesuits. Finally, in order to have the fathers and their missions at a safer distance, they forced the Defender to sign an edict which imposed upon the Jesuits the obligation of removing all their reductions to the other side of the river. The people of Asuncion, too obstinate to retreat, looked forward with unconcerned boldness to an open rupture with the king's force, and Zavala was not slow in making them feel its power. His many years of faithful services had been lately rewarded by an appointment to the presidency of Charcas, but before entering upon his new duties he proceeded to restore peace and order in this long-troubled and disordered province. He was clement where clemency could be of avail; but upon this occasion saw that severe and forcible measures alone would enable him to accomplish his object. Strong garrisons were placed along the frontier of Para-

guay, in addition to a considerable force stationed on the Tibiquari, the Rubicon that had so often separated the rebels of Asuncion from the king's good subjects of Buenos Ayres and the missions.

The Communeros made a desperate effort to raise an adequate opposing force. Scouring the country they forced Indians and Spaniards alike to take up arms; the jails were opened that their inmates might be enlisted into the new army, but all to no purpose. Neither in numbers or efficiency could they match with the cautious governor of Buenos Ayres. In every fight and skirmish they were unsuccessful. Zavala entered the city in triumph. It would seem needless to add that the Jesuits, amid Te Deums and church celebrations, returned to their college, which, strange to say, escaped the general demolition of property.

Finally, after passing through this ordeal of trials and adversities, of a triumph here and a defeat there, the gladdening beams of good fortune shone once more upon the Jesuits and their missions. Their usually well cultivated fields, neglected during those two or three years of alarm and contest with the Communeros, waved and bloomed as ever. The natives, long drilled to arms and kept on the alert, returned to their more peaceful occupations, and never had they appeared to enjoy greater security from without or within. But the enemy had only changed his field of action. Baffled in Paraguay and driven from Asuncion, the nest of factious disturbances, they had recourse to a more subtle mode of procedure at the court of Madrid. The seed of Jesuit influence and power, which, in the middle of the sixteenth century, had been planted in Spanish America, was now the expanded and overshadowing growth of a century, nipped, it is true, from time to time, by the frosts of Spanish jealousy, or stunted by the inhuman depredations of Portuguese bandits, but alive and strong withal. That independence and isolation from outside social intercourse as well as government control which successive Spanish monarchs had sanctioned and decreed rendered the Jesuits, in their missions at least, safe from any force that could be brought against them on this side of the waters. To strike then at the very root of the institution it was necessary to poison the king's ear, the only supreme authority recognized by the Paraguay missions. The order bore the burden of too long a catalogue of enemies to escape the defamatory pamphlets and libelous writings, under every form, that soon swarmed throughout the continent, but particularly in Spain. Men who had little or no knowledge of the state and con-

dition of the missionary reductions, dotted down the grossest misrepresentations. Jesuit ambition, Jesuit aspirations, Jesuit disloyalty and dishonesty were penned in every shape in all the conceits of language. As David said of himself, it was not one sin they had committed, but they were "shapen in iniquity." It would be dangerous to the Spanish empire to allow the existence of so continually spreading and grasping an independency. The establishment of a hierocracy upon the American continent was contemplated with horror and alarm. Essays, poems, petitions, and letters inflamed all minds for the contest. The Jesuits must be removed to avert the like startling prospects that were foreshadowed in a thousand forms. Barua played an important part in this literary drama. He wrote much in favor of the anti-Jesuit party, but was ably answered by Father D'Aguilar—a defense* that met with the approbation of Philip V., who evinced neither enmity for nor fear of the Jesuits. He was unmoved by the virulent antagonism of many in high authority, and, as a manifestation of kindly feelings for the missionaries and his Indian subjects, took occasion to write them a most approving letter. The following occurs in it:

"In fine, as it is easy to see by all the pieces already referred to, and by other ancient and modern papers which have been examined in my council with all the attention an affair of this importance required, that I have not in any part of my dominions vassals who better acknowledge my sovereignty, the duties of the vassalage due to me and my royal patronage, or among whom civil and ecclesiastical jurisdiction is better established, as evidently appears by the continual visits of bishops and governors; or who pay a blinder obedience to my orders * * * * I have resolved to address a schedule to the Provincial to let him know what pleasure it gives me to see the calumnies and impostures of Aldimate and Barua refuted by so many justifications," etc.†

Thus, the attacks of their enemies in Spain had, so far, availed nothing against them. In the year 1743 the missions were in the enjoyment of unparalleled prosperity and power. Jesuit suprem-

* Vol. ii., book 13. This defense of Father D'Aguilar fell into the hands of Don Cajetan Buoncompagni, Duke of Sota, a Neapolitan, and was carried by him to Italy. He presented it to Muratori, and thus gave rise to a work from that famous antiquarian chronicler entitled, "Il Christianesimo felice nelle missioni, des padri della compagnia de Jesu nel Paraguay."—CHARLEVOIX, vol. ii., p. 335.

† Charlevoix, vol. ii., p. 360–1. The translation of Charlevoix's important work is by no means an elegant one.

acy was firmly established in South America and recognized by the world. With the right, they were otherwise quite competent to hold this sway; they were perfectly independent in possessing every species of manufacture or produce which might be of use or necessity to the reductions, and they were enabled to adopt such exclusive policy as would best serve their own interests. They availed themselves of this advantage, as we shall now see.

We have, from several authorities,* statistics of the population of the missions from 1730 to 1740. That of the missions of the Parana and Uruguay amounted to 140,000 Christian souls. The population of the Chiquitos reductions was estimated at 24,000. Others among the Abipones, the Pampas Indians of Patagonia, and in the Province of Tarija, added 6000, if not more, to this number. Don Joseph de Peralto, Bishop of Buenos Ayres, tells us that they could raise an army of from twelve to fourteen thousand men, provided with horses, arms, and ammunition, ready to act at any time and in any service. Nearly that number had been for a long time kept on a war footing, as we have seen, on account of the fears the Communeros inspired. The Tibiquari and the frontier had been for years more or less vigilantly guarded. There was, consequently, little ingress or egress into or from the mission territory; indeed, visits to the reductions were almost entirely suspended in consequence of the dangers that menaced them. That is the tone of Jesuit writings; but Azara pretends to have obtained a farther insight into the state of the country.

According to him there resounded throughout the missions a louder din of warlike preparation. Upon every road ditches were dug and strong palisades erected to prevent any, unprovided with a special permit, from passing in or out. The whole boundary of Missiones was girt with these defenses; while at the entrance to each town a gate and a guard obstructed all unlawful passage. The natives were not allowed to pass from one reduction to another, unless in carrying orders or performing some special duty: the most restricted intercourse was enforced. At the same time, not only were Spanish merchants and other interested persons forbidden entrance into this sacred land, but requests from bishops and governors to visit it repeatedly declined. Antequera submitted this charge against the Jesuits when on his trial, and it had its weight: at present there was no doubt of it. Moreover, the missionaries had been of late providing themselves with an unu-

* Dobrizhoffer, Aguilar, Charlevoix, etc., etc.

sual supply of field-pieces, muskets, and ammunition, for defense, it was said, against hostile Indians.* These movements revived the old suspicions of a desire to establish an independent power. The tale was again wafted across the Atlantic; the strife was renewed at the court of Madrid, but this time with very different success. Father Robago, confessor to the king, writes to his brothers in South America "that the complaints received against them at the court were so numerous and of so grave a character that he had found it impossible to prevent the effect they produced, although he had the king, whose confessor he was, at his complete control."†

But neither Spain, France, nor Austria were destined to be the first and chief instigators toward active and violent measures against the Jesuit order. Its influence had diminished beyond a hope of recovery at the respective courts of each of those nations; but an initiatory movement for expelling Loyola's sons, or entirely suppressing the institution, appalled the boldest. It was Portugal that first gave birth to a man of sufficient nerve to take a step beyond the writing of "Provinciales"—to strangle the victim with iron grip, and not torture it to a slow and lingering death. Sebastian Carvalho, Marquis of Pombal, with all his cruelty, vindictiveness, jealousy, avarice, and ambition, had the courage, the patience, the energy, the subtlety, and combination of talent requisite for a project so unprecedented, and, to all appearances, fraught with such perils. After his return from a mission to London he was sent to Vienna to settle, if possible, the difficulties that had arisen between Maria Theresa and the Pope with regard to the patriarchate of Aquilejia. "Here," says Cardinal Pacca, "in the focus of Protestantism, he learned to hate the Church and the religious order." Whether or not he imbibed at the court of Vienna the antipathies or prejudices that there prevailed, he was in no wise actuated by them alone. For two centuries had the Jesuits governed Portugal. From the time they entered the country they instructed at the University of Coimbra, drew up the tariff-bills, presided in the king's council, and established inquisitions on the ruins of older ones: and though they may have carried the

* Azara, vol. ii., chap. xiii., French edition. Don Antonio d'Ulloa mentions none of the facts here gathered from Azara. He has, however, omitted many other interesting and important details, so that credit may be given to this account of Azara, as he had every means of acquiring correct information.

† Azara, vol. ii., chap. xiii., p. 247.

Portuguese name into the heart of China, Portugal declined under their rule. Pombal had observed and studied their institution and sifted their measures. He owed his rise and place to the Jesuits; so that, when he turned against them, it was policy, and not personal feeling, that dictated the course. He thought he saw in their removal the revival of Portugal's energies, the opening of her long-closed channels. Pombal was king in all but name; he needed but the necessary pretexts to make the move that agitated all Europe and extended to the western hemisphere. His first pretext for assuming this defiant attitude toward Rome arose from an incident that transpired on this side of the Atlantic. The boundary between the Spanish and Portuguese possessions in South America had never been well defined. Disputes had on several occasions arisen as to its course; but in 1751 the two nations came to a mutual understanding; the long-disputed colony of Nova Colonia was to be retained by Spain, and the Uruguay missions in return attached to Brazil. Commissioners were sent out to arrange the matter satisfactorily, but soon found that their decision, unaccompanied by the sanction of the missionaries, had been too hastily made. Indeed, the Jesuits most peremptorily declined submitting to any such bartering, in which their interests were so greatly concerned and so liable to injury. Nothing, then, was effected, since the boundary line was disputed by the missions. Pombal seized upon this opportunity to represent the fathers in an odious light at the Pontifical See, and to threaten them for their disobedience. He did not wait long for the consummation of his design against them. The unsuccessful attempt to assassinate King Joseph, a few years afterward, in which the Jesuits were found to be implicated, sealed the fate of Loyola's order in Portugal. In 1759 the marquis addressed Clement XIII. a letter to inform him that the Portuguese government had decided upon the total expulsion of the Jesuits from the country, and, without waiting for an answer from his Holiness, most precipitately landed them at Civita Vecchia—an expensive donation to the Church.

Pombal immediately entered into negotiation with all the European courts. France was the first to follow in his footsteps. Choiseul, however, had an aversion for the Portuguese minister, and probably did not lead Louis XV., as usual, in this matter. On the contrary, in his correspondence he says: "Your Majesty knows well, although it has been said I have labored for the expulsion of the Jesuits, that neither at home or abroad, in public

or private life, have I ever taken any steps to effect this object."* Could an original idea have emanated from the brain of the French monarch? Was the expulsion of the Jesuits his own decree? It is most probable that he acted under the influence and at the instance of Madame de Pompadour, who, it will be remembered, found, more than once, difficulty in obtaining a Jesuit confessor so long as she should remain in the king's household. It was in 1764 that this suppression took place throughout France. Louis pronounced an obituary notice, which has been recorded. It would have been gratifying to him to have seen Father Périsseau made an abbot! Choiseul, who, after this event, thought it best that the Jesuits should exist in France or not exist at all—*sint ut sunt, aut non sint*—was the first to move in the secularization of the whole body. But it is in Spain and the Spanish monarch that we are most concerned.

Charles III. occupied at this time the Spanish throne. On his removal from Naples he caused Squillaci, a Neapolitan, to accompany him, and soon elevated this favorite to the post of prime minister. Squillaci, however, was not popular; he succeeded only in making himself odious to the Spaniards. Arrogant and overbearing, he failed entirely to conciliate the high-spirited and ill-brooking people he was called upon to govern. His attempt to suppress the fashion of flapped hats and long cloaks, so prevalent at that time throughout Spain, occasioned a popular revolt that threw the Spanish capital into a state of wild excitement. Squillaci was forced to flee the city, and the Walloon Guards, ordered out to quell the commotion, were either cut to pieces or completely routed. The king appeared in person and addressed his subjects; he promised to remove the much-hated minister; he was willing to make every reasonable concession; but nothing could restore the peace until a few Jesuits, appearing in the midst of this troubled mass of people, exhorted them to calm their passions and disperse to their homes.

It was strange indeed that none but these fathers should have been able to quell this commotion at Madrid. Could they have possibly occasioned the tumult? "Charles thought so, and did not forget it," says Saint Priest. Probably they only sought to remove the Neapolitan favorite—monopolizer of the king's thoughts and counsel—and once more force themselves into those strongholds around the throne which had on previous occasions given

* Saint Priest, Chute des Jésuites, p. 32. Paris, 1844.

them such weight and control in the affairs of the nation. But the order had passed the culmination of its power in Spain; it was no longer to furnish keepers of the king's conscience, though it seemed yet to possess sufficient vitality to stem the current of prejudice and misfortune that was setting against it. Their expulsion in 1759 from Portugal, and in 1764 from France, may have occasioned no great surprise, but news of a similar movement in Spain was startling beyond all conception. The Jesuits imagined that, though persecuted by Pombal and Louis, they might at least find a safe retreat under the government of the good and pious Charles, the most cherished son of the Pope; but the Spanish monarch had found them, as he remarked to the French embassador, "a dangerous body;" he might banish them, and still be a good Catholic. Aranda, his minister, thought likewise, and counseled immediate and energetic action. On the 27th of February, 1767, about a year after the "hat revolt," Charles issued a decree banishing the Jesuits from all his dominions, never to return, nor even hold intercourse by letter or otherwise with his people. The colleges were surrounded at midnight; the bells secured; each brother allowed his breviary, linen, chocolate, snuff, and money; then, surrounded by an escort of dragoons, they were conducted to the coast and as speedily shipped. They sailed for Italy. Father Ricci, general of the order, determined not to receive his brothers. Charles insisted; but powder and shot soon drove them from Civita Vecchia. They put to sea again, touching at Leghorn and Genoa, where the same inhospitable reception awaited them. Thus for six months were upward of six thousand Jesuits—among them many men of worth and learning—tossed about the Mediterranean, with every prospect of a continuous sea-faring life. Finally, after much dispute, they were permitted to land in Corsica, and there subsisted as best they could. A month after the issuing of the decree of expulsion Charles wrote to the Pope:

"Most Holy Father,—Your Holiness is well aware that the first duty of a sovereign is to watch over the peace and preservation of his state, and provide for the good government and tranquillity of his subjects. In compliance with this principle I have been under the imperious necessity of resolving upon the immediate expulsion of all the Jesuits who are established in my kingdom and dominions, and to send them to the States of the Church, under the immediate, wise, and holy direction of your most holy beatitude, most worthy father and master of all faithful.

"I should fall under the obloquy of throwing a heavy charge upon the Apostolic Privy Council, by obliging it to exhaust its treasures in the supporting of those poor Jesuits who happen to have been my vassals, had I not made previous provision, as I have, for the payment to each individual of a sum sufficient to maintain him for life.

"On such understanding I pray your Holiness to view this my determination simply as an indispensable step of political economy, taken only after mature examination and the most profound reflection.

"Doing me the justice to believe this, as I pray you will, your Holiness will surely grant your holy and apostolic benediction on this measure as well as on all my actions which have for their object, in the same way, the promotion of the honor and glory of God. YO EL REY."*

This letter could have brought but one consolation to Clement XIII., and that was the pecuniary provision it announced. Indeed he shed many a bitter tear over this decision of one to whom he writes, "To our dearest son in Jesus Christ, health and apostolic benediction." The blow fell heavily upon him in his old age. In his answer to Charles he says:

"Is it the Catholic Charles III., whom we so much love, that is to fill to the brim the cup of our bitter afflictions, to overwhelm our unhappy old age with grief and tears, and finally precipitate us into the tomb?"†

Then, in an altogether different strain:

"We say it in the presence of God and man that the body, the institution, the spirit of the Company of Jesus is absolutely innocent, and not only innocent, but that it is pious, it is useful, it is holy; and all this whether considered with reference to its laws, to its maxims, or to its objects. Those who have attempted to detract from its merits have only called down upon their lies and contradictions the contempt and detestation of all good and impartial men."

Without digressing farther, it would seem proper to turn our particular attention to the immediate effects and consequences of this suppression throughout Spanish America. We have just seen that Pombal made the opposition of the missionaries to the boundary treaty of 1751 one of his chief grounds of complaint to the Pope. Skeptic minds, who never study the substance and truth of any thing, had been for years looking forward to the self-announced independence of the Christian republic on the Parana and Uruguay. Their power and prosperity had, moreover, aroused the suspicions of even sensible minds. The council of Charles

* Robertson's Letters from Paraguay, taken from MSS. of Sir Woodbine Parrish.
† Ibid.

III., to whom was referred the Pope's letter, remark in their report: "It is proven against them by the undeniable testimony of their own papers* that in Paraguay they took the field with organized armies to oppose themselves to the crown; and now at this very time have they not been in Spain endeavoring to change the whole government, to modify it according to their own pleasure, and to promulgate and put into practice doctrines the most horrible?" Whatever credit may be attached to this declaration it was sufficient to initiate proceedings against these disloyal subjects and promulgators of horrid doctrines.

Bucareli was Viceroy of Buenos Ayres at this important period. He seems to have entertained a most lively sense of the importance and virtual power of the Jesuits on the South American continent. His whole conception of one of these religious amounted to a disloyal vassal and a dangerous rebel watching for the moment of his independence; and he shaped his conduct toward him as if dealing with a warlike and treacherous Chana or Abipone. He imagined the wealth of mines to be somewhere concealed in the missions, and a standing army of natives, furnished with all the implements of war, ever on the alert to protect it. The measures he took for the suppression of the order conformed perfectly with the alarming state of his mind.

On the 7th of June, 1767, the Prince, ship of war, arrived at Buenos Ayres, conveying to the viceroy notice of King Charles's decree. He was instructed to carry his orders into effect with the greatest secrecy, and so arrange his plans that the arrestation might take place simultaneously over as great a space of country as possible. Aranda thought, as Bucareli, that the Jesuits would not yield peaceably, and hence a union of their missions and colleges into one collective force must at least be prevented. Had the missionaries, for it was in their power notwithstanding this caution, taken some such steps toward the united action of the whole body, the contest might have proved long and doubtful. The viceroy, pursuant to these instructions, forwarded his messengers to the farthest limits of the vast territory committed to his administration. His dispatches were solemn and ponderous documents, heavily sealed, and mysterious, for they were not to be opened until the 21st of July. Thus at one and the same time and hour this sudden blow was to fall upon every member of the

* These are mysterious papers, and should be brought to light if in actual existence.

order. The colleges of Cordova, of Tucuman, and Asuncion were to be surrounded at night, their inmates awakened, dragged forth, and dispatched in the darkness to Buenos Ayres. A hundred devoted missionaries, who had performed the religious duties of the day toward native but Christian populations, and, after the chanting of vespers throughout that broad Indian land, retired to their evening devotions and a quiet repose among a good and peaceful people that had, through the trials, labors, and self-denials of Jesuit brothers, been redeemed from their original rude and untutored state, were, at a moment of time, to be forced from their missions, and, ere conscious of their situation, speeded down the Parana to the general imprisonment at Buenos Ayres.

Every village, highway, and by-road resounded day and night with the clattering advance of Bucareli's swift messengers. But these plans and directions which had so much engaged his restless and untiring zeal in an unworthy cause were now, by unforeseen events, partly frustrated.

On the 3d day of July information was received at Buenos Ayres of the expulsion of the order from the Peninsula. Bucareli, fearful that the news might spread, rouse the missions and the clergy, and, like the dragon's teeth, grow warriors in the Parana reductions, resolved not to wait for the nineteen days that had yet to elapse, but to immediately follow up the course that had been pursued on the other side of the waters. About midnight he held a consultation with his friends and advisers, and at an early hour in the morning, long before the sun arose, had dispatched his officers and couriers to their respective duties. The fathers were to be unconditionally and indiscriminately arrested wherever they should chance to find them. Scouting parties were at the same time sent out to intercept all messengers and communications whatever, and the viceroy kept a stout body-guard around himself ready to act at a moment's notice. His dreams of missionary wealth kept him fully reminded of the necessity of stringent instructions concerning it. The goods and chattels of every Jesuit, the gold and silver decorations of the churches, the massive candelabras and hidden treasures, if there were any, the paintings and statuary, must pass safely into his hands; and he allowed three days for forwarding to the capital every thing of this description. With all this anxiety and foresight, could they under any circumstances fail to come into his possession? What if the riches and stores he had pictured to himself and others on both sides of the

Atlantic should never be realized? Such a thought creeping into his mind was sufficient to cause the rankest suspicions, which he located wherever the occasion rendered it most convenient. Many in consequence were thrown into prison or suffered severely at his hands.*

But the imaginary rapidity with which the work was to have been done soon subsided and gave place to a more just appreciation of the difficult task assigned him. Not that there was any evidence of opposition to his orders; but great distances were to be gone over, the missions were to be tracked to their isolated positions, broad rivers crossed, and huge forests traversed. This was not the work of a night, how dark soever. The couriers dispatched in the night of the 2d of July effected but little. They arrested a few missionaries here and there at no great distance from Buenos Ayres, and so terminated their labors. Bucareli seemed for a moment brought to stand, his activity paralyzed. Cordova, the Parana missions (the Chiquitos came within the jurisdiction of the Viceroy of Peru), had not been reached; time was passing, and the viceroy remained a prey to miserable disappointments and ill forebodings. At last, in the month of August, a body of troops headed by Don Ferdinando Fabro appeared on the heights of Cordova. They entered the city without resistance, plundered the college, the most important and learned institution in Spanish America, and made prisoners of all the fathers that came within their reach. To root out the heretic doctrines King Charles's council had spoken of, they thought proper to destroy the famous library situated upon the Estancia de Santa Catalina, the home of the historian Guevara. The most valuable works and rarest collection of manuscripts on the western continent were here irretrievably lost in the promiscuous piles of printed and written matter thrown up for destruction by Bucareli's illiterate soldiery.†

Though but few relics of this great library ever reached Buenos Ayres, there was no failure in forwarding every Jesuit that had been found. Two hundred and seventy-one fathers were now secured in that city. Bucareli, thinking he might dispense with them, shipped two hundred and twenty-two for Cadiz. Having done this, he fell into some repose, and took no farther measures until the Spring of 1768.

We have no proofs, and doubtless there are none, that would

* Funes' Ensayo, book v., chap. 9.

† Ib. The second volume of Guevara's history was destroyed.

lead us to credit the report often spread by Bucareli that the Jesuits gave evidences of and were determined upon a stout resistance should the Spanish ever attempt to rob them of their missions. Much grieved, without question, they may have been, and peaceful efforts to retain the hold they had in the Parana reductions may not have been neglected by them; but this was all. A letter was now sent by the caciques and chief native officers of the missions to Bucareli, praying that the fathers might be retained. The Jesuits are accused of being the authors of this document; but, if true, Bucareli acted likewise subsequent to their expulsion.

*Translation of a Memorial addressed by the People of the Mission of San Luis to the Governor of Buenos Ayres, praying that the Jesuits may remain among them instead of the Friars sent to replace them.**

"(I. H. S.)

"God preserve your Excellency, say we, the Cabildo, and all the caciques and Indians, men, women, and children, of San Luis, as your Excellency is our father. The Corregidor Santiago Pindo and Don Pantaleon Cayuari, in their love for us, have written for certain birds which they desire we will send them for the king. We are very sorry not to have them to send, inasmuch as they live where God made them, in the forests, and fly far away from us, so that we can not catch them. Withal we are the vassals of God and the king, and always desirous to fulfill the wishes of his ministers in what they desire of us. Have we not been three times as far as Colonia with our aid? and do we not labor in order to pay tribute? And now we pray God that that best of birds, the Holy Ghost, may descend upon the king and enlighten him, and may the Holy Ghost preserve him. So, confiding in your Excellency, Señor Governor, our proper father, with all humility and tears we beg that the sons of St. Ignatius, the fathers of the Society of Jesus, may continue to live with us and remain always among us. This we beg your Excellency to supplicate the king for us for the love of God. All this people—men, women, and young persons, and especially the poor—pray for the same with tears in their eyes.

"As for the friars and priests sent to replace them, we love them not. The Apostle St. Thomas,† the minister of God, so taught our forefathers in these same parts, for these friars and priests have no care for us. The sons of St. Ignatius, yes, they from the first took care of our forefathers, and taught them, and baptized them, and preserved them for God and the king; but for these friars and priests, in no manner do we wish for them.

* Sir Woodbine Parrish: Buenos Ayres from the Conquest, p. 267.

† The natives firmly believed that St. Thomas had landed on the coast of Brazil and passed over to the Pacific.

"The Fathers of the Society of Jesus know how to bear with our weaknesses, and we are happy under them for God's sake and the king's. If your Excellency, good Señor Governor, will listen to our prayer and grant our request, we will pay larger tribute in the *yerba caar nimi*.*

"We are not slaves, and we desire to say that the Spanish custom is not to our liking—for every one to take care of himself, instead of assisting one another in their daily labors. This is the plain truth which we say to your Excellency, that it may be attended to: if it is not, this people, like the rest, will be lost. This to your Excellency, to the king, and to God—we shall go to the devil! and at the hour of our death where will be our help?

"Our children, who are in the country and in the towns, when they return and find not the sons of St. Ignatius, will flee away to the deserts and to the forests to do evil. Already it would seem that the people of St. Joaquim, St. Estanislaus, St. Ferdinand, and Tymbo, are lost. We know it well, and we say so to your Excellency; neither can the Cabildos ever restore these people for God and the king as they were. So, good governor, grant us what we ask, and may God help and keep you. This is what we say, in the name of the people of San Luis, this 28th of February, 1768.

"Your humble servants and children."

Here follow the signatures of the *lord mayor*, judges of the first and second court of the first and second brotherhood, four aldermen, secretary of the court in the name of forty-one caciques and others.

This petition fell like a thunderbolt in the Council of Bucareli. The sensitive and timorous viceroy viewed it as the forerunner to some more violent remonstrance. He so wrote to Aranda. The pacific intention to which he had brought himself, of a simple recall of the missionaries, was dissipated at the receipt of this gentle and loyal epistolary production. Failing heretofore to catch at the faintest glimpse of rebellious opposition to the king's decree, he had ceased all warlike preparations for carrying it out; but this letter revealed to his distempered imagination an outbreak and consequent campaign of no small magnitude. Quiet, cautious, and circumspect as ever, the details of his present and future operations were incessantly considered; he burdened his mind with the labors of a Sisyphus; the world's weight rested upon his Atlas shoulders in this duty of expelling the Jesuits. Behind the shield of a numerous and well-provided native army he thought their lurked motives and objects dark and disloyal. Unable himself to see through the impenetrable mystery that

* An annual tribute was paid to the crown in yerba or Paraguay tea.

hung around the missions, and consequently ill qualified to judge what action they might take in the coming imaginary death-strife, he provided for the worst. We, after a century of time, impartial and disinterested, either for praise or censure, pass through these reductions, see and study the people, and fathom as we can whatever may have been the aims or intentions of their paternal and all-powerful guardians, but fail to discover the broodings of rebellion which the viceroy's gloomy letters depicted to the court of Madrid. We find a peaceful, Christian, and loyal spirit resting upon a numerous and happy people, who paid their tribute to the king and revered the men under whose wise and exemplary administration they had grown up in the grace of God and to a wondrous civilization, claiming nothing, asking nothing, and harming none. It is true that strict discipline and military exercise had rendered them formidable in the field upon several occasions, either in avenging wrongs and persecutions inflicted upon themselves or in sustaining the lawful authority of the land. But the same discipline checked all turbulence now.

Bucareli carried out his views and, as a preparatory step, occupied the Pass of Tibiquari, so frequently referred to, with two hundred men, stationed an equal number at San Miguel, and then, embarking at Buenos Ayres, attended by three companies of grenadiers* and sixty dragoons, sailed up the Uruguay as far as the Salto Grande. Here he dispatched Don Juan Francisco de la Riva Herrera with two hundred men to execute his orders in the missions bordering upon the Parana, and Don Francisco Bruna de Zavala to effect the same among the Uruguay reductions. Leaving his ships at the fall he advanced farther up the river, and made Tapeya his head-quarters. With the conquest of these missions there could be associated but meagre fame, to make the most of it, but to find them unresisting and submitting even in tears throws out in bright relief their truly peaceable and Christian character. Seventy-eight fathers were found in the reductions, and the expedition, with its prisoners, returned to Buenos Ayres in September, after an absence of four months.†

The viceroy had in the mean time taken occasion to draw up an address to Charles III., signed by the Indian chiefs, to counteract the effect of the petition made in favor of the Jesuits. There was no difficulty in forcing the Indians to affix their signatures to this document, which was forwarded as their own,

* Funes.

† Funes, book v., chap. viii.

though diametrically different in tone, spirit, and feeling from the former. It is addressed to "Our good King Charles III." The following occurs in it:

"With our whole heart do we spread this letter out before your royal throne. We have already seen enough to assure us, good king, that the Lord in his mercy has enlightened you as to our pitiable condition, and moved you to relieve us from the arduous life to which we were doomed.

"As we would receive the person of your Majesty, so with the greatest delight have we received the priests and friars whom you have appointed to rule over us. Many and repeated thanks do we give your Majesty for having sent such a person to govern us as his Excellency the Captain-general Don Francisco Paulo Bucareli. With pity he looked upon our poverty and did all he could for its alleviation. His kindness has been made manifest to the whole world. He has clothed us with garments, behaved to us and invited us to his board as if we were gentlemen. He has gratified the highest aspirations of our hearts. We have received this saint, the creature of your Majesty, as at the hands of God."*

The greater part of it is a eulogy upon the saintly Bucareli, whose modesty did not deter him from thus attempting to raise himself in his Majesty's estimation. In the same year the Audience of Charcas executed its charge by removing the Jesuits from Chiquitos. And thus two hundred and twenty years from the time when the first Jesuits landed upon the Brazilian coast not one of Loyola's sons remained upon the South American continent, the great field of their missionary labors and imperishable glory.

Thus the reported standing armies, the supplies of fire-arms, the field-pieces and muskets, and the stores of ammunition which had so startled the outside world of Spanish America in contemplation of resistance to the king's decree vanished like so much smoke. Not a warlike demonstration was made. Meekly obedient to their pastors, the natives gathered around the missionaries in quiet submission to their decision, and awaited without a sign of resistance the approach of Bucareli's advancing parties. Without a murmur, they committed to their charge every possession that had fallen to their lot, unresistingly yielding the last temporal and spiritual gains that had been amassed by their labors—amassed at the price of blood and Christian self-denial—to be devoted to the decoration of churches, the increase and improvement of missions and schools, never to their own personal gratification. A mournful destiny awaited them: they were to be eventually repulsed

* Translated by Robertson from MS. of Sir Woodbine Parrish.

by their general, and not allowed to find a refuge from the world-wide persecution that followed them, even in the States of the Pope.

There can scarcely be a doubt that a formidable resistance might have been made by the Jesuits against Bucareli had they seen fit or felt disposed to pursue that course. It has already been remarked that an army of fourteen thousand men, completely equipped, could have been raised, in case of emergency, throughout the missions. Though not the most warlike of the aborigines, the Guarani of the reductions were brave and well disciplined. Had they taken possession of the fastnesses in the wilds of a country so little known to any but themselves, they might have entertained every hope of the success that had previously attended their arms against the Paulistas, than whom no enemy could be more fearless and daring, none more rightly dreaded. And we may reasonably suppose that in the face of this force the viceroy would probably either have retreated or been repulsed. They might have judged that their success could only be temporary, and that their ruin in the end would only be the more overwhelming, but there was even here a ray of hope to persevering minds such as theirs. They had declined on a previous occasion to recognize the boundary treaty of 1751, and the king had yielded; they might beat off Bucareli, declare their loyalty, and yet be pardoned. Nor are we inclined to suppose that the meshes of Bucareli were so well laid as to have forced upon them the alternative of tame submission. The Jesuits were not out-Jesuited and checkmated at last; they had all the prudence, the foresight and sagacity and natural means that they ever had, and, more, a large and considerable force to sustain the power that had so long continued in their grasp. No coup-de-main or diplomatic trickery on the part of the viceroy brought them to the humble terms under which they yielded up their persons and their goods. We conceive their whole conduct to have been governed by a sense of simple obedience to a decree of the Spanish monarch, and we must with justice incline to their cause, and sympathize in their misfortunes. From the outset we discover no evidence of any contrary movement. In their whole history we meet with scarcely a disloyal act, though we trace their course through a succession of popular commotions and revolts among a wildly-scheming and adventurous people. Often had they taken up arms in the service of the king, never against him; and it may be safely added that

by no other people, order, or body of men were Spanish interests ever so advanced on the American continent.

Their removal was neither wise nor politic. It served neither the means nor interests of the Spanish people, or the Spanish monarch. The missionary's life was pre-eminently the sphere of the Jesuit. The genius, the acquirement, the aims that made his presence dangerous at Continental courts, made him eminently useful in the wilds of La Plata. In driving them from the missions of Chiquitos, of the Parana, of the Uruguay, and all others, we perceive an inconsiderate, uncharitable, unchristian aim at their complete extinction, almost without a purpose. The aged Pope Clement designated the order as useful, pious, and holy, and these three qualities were to be found in the missionary reductions of South America, however wanting elsewhere.

Azara pursues them with unrelenting enmity in all their measures. He approves of the *commanderies*, first instituted by Yrala as a last resort for extending the territory of his governorship; he considered the latter means as the most applicable for enlarging the boundaries of Spanish America, and yet inconsistently depreciates the benefits of Jesuit missionaries. No conquistador ever fought with such success as did the fathers, and no greater expanse of country ever fell to his lot. But Paulistas and Communeros, enemies themselves of the crown, gradually completed the work of their destruction.

And again: we are led to inquire whether the Jesuit teachings tended more than any other to benefit the state temporal and spiritual of the many indigenous tribes that had been released by them from their original barbarism. There are those who condemn—not arguing always—Jesuit interestedness, Jesuit ambition, and the condition of pupilage in which, to the last, the Indians were held. If there were nothing in the Jesuitic rule to excite emulation, yet the natives lived happily under it, attained a considerable civilization, and relapsed rapidly into barbarism under the temporal and spiritual rule which replaced that of the fathers. We doubt whether a more enlarged system of instruction could have been substituted in that age; and humanity must deplore the destruction of that Christian foundation upon which might have been reared, at a later period, a noble superstructure of Indian civilization, a development of Indian intellect yet unknown to us. It is no matter of astonishment that the Conquistadores and their descendants should have exhibited little good feeling for the order

and for its works, for the interests of the two were utterly at variance. One was a sublimely insurmountable obstacle to the selfish designs of the other, for we know that the Jesuits invariably checked the merciless cruelties which disgrace the early annals of Spanish conquest.

It is not to be denied that the Indians in entering the reductions merely underwent a change of masters, but it was a change from bondage under a heartless, unfeeling Spaniard, adventurer, and gold-seeker, to a mild and Christian government. On the one hand it was a life dragged out in beastly drudgery; on the other, pious, cheerful, and elevating.

The commandantes worked their slaves to death; the Jesuits made every provision that could render their neophytes happy and contented. The one was an instrument of present civilization and future enlightenment; the other a blight upon progress and humanity. Never overtaxed in the field, and even there enlivened by strains of music, with every want supplied, without a care, instructed by the Jesuits themselves, admitted to the "mysteries" of the Church, taught the use of arms and the art of war—whence else could they have obtained all this but from the energy, sagacity, self-denial, and unity of Loyola's order? It was this very civilization that, with some reason, inspired such groundless fears among the Spanish, and in proportion makes the Jesuit missionary system the more beautiful and the more to be admired. The numerous Guarani tribes would have long since been on the verge of extinction but for the establishment of these missions; between the cross-fires of Spaniards, Portuguese, and Paulistas, there was eventually but little hope of existence. That great race, of which the shadow remains to-day, would have been swept from the earth centuries ago. The lay and the Jesuit system admit of no question; and even under that of the Franciscan friars, which followed, the same falling off in population and general receding from their former advanced state, shows most conclusively that the Jesuit order, however objectionable in the centres of European civilization, was here in its proper element.

On the retirement of the fathers the missions were thrown into the most irremediable confusion; the very heart and soul of the Christian republic was gone; it lay like a dead chaotic mass. The miserable government and bad administration that followed presents only differences and disputes among the newly-vested authorities. There was unity in nothing. The spiritual and

clerical governor—for there was now a very broad distinction—seldom or never agreed. All their purposes clashed. But by mutual consent the unfortunate natives generally bore the consequent burdens of their quarrels. Says Doblas,

"The curates wanted the Indians to attend mass and the counting of their beads every day at whatever hour the priests might choose. This was often purposely made a very inconvenient hour. Hereupon the laymen interposed to prevent compliance, sometimes with reason and sometimes without it. The result was that the curate ordered the Indians who obeyed the administrator to be flogged, and the administrator awarded stripes to those who obeyed the curate. Both chastisements fell upon the miserable Indians, without farther delinquency on their part than that of not knowing exactly which party to obey, or of obeying the party they liked best."*

Jesuit harmony and discipline, without which no mission could be formed, were wanting. The Indian fled to the forest, and a fearful consequence, already referred to, arose from this present organization. In 1801 a census of the Indian population was made by Don Joaquim de Soria. At that time there were in the thirty missions 45,639 souls, less by 98,398 than in the year 1767. In this space of thirty-four years more than two thirds of the original number had disappeared; cattle, sheep, and horses were destroyed; the old energies of the Christian republic were wasted away, until there remained scarcely the skeleton of those flourishing Jesuit missions. Here and there a spacious but crumbling church, with fading frescoes, speaks for this departed wealth and civilization.

* Translated by Robertson, vol. ii., p. 109

CHAPTER XXXI.

False Policy of Spain toward the Colonies.—Treaty of Utrecht.—Foundation of Montevideo.—Contrabandists.—Treaty of 1750.—Viceroyalty of Buenos Ayres.—Treaty of St. Ildefonso.—Final Concessions of the Mother Country.—Expedition under Sir Home Popham.—Capture of Buenos Ayres.—Assault of Montevideo.—Defeat of General Whitelock.—Liniers.—Joseph Bonaparte.—A Portuguese Pretender.—Cisneros.—Assembly of July 9th, 1816.—Independence of Paraguay, Bolivia, and Buenos Ayres.—Disadvantages the South American People labored under for forming a good Government.—The Banda Oriental.—Urquiza.—Oribe.—Battle of Monte Caseros.—Convention at St. Nicolas.—Courtesy extended to our Minister.—Disaffection of Buenos Ayres.—Siege of that City.

THE policy of the mother country was not only neglectful, but absolutely hostile to the interests of La Plata. Fifty years after the foundation of Buenos Ayres one million of cattle covered the pampas; but Spain had not the forecast to see in this extraordinary multiplication, in the fertility of a soil producing with the smallest possible labor the fruits, cereals, and vegetables of temperate and tropical regions, the elements of a greatness that would make it the prize-jewel of her crown, and the seat of a future trade that might yield larger revenues than her mines.

The merchants of Seville and Lima obtained the monopoly of the trade of Peru, and through their influence prohibitory edicts were issued against that of La Plata, lest it should become, as Cabot hoped and foresaw, the most popular and available channel of communication between Europe and the colonies of the South and West. In vain the Buenos Ayreans appealed to the home government. Their only concession was leave to export annually to the Portuguese settlements of Brazil 2000 fanegas of wheat, 500 quintals of jerked beef, and 500 of tallow; to which in 1618 the the farther privilege was extended of sending annually to Spain two vessels of one hundred tons burden each, freighted with the products of the country. At the instigation of the merchants of Seville, a custom-house was established at Cordova, to levy fifty per cent. upon all goods which these vessels might be the means of introducing into the country, while at the same time the transmission of the precious metals by this route was entirely interdicted.

For nearly a century after the settlement of Buenos Ayres all commercial intercourse with Spanish colonies of the same *hemisphere* was forbidden under severe penalties, and two ships represented the whole legalized trade of the country with Europe. It was the foundation of a vast debt of grievances, only canceled by the movement that released her from the control of so unnatural a mother. Though jealously guarding what she considered her interests in all laws for the government of the colonies, Spain seems to have shown but little sagacity in her transactions with foreign powers. She permitted both the Portuguese and English to obtain a footing in La Plata, which became the seat of an enormous contraband trade. The governor in vain endeavored to check what ministered less to the luxury or avarice of the people than to their necessities, and found its chief strength in the unjust policy which for more than a century had been imposed upon them.

In 1715 the treaty of Utrecht secured to Portugal the settlement of Colonia del Sacramento, immediately opposite to Buenos Ayres. The same treaty conceded to the English an "asiento" or contract to supply the Spanish colonies of America with slaves, and Buenos Ayres was one of the points at which she was allowed to form an establishment: here they were to send four ships annually, with twelve hundred negroes, their value to be received in the products of the country. Both parties bound themselves not to transgress the laws which forbade the introduction of European goods, but the moral force of these stipulations was weakened by the injustice of the mother country and the wants of the Spanish Americans, which excused, if they did not justify, the introduction of articles forbidden them by more legal channels, or obtained at the ruinous prices fixed upon them by the monopolists of Spain. So boldly was illegal trade carried on that vessels constantly arrived freighted with manufactured goods, that supplied not only Buenos Ayres, Paraguay, and Tucuman, but, spite of the vigilance of Cordova officials, found their way into Peru, where they were sold at lower prices than those sent by the merchants of Seville *via* Panama. Both Portuguese and English were equally active, and the former attempted to extend their possessions by a new settlement near the mouth of La Plata. From this they were promptly dislodged by Zavala, Governor of Buenos Ayres, who immediately commenced the foundation of San Felipe Puerto de Monte Video. Important privileges were granted to the first set-

tlers, which induced immigration from the Canaries and other places; the viceroy sent large sums from Potosi, the Guarani Indians worked steadily, and Zavala vainly hoped that with the erection of Montevideo, and Maldanado on the same shore seventy miles east, he had permanently checked the progress of Portuguese colonization. Contrary to these expectations, they became more active than ever, and established themselves on the Rio Grande, carrying on their trade with such spirit that it is said to have been worth to them two millions annually. The success of the English was yet greater. One of their ships about this time sailed from the river with two millions in specie and hides valued at seventy thousand dollars, and this too not in return for negroes, but a rich cargo of European goods.

Such was the condition of commercial affairs in La Plata for nearly a quarter of a century. Spain awakened at last to the result of her selfish and suicidal policy, and attempted to check the activity of the contrabandists by her guarda costas, which led to open hostilities with England. In 1750, by a new treaty, Portugal agreed to cede her settlements on the river for the seven missionary towns of the Uruguay. The poor Indians, happy and prosperous under the rule of the Jesuits, and knowing the Portuguese only as the cruel slave-hunters who had driven them from their homes into the folds of these shepherds, revolted with horror from this arrangement, and resisted what they considered a new effort to enslave them. After destroying the missions and slaying several thousand Indians, the Portuguese refused to take possession of their lands, and made the opposition of the aborigines a new pretext for continuing to hold Colonia.

We have seen that this resistance on the part of the Indians was ascribed to the influence of the Jesuits. From that time their rule was doomed in La Plata.

The impunity with which contraband trade had been pursued, the increased insolence and continuous aggressions of her troublesome neighbor, left Spain the alternative of a more generous policy or the ruin and perhaps the loss of her colonies in this region. She determined to form a new viceroyalty, with Buenos Ayres as the capital. It was to comprise the province of the same name, Paraguay, Cordova, Salta, Potosi, Santa Cruz de la Sierra, La Paz, La Plata, Montevideo, Moxos, Chiquitos, and the missions of the Uruguay and Parana. A formidable force of ten thousand men, in one hundred and sixteen vessels, and convoyed by twelve

ships of war, was sent out to sustain the authority of the new viceroy, Don Pedro Cevallos, a man who had distinguished himself, while Governor of Buenos Ayres, for his opposition to all foreign encroachment. His first movement was against St. Catharine, which surrendered with scarcely a show of resistance. He next sailed up La Plata to Colonia; it capitulated, the fortifications were destroyed, and the Portuguese driven from all their settlements on the eastern shore of La Plata.

The death of their sovereign, the retirement of Pombal, and the accession of the Princess Maria, who earnestly desired peace, checked these hostilities, and the treaty of St. Ildefonso, which finally settled all questions at issue between the two governments, was signed in the autumn of 1777. By its stipulations St. Catherine was restored to Portugal, who in return relinquished all her settlements in La Plata, and commissioners—among whom was Azares—were appointed to settle definitely their respective boundaries.

Spain now projected important commercial concessions to the colonies. Since 1759 some relaxations had been made from the old system, and in 1778, through the influence of Don Joseph de Galvez, at that time minister for the Indies, a new code was promulgated, known as the "Free Trade Regulations." This title did not impose upon the people, who saw that it was intended less to benefit them than to repair the injury to royal interests, which had suffered under the late system of monopoly. Manufactured goods were to be admitted for ten years free of duty, and in return the raw products of La Plata could enter nine ports of Spain exempt from tariff; but the trade was confined to Spaniards and Spanish ships, and not only the manufacture, but the culture of all articles that could interfere with those of the mother country were strictly prohibited; even the vicuña wool was to be sent to the royal factory of Guadalaxara. There was yet another heavy grievance: Creoles, or natives of the country, were perseveringly and entirely excluded from all places of trust and responsibility.

Spite of the sordid, shallow policy which had dictated these new laws, they were an advance upon the old system, and such commercial activity followed their promulgation that Buenos Ayres, as the mart of La Plata, became the most considerable city of Spanish America. So great was the tide of immigration into the country that in eighteen years the population had more than doubled; and the export of hides, the great staple, increased

from 150,009 annually to 700,000 or 800,000, and in 1783 it reached the amount of 1,400,000.

At the beginning of the nineteenth century such exaggerated reports had gone abroad of the disaffection of the colonists of La Plata to the Spanish monarchy as to induce an attempt on the part of the English to obtain possession of the country. In June, 1806, Sir Home Popham entered the river with a squadron of five ships of war and several transports, having on board a detachment of troops under the command of Major-general Beresford, who, on the 27th of the same month, with only 1630 men, inclusive of a battalion of 340 marines, landed and advanced upon the city of Buenos Ayres, which capitulated—the viceroy, Sobremonte, having previously retired to Cordova.

This success excited much enthusiasm in England. The public treasure taken was said to exceed one and a half million of dollars. Peru and her mines, the tropical regions of Paraguay, the pampas of Buenos Ayres, with their millions of cattle, were new fields to British enterprise; in short, an incredible conquest was achieved, and the people were represented as satisfied with the change of rulers. It was a brief triumph, and after-events proved that it could be attributed more to the force of surprise than to inability or courage on the part of the Portenos to defend their city. The people of the country rallied, and, led by Don Santiago Liniers de Bremont, regained possession of their capital only six weeks after the entrance of Beresford, who was in turn forced to capitulate, and, at the close of the year 1806, the village of Maldanado was the only possession of the English in La Plata. Re-enforcements soon after arrived under the command of Sir Samuel Auchmuty, who invested Montevideo, which, after an obstinate resistance, was carried by assault, February the 3d, 1807.

An attempt made the same year by General Whitelock, with 11,000 men, to retake Buenos Ayres was a complete failure, and issued in a convention, by which was stipulated the entire abandonment of La Plata in less than two months by the whole British force.

After General Beresford's attack, the colonists, in expectation of its being repeated by a larger force, had earnestly, but in vain, appealed for assistance to the mother country. This last unaided defense of the capital against an army officered by some of the best men in the British service, and the consequent retirement of the invaders from the waters of La Plata, first awakened them to a

consciousness of their own strength, and impressed a lesson of self-reliance more fatal to the Spanish empire in this quarter than the armies and fleets of England.

During the occupation of Spain by the French the first unmistakable evidences of disaffection were shown in South America, and Buenos Ayres stands prominently in the foreground of revolutionary movement. Three centuries of oppression under a crushing policy antagonistic to all their interests seemed to confer on the people a sacred right to better their political condition. After the abdication of Charles IV., and at the commencement of the struggle in the mother country, they had given striking proofs of allegiance to their royal house. In 1808 M. de Sastenay, the agent of Napoleon, was sent out to induce them to swear fealty to Joseph Bonaparte. His language was specious, and such as we might suppose he would address to a people prepared, as he thought, by a long political thraldom, to submit, with the hope of bettering their condition, to a change of rulers. "It would be better for them," he said, "to follow the example of their ancestors in the succession war, and await the fate of the mother country—to obey that authority which should possess itself of the sovereign power." What was their reply? The French envoy was placed under arrest, and Ferdinand VII. proclaimed successor to Charles IV. The same year another claimant appeared.

This was the Prince Regent of Portugal, who, on his arrival at Rio Janeiro, caused a note to be addressed to the Viceroy and Cabildo of Buenos Ayres claiming their allegiance upon the grounds of the alleged dissolution of the Spanish monarchy, and the rights accruing to his wife, the Princess Carlota, from the abdication of her father, Charles IV., and the captivity of her brother Ferdinand VII., threatening them, in the event of refusal, with hostilities from Portugal aided by her allies, the English. A spirited answer from the Cabildo quieted the action of the Portuguese pretender.

Don Santiago de Liniers had received the appointment of viceroy in reward for the gallantry with which he had headed the resistance to English invasion; but he was a Frenchman by birth, and, in the present excited state of feeling against his country, this was a crime. Accused or suspected of favoring the designs of Bonaparte became the excuse for demonstrations against his authority. Elio, Governor of Montevideo, convoked the inhabitants of the city, and established an independent junta. The Portenos,

in attempting the same, were promptly put down by Liniers, who sent their leaders to Patagonia.

After the abdication of the king the Supreme Junta of Seville recognized the colonies of Spain as "integral parts of the monarchy, with the same privileges as the states of the Peninsula," and yet, when they heard of the demonstrations against Liniers, they sent Cisneros (who was a weak, incompetent, vacillating individual—at best unfit for the office), without permission, to make good their own declaration, and without money or troops to support his authority. He found the people with an enormous accumulation of produce, and clamorous for the opening of their ports to foreign trade. Forced to accede to these demands, he declared at the same time that nothing but the "most urgent necessity could have induced him to adopt a measure so discountenanced by the laws of the Indies." Reports of a crisis in the affairs of Spain reached La Plata. Joseph Bonaparte was sweeping every thing before him; the "Supreme Central Junta" was dissolved, and replaced by a regency which gave little evidence of stability in authority. The power from which Cisneros had received his appointment was no longer in existence, and with its dissolution the dissatisfied colonists saw that the moment for the initiation of a more liberal policy had arrived.

The viceroy was informed that the order of government was about to be changed; the Supreme Court of Justice and the municipal authorities received the same announcement, which was followed by the immediate establishment of a provisional junta in the name of Ferdinand VII. Cisneros was even forced to become a member, and for a few days his name was appended to all orders issued to the troops and provincial towns to recognize its authority.

I have before alluded to one of the greatest grievances of the colonists, the monopoly by the Spaniards of all places of trust or emolument, which created so strong a feeling of dislike on the part of the creole or native population, that, according to Azara, it divided families, and even estranged husband and wife, where both were not of Spanish birth. Some of the inhabitants attempted to establish this influence in the Junta by naming Cisneros its president; a movement exciting much angry feeling on the part of the Creoles, who retaliated by arresting the viceroy and his adherents and sending them off in a small vessel the same night.

Although the political independence of the North American

colonies had been completely established, and the question of rights, which had agitated all the governments of Europe, may have found an echo in the hearts of many intelligent Spanish Americans; though the enfeebled condition of Spain exhibited but too glaringly the decadence of her political power; the action of the Provisional Government, even so late as 1815, in sending plenipotentiaries to Europe to solicit Charles IV. to come himself, or send his son, Don Francisco de Paulo, to assume the sovereignty of the country, shows that, though all were sincere in the desire to ameliorate their condition, there was a diversity of opinion as to the safest means of attaining this end, some still inclining to a monarchy, while others were for an entirely new organization, with a free system as basis. They were only a unit in the resolution never to submit to the authority of Ferdinand VII., whose only reply to their petitions for impartial government, after all the proofs they had given of loyalty to his person, was, upon his elevation to the throne, to call them rebels, and send fresh bodies of troops for their subjugation. The struggle was at last consummated by the assembling, July 9th, 1816, of representatives from all the provinces at Tucuman, where they drew up a declaration of independence.

Liberty achieved—at least so far as this action of the Congress at Tucuman could make it so—the sympathies that had united the different sections of La Plata were merged into local interests, and four governments were formed from the viceroyalty of Buenos Ayres—Paraguay, Alto Peru, or Bolivia, the Banda Oriental, and the United Provinces of La Plata, the latter composed of thirteen states, which, again, may be geographically divided into three districts: 1st, the Riverine Provinces on the Parana; Buenos Ayres and Santa Fé on the right bank, Entre Rios and Corrientes on the left; 2d, the Upper Provinces, Cordova, Santiago del Estero, Tucuman and Salta, Jujuy, Catamarca and La Riojo; 3d, west of Buenos Ayres and approaching the Cordillera of the Andes, San Luis, Mendoza, San Juan, and Rioja, which had been detached from the government of Chili.

Paraguay was the first province to assert her right to self-government; indeed, some years before the "declaration" of 1816, she was not only free from the authority of Spain, but had declared her independence of the other states of La Plata. Buenos Ayres sent an army under the command of Belgrano to assist her people in throwing off the Spanish authority, or rather to compel

them to join the general cause. Yegros and Cavallero, acting under the orders of Velasco, the last Spanish governor, defeated Belgrano, but soon after, almost without a struggle, succeeded in setting aside the authority of the governor and in asserting their complete independence, which was recognized by Buenos Ayres as early as 1811.

In the northwest the struggle in the southern hemisphere was prolonged, and it was not until after the battle of Ayacucho that Alto Peru was wrested from Spain and established into an independent government, taking its present name, Bolivia, from that of the hero of the Revolution, Bolivar.

I considered an outline sketch of the settlement and history of a country so little known as La Plata a necessary introduction to my narrative; but to penetrate the confusion of her political systems since the establishment of the republics would be a task of time and difficulty for which I am wholly unprepared.

Her unaided resistance of English invasion, the reception of M. de Sastenay, and the spirited reply of the Cabildo of Buenos Ayres to the pretensions of the Prince Regent of Portugal, a complete emancipation from Spain and freedom up to this time from any foreign influence which could affect permanently her political or territorial integrity, show at least a physical capacity for independent government. Again: unanimity of action in the first step of the crisis is the best evidence of the sincerity of the people in a struggle to improve their condition, though for many years there were elements of discordance and diversity of opinion as to the best means of attaining the desired end, that totally checked all social or political organizations. Pretenders to thrones, royal scions of the houses of Braganza, Orleans, Bourbon, were quite ready to establish dynasties upon that part of the American continent, and all may have found favorists among the perplexed revolutionists, for few really understood the first principles of civil liberty. The policy of Spain and the wide-awake spirit of the Inquisition had secluded them from a knowledge of the working of other systems; their moral energies had been corrupted; they were profoundly ignorant of political economy; there were no national materials, no previous struggles for enfranchisement; there was nothing in the traditions of the past; in the colonial system, not one principle of civil administration as a model or basis on which to construct a new fabric. It was a great ship afloat without rudder or compass. One of their own writers thus

alludes to the men who considered a monarchy expedient: "With them that notion did not originate in an intimate conviction; far otherwise. On the one hand, it arose from the want of individual capacity to prosecute the Revolution to its close, and after that to present the country with a stable and enlightened organization; and on the other, it was occasioned by the discomfort, or, if you prefer the term, the vexation which the tardy progress of the Revolution brought upon them."*

Ten years after the first cry of liberty was heard in Buenos Ayres, Spain could no longer degrade the United Provinces of La Plata by her enactments; but the swords that had repelled foreign invasion and avenged political wrongs became fratricidal. The provinces acknowledged for a time the governments successively established at Buenos Ayres, based upon a system of centralization, which gave the executive, who was to reside at that city, extensive civil and military jurisdiction, even to the appointment of governors for the provinces. But an opposition showed itself in a large party favoring a federation. The capital was invaded and the government or central party accused of aiming to establish a monarchy under the protection of France, with the young Duke of Lucca as its head; a charge followed by the publication of the correspondence of Don Valentine Gomez, their agent at Paris, containing the particulars of a scheme to that effect which had been proposed by the French ministry. The dislocation was general. What was before considered a nation subdivided itself into many independent states, each declaring its own independence. Province rose against province; cities, villages, families, individuals warred against each other. In the struggle the darkness of anarchy settled upon the new republic.

At last, in the first months of 1821, some light appeared in the re-establishment and consolidation of order in Buenos Ayres. Leaving the interior provinces to the control of their own leaders, the Portenos proceeded to form an independent government. In this effort they adopted a wise principle of action: "that all theory should be proscribed in the organization of a country, and its demonstration left to practice." By the stipulations of commercial treaties she, in this phase of her political existence, sought and obtained the support of foreign powers.

The interior provinces gained no strength by isolation. Their history presents nothing but a chronicle of desolating strifes, fac-

* Nuñez.

tions, endless intrigues of military chieftains and political aspirants, aiming at much, effecting nothing. It has been until very recently the struggle of a brave people, dreaming of free institutions, but grasping in the dark for their prosperity. It is true, the theory of liberty has found able advocates, who, in the elegant diction of the Spanish language, have with eloquence and fire expatiated upon its blessings in their legislative assemblies. Some of their military chiefs have shown genius, fertility of resource, and personal courage; but generally, in the history of their prominent men, we seek in vain for the patient, self-sacrificing spirit of the heroes of North American independence.

Sir Woodbine Parrish, who witnessed the progress of their political history for nearly a quarter of a century, says, in speaking of the interior provinces, "Without any defined league or general engagement among themselves, even to guarantee the integrity of the republic, or any thing like a Congress or representative body to watch over their common interests since the dissolution of that in 1827, they have been obliged to delegate to the executive government of Buenos Ayres, the sole and entire charge of their national concerns, their defense in war, the maintainance of their foreign relations, the management of the public debt, and of all matters of common interest to the republic at large, a trust which, in virtue of the unlimited power conferred upon General Rosas, the present Governor of Buenos Ayres, has become, *de facto*, vested, with all its duties and responsibilities, in one single individual, a strange ending of a struggle for Federalism."

Bolivia, an inland state, from her geographical position, as well as from the disturbances of political factions, has been deprived of all stimulus to commercial enterprise. Paraguay ended her struggle for civil liberty by submitting, in less than five years, to the dictatorship of Francia. The Banda Oriental, erected into an independent state in 1828, has been depopulated and desolated by civil contests, foreign occupation, and interference brought upon her by the intemperate conduct of her own chiefs.

I forbear to pursue the domestic or foreign policy of Rosas, a policy in contradiction to all theory or practice of constitutional government. But there was a spirit of intelligence in the country he governed, dormant but not annihilated; a leader of ability and integrity was alone needed to give it activity. This individual appeared in the person of Justo J. Urquiza, Governor of Entre Rios and Corrientes, a man of admitted military genius, and known

at one time as an able supporter of Rosas, but who, at last, disgusted with his administration and moved by noble and enlightened views for the future of "La Plata," raised the standard of opposition. The Governor of Buenos Ayres was in the habit of resigning his authority at stated periods, upon the score of broken health or age, relying, and for a long time with success, upon his knowledge of and influence over the members of the assembly, none of whom dared accept the proffered resignation. They generally urged his retention of office with adulatory expressions which were duly published and sent forth to foreign powers as expressive of the public voice. On one of these occasions, Urquiza, by proclamation, released Rosas from executive responsibilities, and placed himself at the head of a party favoring the opening of the rivers of La Plata to commerce, and the union of the states composing the "United Provinces of La Plata" into a confederation.

The rivers which have their rise in the northwestern provinces of Brazil give access from the Atlantic to a large and valuable part of her territories. Their free navigation is essential to her interests, and to obtain this concession from Rosas she had in vain exhausted the arts of diplomacy. The traditional antagonism of Spaniard and Portuguese was now merged in the policy of union for the purpose of opening the Parana, Paraguay, and Uruguay, with their tributaries, to the commerce of the world. Urquiza found a powerful ally in Brazil.

Their first combined movement was against Oribe, who had, with troops partly furnished by Rosas, held Montevideo in a state of siege until a town, "Restoracion," of eight or ten thousand inhabitants had actually grown up around his encampment. But for the interference of England and France, who recognized and supported the inside party, the city would have fallen into his hands. A considerable body of Entre Rians and Corrientinos, under the command of Urquiza, a Brazilian squadron in the river, and a force of infantry and artillery under Baron Caxias, at last brought Oribe to terms, almost without striking a blow. Consummate address marked the conduct of Urquiza. He proclaimed, on entering the country, a desire to avoid the shedding of blood. His mission, he announced, was patriotic. Thousands joined his standard. Deserted by whole detachments of troops, with but a limited supply of provisions, and cut off from both the resources of the interior and river by the allied army and Brazilian squadron, Oribe surrendered unconditionally.

Thus, after a siege of nine years, the relief of Montevideo was accomplished, and Urquiza withdrew to his own province only to prepare for a more direct blow at the power of Rosas. In January, 1852, he recrossed the Parana at the head of a large force, and without encountering opposition reached Monte Caseros, within fifteen miles of Buenos Ayres, where he was met by the Dictator at the head of an army of twenty thousand men. The great battle of the 3d of February, 1852, ended in the total defeat and flight of Rosas, and secured the future independence of the Argentine States.

The Dictator sought and obtained the protection of an English man-of-war in the "Roads;" Urquiza, at the head of a large body of cavalry, infantry, and artillery, made a triumphal entry into the city, established his head-quarters at Palermo, and appointed Don Vincente Lopez, a man advanced in years, but greatly beloved and respected for his intelligence and amiability, Governor of Buenos Ayres.

On the first of May Urquiza was named "Provisional Director," and the 25th of the same month the governors and delegates of fourteen provinces assembled at St. Nicolas for the purpose of forming a government. As a manifestation of respect for the United States, General Urquiza invited our representative, the Honorable John Pendleton of Virginia, to accompany him to San Nicolas, where on the 1st of June the delegates from the Argentine States agreed upon the terms of a provisional administration, and a Congress to convene at an early day and form a constitution for a permanent federal government. A copy of the proceedings of this convention was put into the hands of Mr. Pendleton upon the day of their passage, by the order of General Urquiza, that he might send it by dispatch to Buenos Ayres, so as to arrive before the departure of the British mail-packet. The messenger was authorized to say that no other government had been thus favored, and that it was the desire of the Provisional Director to signify by this act a special consideration for the United States of America.

On the 14th of June General Urquiza returned to Buenos Ayres, to find the city in turmoil and confusion, arising from the disaffection of the members of the Provisional Assembly (the "Sala"). Grave exceptions were taken to the proceedings of the Provisional Congress at San Nicolas, and among them the most prominent was, that too much power had been conferred by it upon the Provisional Director. Don Vincente Lopez, who had represented the

Province of Buenos Ayres, appeared before the Sala, and attempted to defend his course, but he was hooted at and hissed. He resigned his position as governor of the city, and political affairs assumed rather a gloomy aspect. Either a new convention must be called to revise the proceedings of the Provisional Congress, for the pacification of the Sala, or its disaffection must be arrested; in other words, either the thirteen provinces must be governed according to their own provisions or by those of the Sala at Buenos Ayres.

General Urquiza was not the man to deliberate long as to which of the two courses he should adopt. The Sala, without soldiers or money, and an enraged populace at its back, adjourned in confusion, and the Provisional Director, with the strong arm of the military to sustain him, restored order by banishing five leading members, and reappointing Vincente Lopez governor. He then withdrew the forces from the city, dispatched them to the various provinces from which they came, leaving only the military of the Province of Buenos Ayres to defend their own capital, and retired on the 8th of September to Santa Fé, where the convention charged to prepare a constitution for the Confederation had met August the 20th. This Congress was composed of two delegates from each of the thirteen provinces, Entre Rios, Corrientes, Santa Fé, Cordova, Mendoza, Santiago del Estero, Tucuman, Salta, Jujuy, Catamarca, Rioja, San Luis, and San Juan.

Many exiles who had joined Urquiza for the purpose of putting down Rosas, but without any intention of elevating the former to the same position, now took advantage of the withdrawal of the troops to conspire against his authority, and, being natives of Buenos Ayres, drew to their side a number of the people and soldiers of the province. Their opportunities to create a revolution were ample, and their plans and designs well conceived and ably executed. It broke out on the 11th of September, and General Galan, at the time acting as governor by appointment of the Provisional Director, retired with such of the troops as remained faithful. The insurgents made a pretended pursuit, but neither fight nor skirmish ensued, and the "Director," informed by rapid expresses of the events that had occurred, marched without delay at the head of such troops as were at Santa Fé, and joined General Galan at San Nicolas.

His first impulse was to advance against Buenos Ayres, but of this he thought better, and, issuing a proclamation, in which he

announced his determination to leave that city to its own course, he returned to Parana to await the action of the Congress.

The ruling spirits of the Revolution were not content to be let alone, or quietly remain the citizens of an independent state. They wished to break up the Confederation by sowing broadcast the seeds of discord in the western provinces. Failing in this, they dispatched the best part of the force at their disposal under the command of Generals Madariaga and Honos to invade Entre Rios. Urquiza assembled a large body of troops, and led them in person to meet the invaders, who were defeated and driven from the province.

Here, then, collecting an army of twelve thousand men from the different states, he marched once more against Buenos Ayres, and, in conjunction with General Largos and a small naval force consisting of three steamers, a brig, a three-masted schooner, and several smaller vessels, besieged and blockaded the city and harbor. Such was the condition of political affairs in La Plata when the Water Witch arrived at Buenos Ayres.

APPENDIX.

APPENDIX A (PAGE (26).

INSTRUCTIONS FROM HON. JOHN P. KENNEDY, SECRETARY OF THE NAVY, TO THOMAS J. PAGE, LIEUTENANT COMMANDING.

BY a decree of the Provisional Director of the Argentine Confederation, the long-sealed and excluded country lying upon the tributaries of the Rio de la Plata has been thrown open to navigation, and the Uruguay and Parana have become accessible to all nations who may choose to seek the new associations which they offer to the spirit of adventure.

The importance, in a commercial point of view, which is attached to this new field of operations has invited the enterprise of our country as well as of other nations; and, with a view to gratify and please the emulous ambition of the nation, and to secure the great advantages of its trade, the President has directed a small steamer to be dispatched to the La Plata for the purpose of exploration and survey of the upper streams above their falls, and to which service you have been assigned in command of the United States steamer "Water Witch."

The principal objects to which your attention is directed are to explore the rivers Plata, Paraguay, and Parana, and all their tributaries worthy of exploration; to determine the practicability of navigating them, their course, extent, productions in fish, etc.; to examine not only the country bordering on the rivers, but also, to some extent, the interior beyond the water-courses, so as to acquire correct information touching the nature and extent of agriculture, and, consequently, the probable extent to which commercial intercourse may be desirable; to make collections for the advancement of knowledge in natural history, botany, mineralogy, and other departments of natural science; to make astronomical, meteorological, and magnetic observations; to determine latitude and longitude, and to make a series of sketches in Daguerrean and camera impressions illustrative of the scenery, Indians, and geological formations of the country.

Although the primary objects of the expedition are the promotion of the great interests of commerce and navigation, yet you will take all occasions, not incompatible with the great purpose of the undertaking, to extend the bounds of science, and promote the acquisition of knowledge.

No special directions are thought necessary in regard to the mode of conducting the researches and experiments which you are enjoined to prosecute, nor is it intended to limit the officers who accompany you each to a particular sphere; all are expected to co-operate harmoniously in all the details of the expedition.

You will adopt the most effective measures within your control to prepare and preserve all specimens of natural history that may be collected, and, as opportunities offer, send them to the United States to be delivered to the Secretary of the Navy, in order that they may be lodged for safe keeping at the Smithsonian Institution. You will also avail yourself of such occasions to forward copies of charts, details of your doings, duplicates of specimens, or any other materials you may deem it important to preserve from the reach of future accident, at the same time strictly

prohibiting all communications, except to the Department, from any person under your command referring to any circumstances connected with the progress of the enterprise.

Among savage nations, unacquainted with or possessing but vague ideas of the right of property, the most common cause of collision with civilized visitors is the offense and punishment of theft. You will therefore adopt every possible precaution against this practice, and in the recovery of stolen property, as well as in punishing the offense, use all due moderation and forbearance.

You will permit no trade to be carried on by any under your command with the countries you may visit, either civilized or savage, except for necessaries or curiosities, and that under express regulations to be established by yourself, in which the rights of the natives must be scrupulously respected and carefully guarded.

You will neither interfere, nor permit any wanton interference, with the customs, habits, manners, or prejudices of the natives of such countries as you may visit, nor take part in their disputes except as a mediator, nor commit any act of hostility unless in self-defense, or to protect or rescue the property of those under you, or those whom circumstances may place within reach of your protection.

You will carefully inculcate on all who accompany you that courtesy and kindness toward the natives which is understood and felt by all classes of mankind; to display neither arrogance nor contempt, and to appeal to their good-will rather than to their fears, until it becomes manifest that they can only be restrained from violence from fear or force.

You will on all occasions avoid risking the officers and men unnecessarily on shore at the mercy of the natives. Treachery is one of the invariable characteristics of savages, and very many of the fatal disasters which have befallen the navigator and explorer have arisen from too great reliance in savage professions of friendship, or overweening confidence in themselves.

It is the nature of the savage to remember benefits, and never to forgive injuries; you will therefore use your best endeavors, wherever you may go, to leave behind a favorable impression of your country and countrymen.

The expedition is not for conquest, but discovery.

Its objects are all peaceful; they are to extend the empire of commerce and of science, in which all enlightened nations are equally interested, and we have a right to expect the good-will and good offices of the whole civilized world.

You will bear in mind that though you may be carried beyond the sphere of social life and the restraint of law, yet the obligations of justice and humanity are always and every where equally imperative, in your intercourse with men, and most especially savages; that we seek them, not they us; and that, if we expect to derive advantages from the intercourse, we should endeavor to confer benefits in return.

You will carefully refrain from the exercise of undue prejudice or partiality toward any under your command.

An observance of strict impartiality toward all will best promote the harmony and efficiency of the expedition.

On entering any harbor, or meeting with any public vessel bearing the flag of a nation in amity with the United States, you will be careful to observe the usual courtesies. You will enjoin all under your command to abstain from violating the commercial or municipal laws or regulations of the places they may visit, and to avoid, as far as possible, giving any the least ground of complaint. The policy of the United Sates is avowedly pacific, and, while studious to maintain the honor and guard the interests of their country, it is the duty of its officers to abstain from violating the laws or rights of other nations, and, by conciliating the good-will and fa-

vorable opinion of the people they may visit in the course of the cruise, to strengthen the bond of commercial intercourse, and increase the disposition to more intimate relations.

Should any violation of the persons or property of American citizens be committed or attempted, you will seek reparation or restitution by persuasive yet firm measures; and you will not resort to force unless in the last extremity, and when no doubt can exist that right and justice are on your side.

The maintenance of discipline is an object requiring your unwearied solicitude. The character of our country is only known and judged by remote and savage tribes, and even by semi-civilized nations, by the personal deportment of its officers, who are, to a certain extent, its representatives. The high standard which is within their reach, and should be the aim of every one, is the best calculated to command respect and confidence from all with whom intercourse is held.

All officers are enjoined by law, by regulation, and by regard to their own honor to maintain, in all respects, a correct deportment toward superiors, inferiors, and equals. A general observance of this salutary rule will render each one more happy in his own person, more zealous in the discharge of his duty, and more useful to the service of which he is a member.

You will not allow any under your command, if you can prevent it, to incur debts and leave them unpaid in any port or place they may visit.

If any be heedless of this order, you will report the circumstance to the Department.

It is hoped and believed that every officer associated with you will zealously cooperate with you in preserving the strictest discipline.

In conducting the exploration intrusted to you it may be found necessary to call to your aid means which can not be provided for in a small steamer of the capacity of the "Water Witch," such as horses, mules, and other resources for the transportation of small parties for shore operations, you are therefore authorized to employ all such means as you may deem essential to accomplish the objects of the expedition, keeping in view at all times the security and safety of your officers, crew, and vessel, and a rigid economy in your expenditures.

You will communicate your proceedings at regular intervals direct to the Department, forwarding a duplicate of each letter by the earliest opportunity to be found after the original shall have been transmitted.

* * * * You will report by letter to the Commander of the United States Squadron on the coast of Brazil, as a part of his command, but assigned to special duty under the orders of the Department, with which he will not interfere except under the most imperative circumstances, and he will be instructed to furnish such aid and facilities as you may require in conducting the exploration.

APPENDIX B (PAGE 29).

CORRESPONDENCE OF MESSRS. SCHENCK AND TROUSDALE IN RELATION TO THE EXPLORATION OF THE PARAGUAY.

This and the following letter are introduced to show the grounds on which their author advocated the application for permission to explore the Brazilian waters:

Mr. Schenck to Señor de Souza.

Legation of the United States, Rio de Janeiro, August 20, 1853.

The undersigned, Envoy Extraordinary and Minister Plenipotentiary of the United States, desires to recall the attention of His Excellency Paulino José Soares

de Souza, of the Council of His Majesty the Emperor, Minister and Secretary of State for Foreign Affairs, to an application which was made to the imperial government a few months ago.

On the 26th of April last, in the absence of the undersigned, a note was addressed to his Excellency by Mr. Coxe, the Secretary of this Legation, inclosing a copy of a letter from Lieutenant Thomas J. Page, of the United States Navy, commanding the United States steamer "Water Witch," a vessel which had just then arrived in this port on her way to survey the River Plate and its various tributaries. The object was to obtain the friendly co-operation of the imperial government in aid of that expedition, by orders to the authorities of those of her provinces in which are any of the navigable waters of the rivers to be explored.

In reply to this note, on the 4th of May, his Excellency was pleased to say that the imperial government, having opened to foreign commerce, in the River Paraguay, the port of Albuquerque, would make no objection to Lieutenant Page carrying his explorations to that point, but would send the necessary orders to the President of the Province of Matto Grosso, and to other imperial agents, that they might give him all the co-operation in their power; but that the imperial government, not having yet opened to foreign nations other ports above Albuquerque, and not having yet agreed as to the navigation of those rivers with other riverine states, could not permit foreign vessels to enter them, and thus establish an example and precedent which might be prejudicial to the empire, the right of navigation of those rivers not having been settled.

This correspondence was immediately communicated to the commander of the expedition, who had already proceeded to the River Plate; and the answer of the imperial government and the license thus accorded are duly appreciated.

But the undersigned, being then upon the eve of going himself on his special mission to the La Platine States, had little opportunity to advert to the limitations and qualifications of the permission expressed.

On reflection since and now, the undersigned has believed it proper to state to his Excellency that the limited privilege, conceded in answer to the request, is not as liberal as the United States and their agents had a right to expect from a government as enlightened as this. It can scarcely be that the restriction as to the point to which the imperial government is willing, on its part, that the "Water Witch" should ascend the River Paraguay, and the refusal altogether to permit her to enter other rivers, would be insisted on if the nature and objects of the expedition were fully understood and considered.

Otherwise the undersigned is unable to comprehend why such an enterprise, purely national in its character, projected for a simple and peculiar purpose, and that purpose the advancement of science, should have been put upon a footing with individual commercial pursuits, and subjected to reasoning that can apply only to ordinary voyages. Nothing is proposed which could be regarded as an example or precedent for the voyage of a merchant or trading ship, or even of a vessel of war only.

To remove any possible misapprehension, however, the undersigned will now repeat that the "Water Witch" has been commissioned and fitted out expressly for an exploration and careful survey of the River Plate and its tributaries; that the officers and crew have been selected and detailed with a view to that specific and only duty; and that, in short, the object is one purely scientific, looking to the examination of all that may be interesting in the productions and capabilities of the countries bordering upon their waters; and also, and more particularly, to an accurate sounding of the channels to ascertain their fitness for navigation by steam-boats and other vessels.

And as the history and results of this exploration and survey—the descriptions and charts which may be produced—will be made public to the world, for the common information of all, surely not the least interest and benefit may be expected to accrue to those governments and their inhabitants who have possessions through which the different rivers flow. No questions of rights of navigation or transit can possibly be involved in this work.

But the undersigned will not argue the subject farther. If, with this simple explanation repeated, the expedition thus sent out by the United States does not at once commend itself to the good wishes and favor of Brazil to the fullest extent, but if, on the contrary, she interposes objections to its objects being pursued in any case above a certain point on one of the rivers, because she has opened nothing beyond that or elsewhere on the streams within her jurisdiction to foreign commerce, he can only regret that he must report so unexpected a disposition of the imperial government to his government at home, who will not fail to contrast it with the prompt, cordial, and unrestricted encouragement and aid which have been extended to the enterprise by the other states and territories having possessions on the different rivers in question.

In the confidence that, upon a reconsideration of this subject, a farther and more favorable and liberal answer to the application will be made by his Excellency, the undersigned avails himself of the occasion to renew to his Excellency the assurances of his high respect and distinguished consideration. ROBERT C. SCHENCK.

To His Excellency Paulino José Soares de Souza.

Mr. Schenck to Señor de Abreo.

Legation of the United States, Rio de Janeiro, September 21, 1853.

The undersigned, Envoy Extraordinary and Minister Plenipotentiary of the United States, has the honor to acknowledge the receipt of note No. 28, dated the 16th instant, from his Excellency Antonio Paulino Limpo de Abreo, of the Council of His Majesty the Emperor, Minister and Secretary of State for Foreign Affairs, in reply to that which was addressed by the undersigned to the predecessor of his Excellency on the 20th of August last, in relation to the scientific and exploring expedition sent by the government of the United States, under the command of Lieutenant Page, into the waters of the River La Plata and its tributaries.

The undersigned regrets to learn from his Excellency that the imperial government persists in its determination not to consent that the steamer "Water Witch," commissioned for this survey, shall be permitted to ascend any of the rivers within the territory and jurisdiction of Brazil, except the River Paraguay, and that river only as far as the port of Albuquerque.

This resolution of the imperial government appearing to be decided and final, the undersigned does not propose to repeat or enlarge farther upon the reasons and suggestions which he has before presented for consideration, and which he supposed might have elicited a different answer. He will content himself with communicating to the President of the United States an account of the application which it has been his duty to make to the national authorities of Brazil, and the want of success which has attended that application. The sovereignty of Brazil must, of course, be fully recognized; and any rule that she may think proper to establish will be respectfully observed by the United States, in regard to that portion of any river which, having its sources within her territory, flows entirely within her jurisdiction.

And the undersigned would not now deem it necessary to extend the correspondence on this subject, or to reply to the note of his Excellency, but for the farther remarks of his Excellency which accompany the communication of this decision.

His Excellency observes that the undersigned is perfectly aware that, above the port of Albuquerque, there is no other in the River Paraguay which has been opened by the imperial government to foreign commerce. That from this arrangement it results, as is obvious, that to no foreign vessel can the river be accessible above that port. That this was a principle established in very clear and express terms by decree of the imperial government, No. 1140, on the 11th of April of this year. And that the argument, therefore, that the "Water Witch," of which Lieutenant Page is commander, has for its sole object to explore the River Paraguay and its tributaries, can not avail, in the opinion of the imperial government, to change in favor of that vessel the general principle which that decree established, and which would be abandoned by the ascent of the "Water Witch" beyond the port of Albuquerque. Admitting the premises, the undersigned can not yet assent to the conclusion arrived at by this reasoning. It seems to him a *non sequitur* that the exclusion of "foreign *commerce*" should shut out from the privilege of a higher ascent of the river a national vessel, engaged in no commercial pursuit or enterprise whatever, but sent by a friendly power upon the peaceful and disinterested errand of scientific exploration and survey. But the undersigned recognizes the full right of the imperial government to give interpretation to its own decrees, and is only led into this comment on the position taken, because his Excellency has seemed, from the form of expression used, to appeal to the undersigned to admit the justice and the logic of the proposition, which the undersigned is unable to do.

His Excellency informs the undersigned, however, that the resolution of the imperial government does not prevent such explorations as the commandant of the steamer may be instructed to make in the River Paraguay and its tributaries above the port indicated, but that for this purpose he can employ boats of the country, which he will easily find there. And it is added, that there are reasons for supposing that these boats will be the best adapted for the ascent of the River Paraguay beyond Albuquerque, which will perhaps not be practicable for the "Water Witch."

The undersigned duly appreciates this explanation of the action and views of the imperial government, and thanks his Excellency for the suggestion as to the manner in which the objects of the expedition may be accomplished above the point in question. His Excellency's note will be communicated to Lieutenant Page, who is charged with the service, and that officer will exercise his discretion, under such instructions as he may receive from the government at Washington, in regard to pursuing the survey in the way proposed to him. At present, and perhaps for the next year or two, the surveying and mapping of the lower parts of the Parana and Paraguay, and of the Rivers Pilcomayo and Vermejo, will sufficiently occupy his attention. It is not probable, however, that he will at any time avail himself of a permission, on the Paraguay, to employ the boats of the country as recommended; for the undersigned begs leave to state that the government of the United States has not sent out such an expedition without providing all the necessary means for its prosecution. Lieutenant Page has with him not only all the boats that would be ordinarily supplied for carrying out properly the examinations and surveys to be made, but has been furnished also with the boilers, engine, and machinery for the construction of a small steamer, with a draught of only a foot or fourteen inches, by means of which those waters and channels may be sufficiently explored and measured which may be found too shallow to admit a vessel as large as the "Water Witch." This small auxiliary steam-boat Lieutenant Page is now about building and putting together, it is understood, at Assumpcion, in Paraguay. As to the doubt expressed whether the "Water Witch" herself could ascend above Albuquerque, the undersigned must be permitted to remark that that is a question to be determined

only by one of those practical experiments which are among the objects of the expedition.

The undersigned appreciates and has pleasure in acknowledging the expression of the sentiments of friendly consideration which are entertained by the imperial government toward the government of the United States, and the assurances that orders shall be repeated that the commandant of the "Water Witch" may not fail of any co-operation or aid which he may need for the accomplishment and happy issue of the duty intrusted to him. The undersigned, in behalf of his government, sincerely reciprocates these friendly sentiments; and avails himself of the occasion to renew to his Excellency the assurances of his perfect esteem and distinguished consideration. ROBERT C. SCHENCK.

Mr. Trousdale to Lieutenant Page.

Legation of the United States, Rio de Janeiro, August 8th, 1854.

Lieut. Thomas Jefferson Page, Commanding U. S. Steamer "Water Witch."

SIR,—I received your communication, without date, through Robert G. Scott, Junior, Esq., Acting Consul of the United States at this port, on the 1st of July last, and on the 3d of that month I addressed a note to the Secretary of Foreign Relations of the Government of Brazil, inviting the attention of his Excellency to the correspondence of my predecessor, the Hon. Robert C. Schenck, with the Secretary of Foreign Relations on the subject of the exploration of the tributaries of the Rio de la Plata, and asking again the sanction and co-operation of the imperial government to the expedition of the "Water Witch," and the privilege of ascending the River Paraguay to the head of navigation.

I am now in possession of the answer of the imperial government to that note, as furnished through the Secretary of Foreign Relations, from which it appears that, on more mature reflection, the imperial government has granted the privilege asked for, of exploring the River Paraguay to the head of navigation, and has given instructions to the President of the Province of Matto Grosso, and the other agents of the government in that quarter, to facilitate the expedition to the full accomplishment of the original design; herewith inclosed you will find copies of my notes to the Secretary of Foreign Relations, and of his answers, marked A[8], B[8], C[8], D[8].

I am, sir, very respectfully, your obedient servant, W. TROUSDALE.

Inclosures.

A[8]. Mr. Trousdale to Foreign Office, July 3d, 1854.
B[8]. Foreign Office to Mr. Trousdale, August 2d, 1854.
C[8]. Mr. Trousdale to Foreign Office, August 4th, 1854.
D[8]. Foreign Office to Mr. Trousdale, August 7th, 1854.

Mr. Trousdale to Señor de Abreo.

Legation of the United States, Rio de Janeiro, 3d July, 1854.

The undersigned, Envoy Extraordinary and Minister Plenipotentiary of the United States, has the honor to inform his Excellency Antonio Paulino Limpo de Abreo, of the Council of his Majesty the Emperor, Minister and Secretary of State for Foreign Affairs, that it has become his duty to invite the attention of the government of Brazil to the subject of the exploration of the tributaries of the Rio de la Plata, and to bring the question of the privilege of ascending the River Paraguay to the head of navigation again to the notice of the same, and to solicit once more the approbation and co-operation of the imperial government to that enterprise. This subject has been ably presented by my predecessor in repeated communications

to the government of Brazil, to which the attention of his Excellency is particularly invited; the undersigned deems it useless at present to attempt farther argument on the subject.

It will be remembered that the expedition on which the "Water Witch" has been ordered by the President of the United States has purely for its object the advancement of commerce and promotion of science; and the enterprising commander of the "Water Witch," Captain Thomas Jefferson Page, having advanced as far, in the discharge of his arduous duties, into the territory of Brazil as that government has consented to co-operate with said exploration, it now becomes necessary to ask the Brazilian government to co-operate with this enterprise to its consummation, by at least extending the facilities heretofore given to the termination of the navigation of the Paraguay.

The undersigned hopes for an answer at an early day, and renews to his Excellency the assurances of his high esteem and distinguished consideration.

(Signed) W. TROUSDALE.

To his Excellency Antonio Paulino Limpo de Abreo, etc., etc., etc.

Legation of the United States, Rio de Janeiro, 4th August, 1854.

The undersigned, Envoy Extraordinary and Minister Plenipotentiary of the United States, presents his compliments to his Excellency Antonio Paulino Limpo de Abreo, of the Council of his Majesty the Emperor, Minister and Secretary of State for Foreign Affairs, and has the honor to acknowledge receipt of his Excellency's communication of the 2d instant, which contains the information that his Majesty the Emperor and the government of Brazil, to whom the note of the undersigned of the 3d ultimo had been presented, which asks the privilege for the United States steamer "Water Witch" to explore the River Paraguay to the head of navigation, and to obtain the sanction and co-operation of the government of Brazil to the full accomplishment of the original design of that expedition, had consented to the objects asked for in said note, on the condition that the undersigned should reply to the communication of his Excellency of the 2d instant, confirming the statements made by the Hon. Robert C. Schenck, in his notes to the Secretary of State for Foreign Affairs of the government of Brazil, on the subject of the exploration by the steamer "Water Witch" of the tributaries of the Rio de la Plata.

The undersigned will here state that he has not been furnished with a copy of the instructions given by the President of the United States to Lieutenant Thomas Jefferson Page, commanding the United States steamer "Water Witch," in relation to the exploration of the tributaries of the Rio de la Plata; all the information the undersigned has on that subject is obtained from the statements of others: The letter of Lieutenant Thomas Jefferson Page to Ferdinand Coxe, Esq., Secretary of Legation of the United States at the Court of Brazil, of the 26th April, 1853, in which he states the expedition has purely for its object the advancement of commerce and the promotion of science; Mr. Coxe, in his note of the same date, 26th April, 1853, to the Secretary of Foreign Affairs, speaking of Lieutenant Page, says: "This officer has been ordered by the President of the United States upon the highly interesting and important duty of exploring and surveying all the rivers running into the La Plata, and it is not doubted that the results of the expedition will be of the highest importance to the commercial and scientific world." It will be seen that Mr. Schenck, in his communication to the Secretary of Foreign Affairs, of the 20th August, 1853, uses this language: "Otherwise the undersigned is unable to comprehend why such an expedition, purely national in its character, projected for a simple and peculiar purpose, and that purpose for the advancement of science, should

have been put on a footing with individual commercial pursuits, and subjected to reasoning that can apply only to ordinary vessels;" and, again, Mr. Schenck, in his note to the Secretary of Foreign Affairs, of the 7th October, 1853, speaking of the action of the government of Brazil, says: "She will therefore not consent that the steamer 'Water Witch,' sent by the United States on a purely *scientific* expedition, shall ascend above that point;" and, again, Lieutenant Thomas Jefferson Page, in a late communication to the undersigned, speaking of the refusal of the Imperial government to permit him to explore the tributaries of the Rio de la Plata, says: "It can not be the fixed, determined object of the government to arrest an expedition having for its object solely the promotion of *science*."

From the foregoing statements the undersigned feels authorized to say that the object of the expedition of the "Water Witch" in the tributaries of the Rio de la Plata is intended to promote the cause of *science*, and should not be construed into a precedent for vessels of either war or commerce to navigate those streams.

The government of the United States will duly appreciate this act of kindness and friendship toward it by the government of Brazil, and it will doubtless strengthen the cords of friendship which now bind together those governments.

The undersigned hopes for a speedy consummation of this matter, and avails himself of this opportunity to renew to his Excellency assurances of his high esteem and distinguished consideration. (Signed) W. TROUSDALE.

To his Excellency Antonio Paulino Limpo de Abreo, etc., etc., etc.

APPENDIX C (PAGE 59).

FROM THE DISPATCHES OF MR. ROBERT C. SCHENCK, UNITED STATES MINISTER TO BRAZIL, ON THE POLITICAL EVENTS THAT TOOK PLACE AT THE TIME OF GENERAL URQUIZA'S ABANDONMENT OF THE SIEGE OF BUENOS AYRES.

By my last dispatch you were informed that I had returned here, bringing the two treaties which Mr. Pendleton and I have had the good fortune to conclude with the Argentine Confederation. I send them now, with other original papers, as follows:

1st. The Treaty of San José de Flores, for the free navigation of the rivers Parana and Uruguay, made July 10th, 1853; accompanying which is a Notice of the Ratification of the same, on the 12th of July, by General Justo José de Urquiza, the Provisional Director.

2d. The Treaty of Friendship, Commerce, and Navigation, made at San José, July 27th, 1853; accompanied by the Certificate of Powers of the Plenipotentiaries of the Confederation of the same date; and the Notice of Ratification by the Provisional Director, on the 30th of July.

In the case of the Treaty of San José de Flores, there was but one general power given to the Argentine plenipotentiaries, authorizing them to treat alike with the United States, Great Britain, and France; and as there could not be an exchange with each, the original was left in custody of the French plenipotentiary.

It would not be necessary to add much to what has already been reported to you of the circumstances attending our negotiations and the signing of these treaties.

On my arrival at Buenos Ayres, on the 21st May last, I found the city in a state of close siege and blockade. The conferences between the two belligerent parties, which were initiated and conducted under the auspices and mediation of the ministers of Brazil and Bolivia, had been broken off; and I was accordingly disappointed in my expectation of finding peace, and with it the government of the Confederation established and prepared to treat. For two months the prospect of making

my mission effective seemed to be no better; and, at the close of June, I had determined and was prepared to return to my post here, abandoning for the present all idea of a treaty, general or special, and leaving farther negotiations on the part of our government to a more promising time, and to whomsoever might be hereafter appointed to the duty.

But just at that contingency I obtained such reliable information of a crisis at hand as induced me to change my purpose, and I resolved to remain another month. I became satisfied that in the new aspect of affairs would be found the first and best opportunity that was likely to present itself for concluding treaty stipulations, which should not only embrace, as far as the United States were concerned, the general provisions for reciprocal commerce and friendship, but that with these, or in advance of these, might be obtained the great object of the special missions of England and France, as well as what we sought ourselves—security for the free navigation of the rivers. To this latter object particularly, in conjunction with the British and French ministers, we first applied ourselves, and the result is the treaty of the 10th of July.

So far as the Argentine Confederation is concerned, or has jurisdiction in the rivers La Plata, Parana, and Uruguay, not only the principle, but the fact is now fixed and perpetual.

A free passage for the commerce of all the world on those waters will no longer depend on laws or decrees, which may be repealed, or even on a constitutional provision, which may be changed, but is safe henceforth under the solemn guarantees of international contract.

A similar treaty precisely in all its terms was signed on the same day by the plenipotentiaries of Great Britain and France.

Mr. Pendleton has already given you an account of the base and treacherous transfer of the blockading squadron of the Confederation by Coe, their chief naval commander; the disastrous influence that that surrender had upon the besieging army, and other particulars of the course of events, which led General Urquiza to determine finally to abandon all farther forcible measures toward Buenos Ayres. It is sufficient, with reference to our diplomatic duties and services in the midst of these occurrences, to state that we had to go back and through the lines of the belligerent parties, with such degree of safe-conduct as their passes and escorts could secure to us, seeking actively and discreetly as we could to provide for the interests we had in charge, and not always, perhaps, without exposure to some little peril. It was, in truth, a duty somewhat anomalous, and in proportion exciting, for a civilian to be engaged in.

The mediation which was undertaken by Sir Charles Hotham, the Chevalier St. Georges, and myself, at the instance of both parties, has been also explained to you; and its abrupt conclusion, the final breaking up of the siege, the retiring of Urquiza with the troops of the Confederation, and the dispersion of the outside chiefs of Buenos Ayres.

General Urquiza, as Provisional Director, with approval of the Constituent Congress, took at length the course which should have been, I think, his policy, and the policy of the Thirteen Provinces, from the beginning—that was to leave Buenos Ayres to herself, to unite or not with them as she might elect under the Constitution.

It was in this view of the subject that we mutually agreed with the Provisional Director that the time had come for treating with the Confederation under his auspices.

Buenos Ayres may deny, in her present anomalous position, refusing as she does to be represented in the Constituent Congress, that treaties thus made are binding upon her. I have no apprehension, however, that she will to the end continue to

disregard their obligations. But if she should attempt to do so, she will be ultimately, and soon, in one way or another, compelled to abide by them.

She is either in the Confederation or out of it. If in it, she must be made to conform to its international duties; if out of it, and hereafter recognized as a separate nationality, she will be constrained, by the opening of the rivers and ports above, and for her own self-preservation, to enter into similar treaties on her own account.

The time has passed by when a single state or province, upon her pretensions of her superior wealth, and population, and strength, can dominate over all others, obstructing their progress, and hindering the friendly relations they would establish with other countries. She will learn, of necessity, the republican lesson of political equality with her sister provinces, and that she must not expect them to submit to no organization but one which would leave all the power and rule with her.

I may here add that the Constitution (so identical almost with our own) which was adopted at Santa Fé, and submitted, through the Provisional Director, to the people of the provinces for their acceptance, has been received enthusiastically every where out of Buenos Ayres; and I presume that the next step of the Constituent Congress which framed it, and which remains in session until the complete organization under it, will be the appointment of a day for the election of President and Vice-President.

Urquiza will undoubtedly be elected President, if he is willing to acept the office. His elevation to that position will confirm still more the hostility of Buenos Ayres. But she would be almost equally averse to the election of any one, being a native and resident of an interior province.

But, leaving these speculations as to the future of the Confederation, I present, with brief remark, the treaties as we have actually made them, and which, I trust, will receive the sanction of the President and the Senate.

The treaty of San José de Flores is a success, you will observe, quite exceeding what Mr. Webster, in his instructions to me of the 28th of April, 1852, expected we should be able to accomplish. It was hardly hoped then that a negotiation for the free navigation of the rivers could terminate thus favorably.

This treaty embodies the principle of General Urquiza's decree of the 3d October, 1852; and will be in entire accord with Article 26, first part of the Constitution of the Confederation. The constitutional declaration is in these terms:

"Article 26. La navigacion de los rios interiores de la Confederacion es libre para todas las banderos, con sujecion unicamente á los reglamentos que dicta la autoridad Nacional."

It was at first objected, on behalf of the Confederation, that this provision of their constitution removed the whole subject from the treaty-making power, and would leave it only within the jurisdiction of the Congress. The legislative power, it was claimed, could alone be the national authority to prescribe the needful regulations for such free navigation.

After much discussion we overcame this position, by satisfying the plenipotentiaries as to what must be the interpretation of their own constitution, to wit, that treaties regularly concluded, either by the present Provisional Executive, or made by the President and approved by Congress, after the organization under the constitution, are to be taken, as in the United States, as "the supreme law of the land;" and that "regulations" established by treaty must be considered as much sanctioned by "national authority" as if enacted in the shape of statute law. This radical and essential point was yielded to us upon the argument which was devolved upon me to make in behalf of the three powers.

I do not know that more than one or two of the particular articles or clauses of this treaty require comment. The others all clearly explain themselves.

Article V. is an important stipulation. The Island Martin Garcia being at the head of the River Plata, and commanding the whole channel by which vessels must pass to and from the mouths of the Parana and Uruguay, an unfriendly power in possession of that point might obstruct the whole navigation. Hence the necessity of some guard against such possible interpretation. The Province of Buenos Ayres at present claims and holds the island.

Mr. Pendleton and I would not agree, on behalf of our government, to any stronger obligation of resistance than is conveyed by the phrase "use their influence." That is an expression which will admit of great latitude of interpretation. Some such clause, however, in the treaty, you will at once perceive, was essentially necessary for its certain efficiency.

So far as the Confederation is concerned, it is to be fairly claimed, I think, that the ratification of this treaty, as well as that subsequently made at San José, is complete. But General Urquiza, at the same time that he, in the exercise of his plenary powers as Provisional Director, was willing to give, and has given his absolute confirmation to them both, has yet, out of respectful deference to the Congress, whose sanction will be required to treaties made under the constitution which is so soon to come into force, declared also his purpose to submit these to the approval of that body.

This explanation might remove some ambiguity that you might otherwise find in the respective ratifying clauses.

Our co-operation with the British and French plenipotentiaries ceased after the execution of the River Treaty.

Mr. Pendleton proceeded, as he has informed you, on the 22d of July, to Entre Rios, to procure our farther negotiation on account of the United States alone. The treaty we agreed on there, on the 27th, is substantially the same as that which Great Britain at present enjoys, hers being made in the time of Rosas at Buenos Ayres; and France has intrusted the duty of endeavoring to obtain a similar one to a new Minister Plenipotentiary, who had just arrived in the river at the time of my leaving.

You will find that in all the articles there is no material alteration in any respect from the ordinary form and provisions of these reciprocal treaties which we were instructed to adopt. In some parts only I sought to simplify, condense, and make a little clearer, and trust I, in some small degree, succeeded.

In one important particular, however, we have obtained an advantage quite beyond any thing secured in other treaties of this class. This with the Argentine Confederation is perpetual. Considering the principles of reciprocity established by it, and the comparative amount of commercial and other interests of the two countries and their citizens to be benefited in their relations with each other, our government has all the gain, and loses nothing by the absence of any limitation of time.

It is not probable that such a perpetual treaty would have been obtained by us now, but from the fact that the existing treaty with England is without limit.

But we have not found General Urquiza, or any of those associated with him in the present government of the Confederation, disposed to prefer any other country or its interests to those of the United States. Indeed, there is entertained for us, I may say, a decided partiality. They look at present with especial interest for the public opinion of our people upon the experiment they are about to make with our Federal Constitution.

In the journey made by Mr. Pendleton and myself to Entre Rios, to meet General Urquiza and conclude the general treaty, we were received and entertained with marks of the most distinguished and flattering respect to our country. We were made at all points the guests of the government; the American flag was dis-

played at every opportunity; and, in short, every testimonial and attention exhibited which could indicate the high consideration in which we were held as representatives of an admired nation.

Mr. Pendleton being unfortunately taken sick by the way, and unable to proceed farther than Gualaguaychu, I had to go on to San José and agree upon the treaty alone; but General Urquiza kindly and promptly met this difficulty by sending a confidential messenger back with me, a distance of seventy miles, to bring and take the copy for the Confederation, so that my colleague should also have opportunity to affix to it his seal and signature.

This partiality toward the United States is more to be regarded, when it is considered that the recent treachery of our countryman Coe, and the very reprehensible conduct in that connection of one of our naval officers of high rank, and perhaps of other American citizens, had tended, just at that time, to excite a prejudice to our general disadvantage and discredit.

I have thought it not impertinent to the subject of my dispatch to mention this continued favor toward our government and people, as it may avail something hereafter to cultivate and encourage such a disposition for the benefit of American commercial and other interests that may be expected to spring up and increase in that quarter.

I must not close this dispatch without bearing testimony to the very friendly cooperation that Mr. Pendleton and I have had throughout the negotiations with Sir Charles Hotham and the Chevalier St. Georges, the British and French Ministers, in all that related to the objects and interests of our three governments that were in common.

We found both those gentlemen on all occasions liberal and frank in the highest degree. I believe it will be admitted all around that we labored together, when it was necessary or expedient, with joint and mutual benefit.

I desire also to express to you a very high sense of the important services rendered to us by Lieutenant Thomas J. Page, commanding the United States steamer "Water Witch." Without his various services in carrying General Urquiza and his staff when they retired from Buenos Ayres; in conveying Mr. Pendleton and myself afterward to Entre Rios, and other duties which he with his ship was able to perform, I hardly know how we could have succeeded in bringing our negotiations to a successful conclusion. The presence of the "Water Witch" for several weeks at that particular juncture was invaluable; and all her movements strikingly exemplified the necessity of having a vessel of her kind and class, on almost all occasions, on the River Plate.

Will you please communicate to the Secretary of the Navy this expression of our appreciation of the services of Lieutenant Page.

I have the honor, etc.

ROBERT C. SCHENCK.

APPENDIX D (PAGE 59).

MEMORANDUM AS TO THE "PROTEST" OF BUENOS AYRES AGAINST THE TREATY OF SAN JOSE' DE FLORES (5TH SEPTEMBER, 1853), BY ROBERT C. SCHENCK, MINISTER PLENIPOTENIARY.

The first thing that demands attention in this paper is the extremely unfair, uncandid, and, in some particulars, false statement which is made in regard to the circumstances existing at the time the treaty was signed.

My government has already been informed as to the history of the mediation

which was conducted under the auspices of the Ministers Plenipotentiary of England, France, and the United States, and of the condition of affairs which attended the withdrawal of General Urquiza from the siege, and his retirement to Entre Rios. It is not necessary to repeat that history. But it is well to remark how studiously the government of Buenos Ayres attempts to confuse and mix together matters which have no connection.

The understanding in regard to the retirement of General Urquiza, for the reasons stated in his proclamation, and without obstruction, was one thing; the terms which should be made with General Lagos and the provincial troops outside, was altogether another affair. General Urquiza, by the arrangement that had been made, was at liberty to retire, and might have retired with all the forces of the other provinces unmolested at any time for two days before he did go. But he magnanimously remained to see what agreement the two Buenos Ayrean parties, inside and outside, were going to make between themselves, what terms would be granted to General Lagos, if he would raise the siege, and what he would accept. General Urquiza apprehended that if he were the first to go with the troops of the Confederation, the city would not keep faith with Lagos. And the result proved that there was but too much reason to doubt the sincerity of the inside party. For myself, I had no confidence in the ministers of the inside from the beginning; and I thought General Urquiza was right in waiting as long as he did for the event. The delays that were interposed, day after day, to avoid a final arrangement, were resorted to by the city party, I believed then, and am certain now, only for the purpose of exciting doubt and disorganization among the troops outside, and not with any intention of making a fair and honest peace.

It is false to say, as their "Protest" does, that the mediating ministers were at the Government House in the city on the 13th of July, laboring to make terms for the safety of General Urquiza. The question as to General Urquiza's movements was disposed of. They were then only trying to adjust the terms of peace to be made with Lagos and his provincial force. It is equally untrue the statement that that long interview was broken up by news of the abandonment of the siege by Urquiza and Lagos. The discussion was protracted by Torres and his fellow-ministers, and every sort of new delay and objection interposed by them, to the surprise of the mediating ministers, after every point as to Lagos and his chiefs had been the day previous substantially agreed upon and settled. But before that interview was over, the terms in relation to Lagos and his provincial force were at last signed by the Buenos Ayrean ministers, and not communicated that night to him only because it was too late. The departure of General Urquiza was not known by the mediating ministers nor heard of in the city until next morning; nor did they learn until then of the breaking up of the siege of Lagos.

General Lagos took that course evidently yielding to the disorganization of his forces produced by the delays and false dealing of the inside government—delays cunningly and basely resorted to after every thing had been virtually and in good faith arranged.

I have not a doubt but that while the mediating ministers were discussing for hours the plan of an honorable peace with the ministers of the city on the 13th, at that very time the authorities were sending out the reports, which became current in the camp, that the mediating ministers had confederated with General Urquiza to betray Lagos and his troops.

I will not, however, as I said, repeat this history. It is only of any consequence to refer to it again, because it shows that General Urquiza, in making the treaty, acted under no such imminent danger, or apprehension, or in any such state of alarm

as this "Protest" imputes to him. If there was any truth or good faith in the inside party, he had no cause to feel any apprehension on the day the treaty was made, for his understanding with them was already complete, and they had gladly concurred in the arrangement that he should retire, with the troops of the Confederation under his immediate command, in the foreign men-of-war. In order to make it otherwise appear now, they are forced to deny and discredit their own propositions and solemn promises. They had even three days before requested of General Urquiza, through the mediating ministers, as a favor, that when he did withdraw to Entre Rios he would go up the River Uruguay instead of the Parana—a request which he had acceded to as suiting his own purposes.

But, suppose it were true that General Urquiza was beaten, defeated, driven from Buenos Ayres, how could that affect the validity of the treaty he had made? It does not in the least touch the question.

This "Protest" proceeds throughout on the mistaken assumption that a government negotiating with the Argentine Confederation is going to take notice of the domestic broil or civil war existing in Buenos Ayres, one of the provinces of that republic. But that is wholly an affair of their own. It matters not whether the war was between different parts of that province or different portions of its people; or between that province and the rest of the Confederation.

Buenos Ayres is not known to foreign powers in this question. She has never, in fact, separated herself from the Confederation, and declared her independence; and if she had done so, the recognition of her nationality is an act and right which belongs exclusively to governments. And until such recognition has been made, either by her own government or the government to which the province belonged, we are bound to consider her ancient relations as unaltered. This principle has been distinctly declared by an American judicial court, in Gelston *versus* Hoyt—3 Wheaton, 324.

It is of no consequence whether the Provisional Director, when he made his treaty, was marching out of that province, or into that province, or had never been near that province at all. It is of no consequence whether Buenos Ayres was at peace within her own borders, or distracted by war; or at peace or at war with the rest of the Confederation. We have nothing to do with those domestic affairs.

The question is, *Whether we have a treaty with the Argentine Confederation?* Not "*What the Argentine Confederation is?*" Buenos Ayres may belong to it, or not belong to it; be bound to its treaties, or not bound; and so may any other province. Those are questions to be considered hereafter.

But the "Protest" says that General Urquiza was not a free agent, but was acting under compulsion when he treated.

The best answer for that is that General Urquiza still adheres to the treaty, and has ratified, and asks for it the approbation and sanction of the Congress of the Confederation. And the constituted authorities of the national government under the Constitution will probably be as well satisfied with it as the Provisional Director. He reported the whole negotiation and its conclusion to the Constituent Congress; and his communication, with exact copies of all the treaties, was published in full in the *Nacional*, the official newspaper at Parana, the capital of Entre Rios, on the 22d of August. It was through that publication that the authorities of Buenos Ayres must have possessed themselves of the copies which, with so much parade, they pretended to have "discovered" on the 31st of August. *Discovered* a secret plot against Buenos Ayres in the public newspapers! It really seems that they can not be otherwise than disingenuous about every thing.

The sympathy for General Urquiza, in the coercion and abuse of his situation to which it is pretended he was subjected, seems to be entirely uncalled for.

Besides, to show that there was no surprise or imposition on the Provisional Director, it must be remembered that he had been, for almost a year before, considering the making of this very treaty.

All the terms of it, I am informed by the English and French plenipotentiaries, had been virtually agreed to with them months previously to its being concluded; and two weeks before he had signified to me his willingness to make a treaty with the United States, in the very words of this which was signed.

But the "Protest" objects that General Urquiza had no power to treat.

It is rather late to claim now that General Urquiza did not represent the Confederation in its foreign relations, when such powers had not only been conferred upon him by the *Acuerdo* of San Nicetas, and confirmed subsequently by the Congress of Delegates at Santa Fé, in which thirteen of the fourteen provinces were represented, but when he had been actually exercising such functions in repeated ways and instances. He concluded a treaty, by his plenipotentiary, with Paraguay on the 15th July, 1852. He received these very ministers of England, France, and the United States, who signed the treaties of San José de Flores, in July and August, 1853—ministers who came with letters of credence, and with powers to treat on the very subject of this treaty—the free navigation of the rivers. Buenos Ayres had no objection to make to his powers then. It is with her now evidently an after-thought.

But Buenos Ayres complains that she was not represented in the Congress which confirmed the powers of the Provisional Director. That is a pity; it is, perhaps, her misfortune. The *other* thirteen provinces were all there; and, it seems, by the adoption of a constitution, that the Argentine Confederation will go on even without her concurrence, notwithstanding Buenos Ayres is impressed with the idea that that is impossible!

It is to be hoped, however, that so important a member of the Confederation as she is will reconsider her ground, and not hold out any longer in her anomalous position. It is desirable that she could continue in the republic, because, in addition to other advantages, her capital city will be a convenient and suitable place for the federal capital.

It is pretended that the powers of the Provisional Director have ceased with the adoption of the Constitution. If that were admitted, it would follow, as a consequence, that there is *no* government of the Confederation; because the elections for President and Congress, under the Constitution, not yet having taken place, there has been nobody to whom the provisional government could surrender its powers.

It is, on the contrary, obvious that the provisional government—that is to say, the provisional directorship, continues in the person of General Urquiza, or some one else; or else there must be some other form of government to represent the sovereignty and nationality of the republic until the organization shall have taken place under the Constitution.

There is no force in the objection that the 5th article contains an agreement in regard to the Island of Martin Garcia, and is void, because that island belongs to Buenos Ayres, and *she* was not consulted. Admit, for the sake of argument, that the island is her territory; and also admit (which she does not dare to claim) that she is no longer in the Confederation; even then the agreement about it is good *between the parties to the treaty.*

Did not England and France invite the United States to enter into a treaty in regard to the Island of Cuba? and yet Cuba belonged to neither of the contracting parties; and, more than that, the very object of such a treaty was that it *never should* belong to either. The government of the United States did not in that case decline because there was any doubt about its power and right, or the power and

right of the other parties to treat upon the subject, but because it did not suit our policy to tie up our hands, or to be drawn into any such negotiation about that island.

The Protest says that the 6th article would deprive Buenos Ayres of her right of blockade, in time of war with any nation on the river above her. Not at all. This article expressly recognizes the right of blockade and search, in proper cases, by declaring what articles of a cargo shall be considered contraband.

But "a blockade to be acknowledged as valid must be confined to particular ports, each having a force stationed before it sufficient to interrupt the entry of vessels." Such is the law of nations; and it is only intended by this article that neither Buenos Ayres nor any other state, under claim of right of blockade, shall shut up the rivers and stop the commerce and navigation of all the countries above; but shall be confined, in the exercise of her hostile right, to a strict and legitimate blockade of the particular port or ports of the nation with which she may be at war.

The pretense that this treaty was made merely as a means by which General Urquiza might avenge himself on Buenos Ayres, does not deserve notice or reply. Nor will I answer the base insinuation that the ministers of the three governments bargained for the treaty with General Urquiza, as the condition of their acknowledging the blockade of the port of Buenos Ayres, farther than by reference to the fact that that blockade was recognized as legitimate, in May, not by the diplomatic agents, but as a question pertaining to them by the naval commanders, not only of England, France, and the United States, but also of Brazil, Sardinia, Spain, and all other countries having vessels of war on the station.

The declaration of Buenos Ayres that *she* first opened the rivers to free navigation by her law of the 18*th October*, 1852, is a mere impudent pretension. It is such a statement as could only be expected in a paper which represents the squadron, sold by the traitor Coe, as "having gone over and submitted voluntarily to the orders of the Buenos Ayrean inside party, simply because it recognized the justice of that cause."

The fact is that General Urquiza, to whom the world is indebted for his liberal policy, after the fall of Rosas, made the first decree opening the rivers on the 28*th of August*, 1852; and afterward confirmed that again by his other decree made at Parana, *October* 3*d*, 1852. And this last mentioned decree was issued, as declared in the preamble to it, "in view of the opposition taken by the Province of Buenos Ayres," that is because Buenos Ayres had shown a disposition to obstruct that free navigation.

But whether the rivers are open or not—by decrees of Urquiza, by the law of Buenos Ayres (and how could her *sala* legislate for the waters of the whole Confederation?), or by the declaration contained in the Constitution of the Confederation; in either case, there was still the same necessity for a treaty. *Now* this free navigation will not be subjected to changing legislation, amendments of a constitution, revolutions, or caprice of the Confederation, or of any of its states; but it is established and perpetually secured by solemn compact between sovereign nations.

And here I would stop. But, looking at the treaties as published with this "Protest," I can not forbear calling attention to another small matter—a petty trick and cheat to which these Buenos Ayrean ministers have descended, in order to make it seem that General Urquiza was usurping a title and office which could only be conferred under the Constitution. They have falsified the ratifying clause in each of the treaties by substituting the word "President" (*Presidente de la Confederacion*) for "Provisional Director" (*Director Provisario*).

Rio de Janeiro, 1853.

APPENDIX E (PAGE 137).

EXTRACTS FROM THE REPORT OF LIEUTENANT POWELL ON HIS TOUR THROUGH THE YERBALES OF PARAGUAY.

The general plan adopted for the execution of my instructions was to take the sides of an imaginary triangle, one angle of which rested at the city of Asuncion, another among the "Yerbales," near the town of San Estanislado, and a third at the town of San Cosmé on the River Parana, as the route of travel to be followed as nearly as practicable, to fix the important features, astronomically or by bearing and distance, to collect specimens of productions, and to show the present condition of the country.

The party under my charge for this service consisted of two of the crew of the Water Witch and a native, who acted as guide and Guarani interpreter. Our means of transportation were horses, one of which carried, as a pack, two tents, cooking utensils, etc. The instruments consisted of a sextant and artificial horizon, a pocket-chronometer, a compass, a mountain barometer, and thermometers. The chronometer and compass were carried upon my person, the barometer on that of the guide.

These arrangements being completed, we left Asuncion on the 31st of May, 1854, and commenced our route to the northward and eastward for the Yerbales. Following this route as shown by the map, we spent our first night out at the village of Lugue, thence passed on to the more considerable town of Ytagua.

Leaving Ytagua on the 7th of June, we passed around the head of the Lake Ypacaray, and after visiting the villages of Atira, Tobaty, and Caraguatay, reached San Estanislado on the 17th, where we were hospitably received and comfortably housed by the Juez de Paz, Don José de Ricaldi.

A glance at the map shows the Lake Ypacaray lying between the slight sierras of Paraguayri and Piraju. It is a beautiful sheet of water of twelve or thirteen miles in length and from one to three miles in width. It receives its waters from the neighboring sierras and the valley to the eastward, and discharges them into the Paraguay through the little river Salado. Herds of cattle graze upon its banks, but its surface is only disturbed by numerous wild fowls, and its depths as yet only sounded by the nutria, the alligator, and other of its indigenous occupants.

The face of the country between the Sierra of Piraju and the River Aguay is generally low, and, though interseced by the considerable stream of the Piribeby and some small tributaries of it and the Aguay, is not sufficiently well drained to prevent its being wet and sometimes marshy, except about the occasional wooded knolls which rise from 50 to 75 feet above the general level. The villages of Atira and Tobaty, situated on the slope of the Sierra of Piraju, are but small collections of indifferent Indian huts, standing around their little churches and inhabited by remnants of the once numerous Guarani tribe.

The town of Caraguatay contains 120 houses, and upon our entering it on the morning of the 9th the people were celebrating a "fiesta," in honor of the re-election to the Presidency of his Excellency Don Carlos Antonio Lopez, and I estimated the number in the place at one thousand. So many of these crowded around the tents as to prevent me from using the instruments or doing any thing else than gratify their curiosity, and to force me to surrender at discretion and await a better time. By meridian of the 12th I found but three families in it. The "fiesta" was over, and they all had returned to their usual residences in the neighboring country.

The River Aguay was only about thirty yards wide, and, like most of the other

streams of this low section of the country, has but little current, though the depth was such as to make it necessary to swim our horses and pass the luggage in canoes. As shown by the map, it discharges into the Paraguay; and near where we crossed it there was in course of construction a large raft of timber, to be floated down to Asuncion.

On the northern bank of the Aguay lies the estancia of the state, Ygazauri, which is one of many large tracts of land, stocked with cattle and horses, owned by the state, and managed, under the direction of the government, by a capitaz and his assistants. In extent it is said to be twenty miles square, and the stock upon it number eighty thousand head. The number of cattle owned by the government of this country on these different estancias is estimated at one million.

Between the River Aguay and the Sierra of San Miguel lies the Estero of Aguaracaty, an extensive marsh in which are lost several considerable streams, among which is the Rio Hondo.

As we advanced over Ygazauri our route lay over marshes and through lagoons, in which the mud and sand was frequently above the girths of our saddles, causing considerable difficulty in our progress and great fatigue to our horses. At the distance of five miles from the Hondo we reached the estancia of the state, San Miguel, situated on the slope of the sierra of that name. And, having passed over this sierra, we found the face of the country between that and San Estanislado broken and uneven, and the forest growth diversified by the palm.

Having learned that the nearest yerbales at which work was being carried on at the time were thirty miles distant in the mountains, I determined to visit them, accompanied by a guide, who acted as interpreter. After a ride of twenty-five miles over a fair mountain road we reached the Yerbale of Santa Rosa, where we were welcomed to his ranch by the *patron*, Don Falkencia Periedo, who hospitably supplied us with the best he had, and to whom I am indebted for most of the following information relative to gathering and preparing of the "Paraguay Tea."

The *Yerba Maté*, or *Ilex Paraguayensis*, is, as designated by its botanical name, a shrub of the same class as our holly. Its Spanish name is derived from the word *maté*, a gourd, in which it is prepared as a beverage. It is found in the sierras of the northern part of this and in similar localities of the neighboring countries. Considerable quantities of it, as prepared for commerce, are now used in the different countries of South America. That of Paraguay is most esteemed, and is one of the principal articles of her export trade. The rethe lands in which the yerbales are found belong to the state, and the trade in it is a government monopoly.

It is gathered and cured, sometimes under the superintendence of the government officials of the departments in which it is found, at others by private individuals who receive permission to work it on prescribed conditions. When worked by the officials the workmen are drafted from the neighborhood, as if for any other public work, and are paid in cured yerba or in goods, such as wearing apparel, etc., with which the government keeps itself supplied for such purposes, and on which it gains the usual percentage. When worked by individuals the general rule is to allow them one third of the yerba cured, they paying all expenses.

On commencing the work of gathering and curing the yerba, the patron or superintendent selects his location—having in view the quantity of the material and the facility of transportation—and erects the necessary buildings, consisting generally of a shed of fifty or sixty feet in length for storing the goods, provisions, etc., that he may have and the yerba that he collects, a number of small huts as dwellings for the workmen, and the *barbracuas*, or frames upon which the material is dried. The former are constructed in a rude manner and thatched with dry grass. The latter

are more firmly constructed of poles and withes, are in size fifteen or twenty feet square, have arched or angular roofs, and firm even floors made of clay, extending six or eight feet beyond the frames on all sides, for the convenience of pulverizing the material after it is dried.

Near each barbracua is erected (if there is no tree convenient for the purpose) a stand from which the *uru*, or foreman, may watch the drying material and go to the top of the barbracua to make such changes in its disposition as he may deem necessary. The yerba sometimes reaches the size of a tree, growing to the height of twenty-five or thirty feet; but in collecting it for curing, the bushes of from six to twelve feet in height, and from one to two and a half inches in diameter of stem, are preferred. These, having been passed through the flames of a fire built near the place of cutting for the purpose, are stripped of their half-dried leaves and tender twigs, which are then carried to the barbracuas to be thoroughly toasted.

For the purpose of transportation the *raydo* (a net-work of hide thongs of four or five feet square, having long thongs to pass over the leaves and twigs upon it, and secure at its diagonal corners) is used, and is carried upon the head and shoulders of a workman. Having been struck by the quantity carried by one man in this manner, I had the packed raydo weighed as it was taken off of the carrier, and found its weight to be fourteen Spanish arobas, of twenty-five English pounds each, or three hundred and fifty English pounds.

The half-dried material is carefully placed over the top and partly down the sides of the barbracua, in quantities of from fifty to one hundred arobas, and in such a manner as to permit the heat to reach every part of it. A fire, from which the object is to get heat with as little flame and smoke as possible, is then built under it, and taken charge of by one of the workmen. The foreman mounts the guard-stand and the other workmen go to the collection of more half-dried leaves and twigs to take the place of those now being toasted. From thirty-six to forty-eight hours, the fires being kept up from daylight to 7 or 8 P.M., are occupied in the toasting process.

If it rains upon the material upon the barbracua, it is necessary to repack and dry it again. And yerba which has been so made is not considered good for preservation, and is never sent to the government agents for shipment, but is sold for home consumption.

The toasting process being completed, the fire is removed, the floor swept off, and the dry material, being worked through the frame, falls to the floor, and is pounded with wooden instruments in the shape of wood swords, until reduced to the condition of a coarse powder, and gradually removed to the store-house as it becomes so.

The yerba is packed in hide bales, made by cutting the edges of a raw hide even, moistening it, doubling it lengthwise, and sewing up the sides with hide thongs. The packing is done by putting in small quantities at a time while the hide is moist, settling it well with a heavy wooden pestle, and gradually closing the open end, until the bale will contain no more. The hide then contracting as it dries, adds to the compactness of the whole, and it is ready for transportation. These bales are termed *tercios*, and those made of the larger hides contain two hundred English pounds. The workmen are paid at the rate of 25 cents the aroba for the cured yerba, as it is brought from the barbracua, and a packer gains about six cents the aroba, the hide being found by the employer.

Having passed 24 hours at Santa Rosa, I returned to San Estanislado, accompanied by the Señor Periedo, and on June 24th, it being the Feast of St. John, we had a grand *fiesta*. The chief amusement of the day was horse-racing, which appeared to be entered into with considerable spirit by the crowd, though the bets rarely went beyond a silver dollar. The horses were but ordinary in appearance or speed, and

were ridden generally bare-back and with the *riendas*, which consist of a simple pair of leather reins secured by a leather thong to the lower jaw of the horse. This form of bridle is the ordinary one of the country, and I noticed that those who ordinarily used an iron bit preferred running their horses with the riendas.

Our route to the River Tibiquari-Mini, lying within the edge of the series of sierras and mountains which, commencing with those of San Miguel, Ymbutuy, and Cauguazu, stretches over toward the River Parana, presented a great variety in the face of the country passed over. Until we reached San Joaquim it generally varied from deep grassy valleys to bluff wooded sierras. After leaving Yhu it was more regularly high and rolling, well covered with grass, and having large clusters of woods scattered over it. Throughout this portion of our route there is but a thin population, the uneven and broken country between San Estanislado and Yhu offering but few advantages for agriculture, and the grass country beyond Yhu not affording a sufficiency of saline matter in the composition to keep cattle in a healthy condition.

At the estancia of Don Manuel Antonio Vera, however, distant fifteen miles from San Estanislado, we found a fine crop of sugar growing, and also a mill for grinding the cane. This mill, as the representative of the only kind of labor-saving machinery known in the interior of the country, deserves some notice here. It consisted of three wooden cylinders of about five feet in length and two and a half feet in diameter, set perpendicularly and in a line in a frame, so as to revolve horizontally. On the head of the middle cylinder, which projected above the frame-work, was set with a mortice one end of a pole, which was inclined to the ground at such an angle as to admit oxen or horses to be attached to the other end, as the motive power. This cylinder communicated motion to the other two by means of cogs and mortices. One of the outer cylinders was set at such a distance from the middle one as to take in the full-sized cane and crush it; the other somewhat closer, so as to give it a second pressure. Near the mill was a shed, under which several large copper kettles were set in stone-work for boiling the juice.

In this simple manner quantities of sugar and molasses are made in different parts of the country. And the adaptation of the soil and climate of the greater part of Paraguay to the production of this article of commerce is undoubtedly very good.

Having reached the village of San Joaquim, I handed my letter of introduction from the Señor Ricaldi to the jefe, who kindly put a good house at my disposition, and, requesting that I might make known any farther wants I might have, excused himself from being much with me, as he was very busy in preparing an expedition for cutting a road from that place to the Parana, in order to collect some information of that portion of the country for his government, and more particularly to endeavor to discover the valuable yerbale of Carema, which had been lost in the time of Francia. San Joaquim contains about thirty houses, and the inhabitants are all Indians, except the jefe and his household.

Leaving San Joaquim on the 6th, in company with Padre Sosa, who had again joined us, we went to Yhu, another Indian village rather smaller than San Joaquim, but numbering rather more whites in its population. Here my friend the padre, who had to say mass on the morning of the 8th at San Joaquim, took his final leave of us on the 9th.

After leaving Yhu we found our route leading over a different "water-shed," the streams now all passing off to the eastward and paying tribute to the Parana. Upon reaching the considerable stream of Taruma we met a party of fifteen men, which the jefe of Yhu, Señor Alonzo Benites, had collected here to show us the mode of hunting the venadillo—a small deer of the country—with the bolas.

The temptation was strong to join this party, as it started at full speed in pursuit of a herd of deer watching us from a little distance, and compare the carbine with the bolas. But a reflection upon my chronometer and traveling-horse determined me to move on with the train, and to be satisfied with occasional sights of the chase from a distance.

By sunset we had reached the stream of Guirahugua and pitched the tents upon its banks, at a sufficient distance from a neighboring wood to be able to guard the horses from the jaguars, which are here the lords of the country, it being uninhabited by the Paraguayans and only occasionally visited by the Indians of the mountains to the eastward. The tracks of these animals crossed our route in every direction, and frequently they were so fresh, or the animal lying concealed so close, that the horses would start back at the scent, and it was with considerable difficulty that we could force them by some parts of the route. The stealthiness of the animal is such and the undergrowth so thick that though constantly on the look-out for a shot I did not get a clear sight of one of them. The jaguar often preys upon horses and cattle, and sometimes attacks a man, but boldness not being one of its characteristics, such prey is only attacked by surprise.

On the evening of the 9th, I had an opportunity of letting the guide compare the rifle and the bolas. The deer were plenty around at a distance, and my dog was standing partridges every fifty or a hundred yards. After several ineffectual efforts to get a shot at the deer, which were alarmed by the size of our party, I got within fifty yards of two of them, and, firing my rifle, one of them fell. The guide, upon examining it, found that the ball had entered just back of the left ear, and passed out of the right eye. He was consequently very strongly impressed with the effect of the rifle, and the skill with which it was used.

The village of Cauguazu we found to be a recent settlement—the church having been finished in 1852—and containing but seven houses. It was a penal settlement, too, most of the inhabitants having been forced to it, in carrying out one of the means which this government uses for settling the wild portions of its territory; which is to make such individuals or families as have offended against the laws of the older communities move out of them, and establish new ones in such places as it may designate. Leaving Cauguazu on the evening of the 10th, we passed that night with the Jefe Don Diego Villaba, about two miles from the village, in order to effect an exchange of another broken-down horse for a mule of one of his neighbors, which was done by paying nearly the value of the mule in money.

Making an early start on the 11th, we passed through the "Monte Caugauzu," an elevated piece of wooded land of fifteen miles in extent, by the road, and which effected a change in the water-shed in our route again; the north fork of the River Tibiquari-Mini crossed near its southern limit, having its course to the westward. This is a stream of twenty yards in width, and having considerable current.

Some five miles farther on we reach the main body of the Tibiquari-Mini, which is seventy-five or eighty yards wide, and which the guide pronounced to be in such a condition as to make it necessary to swim the horses over, and pass the luggage in canoes. Our trouble in preparing for this we found to be useless however, and, having lost some time at it, encamped for the night on a rich grass-plain a short distance from the southern bank.

After leaving the Tibiquari-Mini we found ourselves again in the low lands, the face of the country between it and the town of Villa Rica being variegated with rich grass-plains and slightly elevated hills; the latter were ornamented with quite thickly scattered houses and their *chacras*, in which were cultivated principally tobacco and mandioca, of which this section of the country gives an abundant yield, while over the former were seen numerous herds of fine cattle and horses.

APPENDIX F (PAGE 274).

NOTES FROM COMMANDER PAGE TO MR. JOSE' FALCON.

Asuncion, Paraguay, Sept. 28, 1854.

The undersigned, lieutenant commanding the United States steamer Water Witch, has the honor to inform his Excellency José Falcon, Minister and Secretary of State of the Republic of Paraguay, that he has received from the Envoy Extraordinary and Minister Plenipotentiary of the United States to the Court of Brazil, a communication informing the undersigned that his Imperial Majesty has conceded the privilege to the U. S. steamer Water Witch to ascend and explore the upper waters of the Paraguay River, and those tributaries within the dominions of the empire of Brazil. Accompanying the communication above referred to is a copy of the correspondence on this subject between his Excellency the Envoy Extraordinary and Minister Plenipotentiary of the United States, William Trousdale, and his Excellency Antonio Paulino Limpo de Abreo.

The undersigned desires to bring this subject to the notice of his Excellency, and indulges the hope that his Excellency the President of the Republic of Paraguay, actuated by the same enlightened policy as that which has influenced his Imperial Majesty, will concede to the undersigned the privilege of passing in the Water Witch through that portion of the territory of Paraguay which lies between Asuncion and the territory of Brazil.

Your Excellency is aware that the object had in view by the explorations of the Water Witch is to extend the bounds of science and geographical knowledge. To the attainment of this end, the undersigned feels assured that his Excellency the President of Paraguay, will grant every facility.

The undersigned appends an extract from the note of his Excellency Antonio Limpo de Abreo, of the 7th August, 1854, to his Excellency William Trousdale, Envoy Extraordinary and Minister Plenipotentiary of the United States.

"A vista pois da Segurança que da o Señor William Trousdale, o abaixo assignado tem a houra de communiciar the, em reshosta a sua Nota de 4 de instuieções ao Presidente de Provincia de Matto Grosso, para permittir e felicitar as explorações do Commandante do Water Witch no rio Paraguay, acima de Albuquerque e nos suis tributarios, que perteren ao Brazil."

The undersigned requests an answer at an early day, and takes the occasion to renew to his Excellency the assurances of his distinguished consideration.

(Signed) THOS. J. PAGE.

Asuncion, Sept. 28, 1854.

The undersigned, lieutenant commanding the United States steamer Water Witch, has the honor to address his Excellency José Falcon, Minister and Secretary of State of the Republic of Paraguay, in relation to the departure from this country of the American citizens now residing in Asuncion.

During an interview with his Excellency the President of the Republic on the 22d inst., the undersigned was assured that to the departure of the American citizens above alluded to, together with their effects and merchandise, there was no objection; and that it would only be necessary for them to be supplied with passports, and have their merchandise dispatched through the custom-house in accordance with the usual forms. Under this assurance vessels have been provided for their departure, their passports taken out, and on the application made through the secretary of the undersigned for the permit for the merchandise, the undersigned is informed that the permit can not be granted until the surrender by Mr. Hopkins, to

the Collector of Customs, of the papers relating to the purchase of land at San Antonio. The undersigned does not perceive any relevancy of the two questions one to the other—the taking out of a permit for goods and the demand of the Collector for the papers alluded to. The papers are the private property of the American company of which Mr. Hopkins is agent, which is sufficient reason that he should retain them, and as such can not be surrendered to the Collector of Customs.

The undersigned desires that his position in relation to citizens of the United States may be distinctly understood by your Excellency, and to this end he assumes the medium of a written communication.

The obligations enjoined on the undersigned by the Government of the United States make it his imperative duty to protect from violation the persons and property of American citizens, to the discharge of which duty the undersigned, recognizing the full force of the obligation, feels confident that he shall never be delinquent.

The rule of conduct prescribed for the undersigned by his sense of duty to the American citizens in the city of Asuncion is this, that, failing to receive the necessary permit for their departure in the usual mode and means of conveyance, they will embark on board the United States steamer Water Witch for safe conduct to Corrientes. The undersigned trusts that his Excellency will appreciate the sense of duty under which the undersigned finds himself placed, when he assures his Excellency that he indulges the hope that the good relations which have characterized his intercourse with the government of Paraguay may long subsist. Desiring an answer at an early day, the undersigned avails himself, etc.,

(Signed) THOS. J. PAGE.

Asuncion, Sept. 29, 1854.

The undersigned, lieutenant commmanding the United States steamer Water Witch, has the honor to acknowledge the receipt of the communication of this date from his Excellency the Secretary of State and Minister of Foreign Relations, returning his two communications of yesterday without a reply to either. This contempt of official communications, unknown to the civilization of the age, deprives the undersigned of the means of arriving at the designs and purposes of this government toward forbidding or permitting the prosecution of the exploration intrusted to his charge by the government of the United States, so far as the territory of Paraguay is concerned. Furthermore, it deprives the undersigned of the means of arriving at the fact whether or not will this government permit the American citizens now residing in Asuncion, held bound under such painful circumstances, to leave this country in the conveyance usually adopted. One of the communications related to this point especially.

To this the undersigned receives the return of his letter, instead of a reply to his question. The duty now devolves on the undersigned to receive on board of the Water Witch the American citizens alluded to, for their protection and safe conduct out of the dominions of Paraguay. The question of translating the communication above alluded to into Spanish, is one the undersigned does not permit himself to entertain. With equal right might he claim of this government the translation of its communications into English. The undersigned is cognizant to the fact that the government has received other communications in the English language, and has had them translated into the Spanish. The government of Paraguay is therefore not in such a state of dependency as to require that the undersigned shall supply it with a translator.

The undersigned desires to inform his Excellency that the circumstances involved will be reported to the government of the United States, for its action and instruc-

tions. In the mean time he will relieve the American citizens of their painful position by removing them to a country of their own selection.

The undersigned takes the occasion to renew, etc.,

(Signed) THOS. J. PAGE.

APPENDIX G (PAGE 299).

CONTRACT OF COLONIZATION FOR THE PROVINCE OF CORRIENTES.

In the city of Corrientes, capital of the province of the same name, on the 29th January, 1853, before me, the undersigned, Notary Public of the Government, and the undersigned witnesses, appeared Secretary Don Gregorio Valdez and Dr. Don Augusto Brouges, of Caixon Department "de las Altas Pireneos," in France, who said: the first, that, as the representative of his Excellency the Governor and Captain-General of the Province, Don Juan Pujol, to make with Señor Brouges a solemn contract for the establishment of colonies in the country, and to reduce the same to a public instrument of writing; and the second, that it was true, as had been announced by the Secretary, and that he recognized it as a legitimate contract. In virtue of which, and by the present writing entered into by both parties, they bind themselves in the following articles of agreement:

1st. The secretary declared that the government of his country, desiring to promote and unfold in the province that which the industry of the people demanded, and especially the agricultural interest, as a sure fountain of the wealth of a country, permits Señor Brouges to bring to the country one thousand families for the purpose indicated, each family to be composed of five persons, whose transit will be at the expense of Señor Brouges; with the understanding that, should the government of Corrientes have a steamer in any port of the Argentine Confederation, the property of the province, on the arrival of these families in the Rio de la Plata, it shall be placed at the disposition of Señor Brouges, or his agent, for the purpose of towing the vessel containing the emigrants up to the point of their disembarkation.

2d. The major part of these five persons who compose each agricultural family will be of the male sex, capable of working, and not under ten years of age; children of less age, of the same family, being admissible as supernumeraries.

3d. Two distinct families, united by an authentic agreement, and making the number of five persons, will be accepted as one, and in this sense will enjoy privileges above stipulated.

4th. Señor Brouges is bound to effect the transportation of the one thousand families by groups of two hundred each in the space of two years, and the entire number in the space of ten, which will count from the day of the arrival of the first group at the place of their destiny.

5th. Each group shall be from a colony, under the direction of Señor Brouges, or his competent agent, the agreement of each individual family being an affair intrusted to him.

6th. The locations of the colonies granted by the government will be on the River Parana, and Uruguay, in what is called the "Missiones," and they will be selected by Señor Brouges from the public lands.

7th. The government of Corrientes, in the name of the province, adjudges to each family, of the lands selected by Señor Brouges, twenty* "cuadras" square, of one hundred and fifty "varas" a side, whose lot and portion of land shall be, at the end of five years from the arrival of each group of families, the absolute property of each

* "Veiente cuadras cuadradas de ciento cinquenta vases por cada lado."

one of the families, in consideration of the advantages accruing to the country from their industry.

8th. Each colony will locate in two sections, of one hundred families to each, fronting each other, leaving an intermediate space of a hundred "cuadras" one from the other, of three "cuadras" in breadth, which intermediate space may be sold by the government of Corrientes to those who may wish to build on it, with the view of increasing the population of the colony, it being understood that one half of the proceeds of such sale shall go into the public treasury of the province, and the other half into the common depository of the colony, for the public benefit, and declaring of the same character those lands between the possessions of the colonists and the river's banks.

9th. The government of Corrientes grants, at the same time, for the common benefit of each colony, four leagues square of land, in addition, adjoining the possession of the colonies, extending into the interior of the province, whose right of possession shall be alienated by no one.

10th. In addition to the above, the government of Corrientes will provide for the establishment of each family a house or "ranche" of wood, consisting of two rooms, of five "varas" square, one of them to have a door, and the other a window, the whole of the value of fifty dollars ("patac ones"); it will also furnish six barrels of flour, of eight arobas each (200 pounds), cotton and tobacco seed for sowing a "quadra" (150 yards) each; four "fanegas" of wheat, and one of corn for the proper use, and plants of sugar-cane sufficient to plant one "cuadra" of land; also twelve head of cattle, two oxen for cultivating the ground, eight cows for breeding, and two horses for work.

11th. The agricultural families will establish themselves under the following conditions: the articles above mentioned will revert to the government at the expiration of two years from the date of their delivery; provided that, should the crops of the colonists have been bad during these two years, then the time of reversion shall be extended to three years; but this operation will not take effect with the succeeding group of families in two years, but at the expiration of three, because it is advisable that the advances made to the first colony will serve as elements for the establishment of the second; those of this for the third, and so on, until the state has been reimbursed to the last amount expended, which shall be at the rate of two hundred dollars ("patac ones") to each family.

12th. The colonists will clear the lands granted them. Each family will cultivate one half of the land in cotton, tobacco, sugar-cane, wheat, and corn, leaving the other half for the cultivation of any thing that may please the colonist.

13th. The colonists who are thus established in this province will be a dependency of it, and in no manner whatsoever of any other state or nation. They will have an administration, civil and judicial, discharged by a judge of the peace ("juez de paz"), appointed by the government from among the colonists, or a native of the country, whose administration shall be conformable with the laws of the province.

14th. The colonists will have the right to appoint a colonial commission of ten persons from the same colony, whose duty will be to serve as a council to the judge of the peace, in certain cases, to vote the necessary sum of money for the benefit of the colony, and to represent to the government the propriety or necessity of better measures.

15th. The colonists will practice industry freely, under subjection, nevertheless, to the laws of the country.

16th. During the term of five years from the establishment of each colony, the colonists will be exempted from all personal tax on articles both movable and immovable.

17th. The duties arising from exportation and importation shall be the same in the colonies as the rest of the province.

18th. The colonists will be exempted from military service, being competent only to organize a civil national guard, for their proper defense and the maintenance of good order in each colony, whose service will be confined to the colony alone; and the colonists will not present themselves, in an armed body, at a greater distance from the confines of the colony than one league.

19th. Mr. Brouges will advise the government of Corrientes four months before the expected arrival of the colonists, to the end that the government may have the necessary time to construct houses of wood, and make other necessary arrangements.

20th. This contract will be submitted to the approval of the government, represented in the person of the secretary, from which will be obtained a full ratification, rendering effective all these obligations; it will be observed and complied with, exactly and legally, without modification, alteration, or interpretation in any manner differing from the true intent of its stipulations.

To which appeared as witnesses Don Bartolomé Lescano, Don Manuel José Ruda, and Don José Ezequiel Madeyro, before me, Notary of the Public and Government,

GREGORIO VALDEZ,

Don AUGUSTA BROUGES.

Witnesses, { Bartolomé Lescano, Manuel José Ruda, José Ezequiel Madeyro.

Corrientes, January 12th, 1853.

En virtud de la ley de 25 Corriente, que encabeza este contrato, lo apruebo y ratifico en todas sus partes. JUAN PUJOL, Gobernador.

APPENDIX H (PAGE 384).

THE ATTACK UPON THE WATER WITCH.

Commander Page to Mr. Dobbin.

United States Steamer Water Witch, Parana River, February 5, 1855.

SIR,—I have the honor to forward to the Department the inclosed report from Lieutenant Jeffers, from which it will be seen that a most unprovoked, unwarrantable, and dastardly attack has been made on the "Water Witch" while she was in the peaceable and rightful discharge of duty assigned me by the Department.

On the 31st of last month I left Corrientes, with the small steamer and two boats, taking with me three of the officers and sixteen men, with the design of ascending the River Salado, in boats, if possible, should the small steamer prove inadequate. This force would have been necessary, in the event of using either the small steamer or the boats. Lieutenant Jeffers I left in charge of the Water Witch, with instructions to ascend the Parana River, so far as her draught would allow. This, I supposed, would be less than two hundred miles.

He sailed from the town of Corrientes on the 1st instant, and, as will be seen from his report, had not gone more than three miles from where the river forms the common boundary between Corrientes (one of the provinces of the Argentine Confederation) and Paraguay, when the Water Witch was fired into from a fort on the Paraguay side of the river.

The Water Witch was in the act of exploring a river which is the common boundary between these two countries. The right of each to navigate this river up to the

limit of the Province of Corrientes has never been questioned by either, and I had never heard that Paraguay presumed to exercise the power of preventing its navigation.

To the exploration of this portion of the Parana I had not only obtained the permission of the Argentine Confederation, and especially of the Province of Corrientes, but an expression of earnest solicitude on the part of both the President of the Confederation and the Governor of Corrientes had been made that I should establish the fact that the river is navigable to a much greater extent than that to which it is now known to be, of which they had some hope, but not the means of proving.

The navigation of this river to the extent of the territory of Corrientes is already secured to the flag of the United States by treaty with the Argentine Confederation. That government, so far from objecting to the Water Witch's ascending the river, had furnished me with an order, enjoining upon every province into whose waters I should enter the obligation to afford me every facility.

On what ground and for what reason the government of Paraguay has presumed to commit such an act I am unable to conjecture. So far from the Water Witch making any hostile demonstration, she attempted to pass up the river through a channel way which was more on the Corrientes side, and, in doing so, was "run aground" by the pilot. This was seen from the fort. It was well known to the government of Paraguay, and, doubtless, to the commander of the fort, that the Water Witch was with a very reduced complement of both officers and men, and, consequently, it could not have been her design to make an attack. The act of firing into the vessel can not, therefore, receive the shadow of justification on the grounds of anticipating an attack. It is consequently a wanton outrage; the act of a government beyond the pale of civilization, and seemingly unconscious of the responsibility of such an outrage. This is, nevertheless, no palliation for so grave an offense.

Lieutenant Jeffers was in the act of executing instructions which he had received from me when the steamer was fired into. His course and conduct on the occasion I highly approve and commend, and I hope they will meet with the approval of the Department.

It is with pain and regret that I report the death of Samuel Chaney, quartermaster. He died in two hours from the effects of wounds received from a ball and splinters. There were a few slight wounds received by others from splinters, which were so slight as not to prevent the discharge of the usual duties.

The vessel was hulled ten times, but in no point of any importance. The repairs can be readily made. I now proceed to Montevideo with the hope of obtaining from the commodore or senior officer two or three guns of suitable callibre and an addition of a few men. With this force I shall feel confident of the ability of the Water Witch to avenge the outrage which has been perpetrated on the flag of the United States.

I indulge in the sanguine hope that the commodore will act in this matter with all the promptness which the exigencies of the case require, and that such a course will receive the approval of the Department.

I have the honor, sir, to be, very respectfully, your obedient servant,

THOS. J. PAGE, Lieut. Com'g U. S. Steamer Water Witch.

Hon. James C. Dobbin, Secretary of the Navy, Washington, D. C.

Lieutenant Jeffers to Commander Page.

United States Steamer Water Witch, Corrientes, February 2, 1855.

SIR,—In pursuance of your instructions, and with the consent of the Governor of

the Province of Corrientes, at 7 A.M. on yesterday, February 1, weighed anchor and stood up the River Parana for the purpose of making an exploration of its upper course so far as navigable, and rectifying the chart of the river up to the mouth of the Paraguay in all places where the channel had changed since the chart was made. Nothing particular occurred until 11 A.M., when we entered the Parana above the mouth of the Paraguay (observing some movements at the Guardia "Cerito"), and continued our course diagonally across the stream toward the Corrientes shore, intending to pass between that and an island about four miles above the mouth of the Paraguay, Guardia "Carracha," at the Paso del Rey, in sight on the right bank. At $11^h\ 26^m$ opened this station, a semicircular brick fort on an elevation of about 30 feet above the river, mounting, as well as I could ascertain, six guns "*en barbette*," and shortly afterward ran aground, about half a mile from the fort, on a sand-bank making up suddenly out of deep water, one fathom under the bows, $3\frac{1}{2}$ at the wheel-house. A boat was sent from the guardia, which laid off observing our motions.

I immediately laid out a kedge astern, and about $12^h\ 15^m$ hauled off and let go our anchor; attempted to weigh the kedge, but lost it. While the men were at their dinner I observed the Paraguayans getting their guns ready. I shifted starboard gun to forward port, on port side of quarter-deck, cleared for action, filled forty shrapnell and twelve shells, and got up thirty stand of grape; but not supposing that any thing serious would result, did not cut the rail over the port to which the gun had been shifted.

I then stationed Mr. Potts at the bell, and in charge of the deck, to assist the pilot, with directions to proceed at all hazards, unless the machinery should be disabled. Mr. Lamdin I placed in charge of the after guns, and Mr. Taylor at the engine. We mustered at quarters but twenty-eight, of whom two were sick, and five cooks and stewards.

At $1^h\ 20^m$ weighed; while weighing the anchor, the Paraguayan canoe which had been observing our movements came alongside, and a man offered me a paper printed in Spanish, which I declined to receive on the ground that I could not read it. As soon as the anchor was aweigh, I stood up the river, the crew at quarters. The pilot informed me that the only practicable channel was close to the fort, and this channel I directed him to take. On arriving within three hundred yards, I was hailed by a person, who, I am informed, was the Paraguayan admiral; but I did not understand the import of the hail. Two blank cartridges were then fired from the fort in quick succession, and followed by a shot. I had given particular orders that no shot should be fired except in return, and then only by my directions; and on receiving this first fire, I directed a general fire in return.

The first shot of the enemy carried away the wheel, cut the ropes, and mortally wounded Samuel Chaney, the helmsman. A bar was soon shipped, and the vessel steered by it, but with some difficulty on account of the rapidity of the current. In a couple of minutes after the action had commenced the pilot deserted his station, and hid himself behind the engine-house. Dragged up thence by Mr. Potts, on looking around him he exclaimed, "We shall certainly ground, as there is not sufficient water in the channel." By this time we had run past all the guns of the battery except one; and on learning the state of things, I left the bow gun, which I had been directing, which was no longer serviceable, and took the deck. The pilot, whom I had again to force up to his station, in a high state of excitement, repeatedly exclaimed, "We shall be aground in a moment," insisting that we could not pass up. The vessel being then in ten feet water—drawing nine—I was reluctantly compelled to back down past the battery, exposed to a severe fire, which, from the position of the vessel being nearly bows on, I could not return. On getting out of

range I anchored, repaired damages, and filled more ammunition, having observed the Paraguayan war steamer "Taquari" firing up.

I am satisfied the pilot was not in the channel; but in his state of fright nothing could be done with him, and to have grounded would have been to insure the loss of the vessel, as it is said that the Paraguayans have at this point six thousand men and a numerous artillery to arrest the passage of the Brazilian fleet. The "Taquari," with their gun-boats, would alone have been an overwhelming force. At 3 P.M. weighed anchor and returned to Corrientes.

It had been my intention to attack the Guardia "Cerito," where a gun-boat was lying. The "Taquari" dropped down and anchored there for its defense, which made the odds too great for any hope of a successful attack with my little crew of 28 men, and the armament one 24 and two 12 pound howitzer boat-guns. Although so superior in force, the "Taquari" made no demonstration of following us.

The amount of damage sustained by the enemy it is difficult to estimate. Mr. Bushell, the clerk, who was directed by me to take notes of the action, states that one of their guns was dismounted, and, from the good explosions of several of the shrapnell, some execution must have taken place. A battery of this nature exposes so few men that I can not estimate their loss as very great. I am confident that, had all the officers and men been on board, we should have killed or driven them from their guns, and taken the battery; but I must do them the justice to say that I saw no signs of flinching. The fire was slow but remarkably well directed.

It will, I hope, be evident, from the preceding details, that this attack was as unprovoked as it was unexpected; but, following the dictates of prudence, I was not unprepared for such a result. It is not a little remarkable that at no time, either before or after the engagement, was any flag displayed.

In conclusion, I must fulfill an agreeable duty in bearing witness to the zealous manner in which the engineers of this ship supported me on this occasion. Mr. Potts was in charge of the deck; Mr. Lamdin of a division of guns; and the latter assisted personally in loading after some of his men had deserted from their quarters. The engine was worked by Mr. Taylor with as much promptitude as on ordinary occasions.

I have the honor, sir, to be, very respectfully, your obedient servant,

WILLIAM N. JEFFERS, Lieutenant in Command.

Lieutenant-Commander Thomas J. Page.

APPENDIX I (PAGE xxii.).

MEMORIAL OF THE AMERICAN GEOGRAPHICAL AND STATISTICAL SOCIETY.

American Geographical and Statistical Society, New York, May 11, 1852.

Mr. De Witt Bloodgood, to whom was intrusted the preparation of a memorial to the Secretary of the Navy on the subject of a survey of the Rio de la Plata and its tributaries, presented the following, which being read, was adopted, and ordered to be forwarded to the Secretary of the Navy:

The American Geographical and Statistical Society of New York having recently had its attention called to the great commercial importance of the countries bordering on the Rio de la Plata and its tributaries, by the written and verbal reports of E. A. Hopkins, Esq., for many years a resident in Paraguay, and now on his return to that country as United States Consul, has endeavored, under a deep conviction of the importance of the subject, to awaken a spirit of inquiry among our countrymen, and to turn the attention of our commercial classes to the vast regions now opened to their enterprise.

To that gentleman the Society is indebted for valuable information, not to be found in the latest geographies, and for the correct delineations of several rivers and lakes, not yet adopted even in the best maps of South America. The Society, having given as much publicity as possible, through the press of New York, to information so valuable and opportune, deems it to be within the proper sphere of its duty to invoke the aid of at least one department of the government to a subject daily growing more and more important.

The late political events at Buenos Ayres, and the downfall of a policy, which, to say the least of it, has been destructive of the free navigation of the Plata River for very many years, preceded as it was, also, by a similar isolating policy of the celebrated Dictator of Paraguay, have at length opened to the commercial states of Europe and North America a field of commercial adventure of boundless extent and endless fertility. Already the leading statesmen of England and France have exchanged notes on the propriety of securing the trade of these newly emancipated countries, by proposing the guarantees of a full diplomatic recognition. Our own, as we fear, has as yet done nothing, even for the very governments who prefer our friendship to that of all other nations.

The extent of the territory watered by the Plata and its tributaries, the variety and value of its natural products, the anxiety which its political rulers and the people themselves have manifested to seek and establish friendly relations with the United States have deeply impressed the Society; and it desires, as its first and most signal effort, to obtain the assistance of your Department in the development and successful accomplishment of its design, to make those countries which have had no commerce by sea for a long series of years friends of our flag and customers for our products.

It is the earnest wish of the Society to procure, through your official power and influence, an immediate survey of the River Plata, its affluents and confluents, and of the shores that are washed and made prolific by these great rivers. It is to obtain such information, by actual and scientific observation, as will enable our navigators and merchants to enter those rivers for the purposes of trade, for the advancement of civilization, and the promotion of the best interests of humanity.

It must be well known to your Department that a large part of Brazil and Bolivia, all Paraguay, the upper provinces of the Argentine Republic, and a portion of Uruguay, have for many years been cut off from any direct and active commercial intercourse with the rest of the world; and that the productions of their soils, rich, varied, and inexhaustible, have been of little benefit to themselves or to those countries which most desired to obtain them. It is needless, therefore, for the Society to enter into details upon this branch of the subject farther than to refer your Department to the fact that at least one quarter of the whole of South America is now, for the first time, within the reach of our enterprise, offering positive and far more profitable results than we have gained or can gain from many old countries where, at a large expense, we have kept up formal diplomatic arrangements, and where our squadrons ride at anchor in courteous idleness; older countries, who warily guard their ports by restrictive or reciprocal customs against our too successful trade, or in the end heap up balances against us which scarcely the gold of California can liquidate.

The marts now opened to us in South America, by the change in the government of Buenos Ayres, are as yet almost without limit. The commerce of our country has but to enter them to be enriched.

The inhabitants of the countries upon the upper waters of La Plata have for a long time scarcely enjoyed the comforts of civilized life.

They have a fine climate, they have abundant means, they are, in fact, wealthy, but of our beautiful and useful fabrics, the comfortable furniture, the latest and most useful agricultural and mechanical implements, the clothing, the works of art, the axe, the saw, the steam-engine, they know but little. In order to introduce them into those countries, and to bring back their rare and valuable woods, their drugs, their hemp, their tobacco, and their precious minerals, the way must first be explored and pointed out. Large vessels are quite unknown in the upper waters. The small trade which Paraguay carries on shorewise with itself, or occasionally with Buenos Ayres and Montevideo, is by means of small water-craft that float downward with the current, or slowly re-ascend it by the aid of their rude sails. And so sensible are the governments of Bolivia and Paraguay of the necessity of a change in the navigation of those rivers, they have offered large bounties in money and lands to whoever will first ascend those rivers by steam. On good authority the Society is assured that any expedition undertaken for this purpose will receive their most cordial welcome.

Your Department, then, is solicited to take the first step in bringing about a commercial intercourse between those countries and the United States, through these internal and fluvial avenues. It respectfully asks that you will immediately select one of the small government steamers carrying about five feet water to proceed to the upper tributaries of La Plata, certainly as far as Assumption, to make a geographical reconnoissance, and a hydrographical survey. This steamer, being made a part of the Brazilian squadron, will not require any particular appropriation from Congress, and the Society will be most happy to procure the services of two or three scientific persons, to assist in the objects of the inquiry, if the Department will recognize them as attached to the expedition. It would also engage to furnish them a full set of instructions, geographical and statistical, as a guide to those intrusted with its particular portion of the investigations. Thus, in an ample and economical manner, one of the most important and attractive subjects of the day would be illustrated and explained through the Department, greatly to its own honor and the advantage of our maritime interests.

Nor does the Society deem this appeal to your Department an improper one.

Great as has been the glory acquired by our navy, noble as have been its triumphs, dear to us as is its renown, we believe its mission is not the less a noble one when it bears around the world the flag of a peaceful, united, and happy nation; when it rescues our shipwrecked mariners from the horrors of some desolate or barbarous coast; when it gives to the American citizen in far-distant countries the "assurance doubly sure," that even there his property and his life will find protection; when it convoys safely through the squadrons of adverse and contending parties our own richly-laden merchant fleets, and when it curiously explores the newly discovered rivers, the icebound inlets, and dangerous coasts, where American enterprise may gather wealth in security.

These are some of the services, already happily rendered, which have made our navy so popular, and that induce such liberal appropriations for its support in time of peace, and almost without a murmur.

Our army when not engaged in war sinks into comparative inutility, but the navy is ever on the wing, the messenger of peace, of commerce, and of civilization, our proudest representative, armed, except in the last resort, only with good will and chivalric courtesy.

Most of the great commercial and scientific explorations of the last hundred years have been conducted by naval officers, under the patronage of their respective governments. England, France, Holland, Russia, and the United States, have names

on their naval lists which have gathered their brightest laurels from the peaceful fields of laborious research.

Our own government has distinguished itself by its admirable coast-surveys, its Antarctic and Arctic expeditions, and is now directing its attention to the seas and shores of Japan. In this latter expedition it may necessarily be that force is to be an element of success; but in the proposition we make to the Department, to explore the River Plata, no such element will be necessary. The small steamer which it will send there, where one was never before seen, will be welcomed by an enthusiastic population, and received with gratitude. Every where her commander will be hailed with joy, and the blessings of millions of Christian people will be showered upon our country when her mission is proclaimed.

Every where her officers, savants, and crew, will be received with open arms, and the records of her exploring parties will brighten the pages of our commercial history.

Our Naval Department has before this shown a similar intelligent spirit. The National Observatory at Washington, under its fostering care, has already become famous throughout the world. Its chief has already essentially benefited navigation and commerce by his profound theories and observations on the currents of the ocean, as well as by those accurate nautical tables from which the mariner learns to trace his daily course upon the deep.

In conclusion, the Society most respectfully asks the aid of your Department in carrying out the objects expressed in this memorial, the scientific exploration of the River Plata and its tributaries, a proceeding clearly within its acknowledged province, conducive to the prosperity of an immense territory that seeks our friendship and our trade, to the interests of American commerce and manufactures, and those of the human race.

Should the Society be so fortunate as to have presented in this brief memorial sufficient reasons to induce the Department to approve and forward the project which it advocates, it respectfully suggests that no time is to be lost in carrying it through. The Americans are at this moment in high favor with Brazil, and the states bordering upon these rivers. Our products will be the first they receive under the new order of things. Such is their habit that whatever articles are now sent them from our looms and factories will probably be preferred to all others. Circumstances greatly favor our obtaining the largest share of their trade, and we can not doubt that the enlightened views by which the administration of the Department has been directed hitherto will continue to be the source of increased prosperity to all those interests it was established to protect and advance.

The recent appointment of English and French diplomatic agents, now on their way to this new theatre of commercial enterprise, affords the most positive evidence of the propriety of the measures suggested by your memorialists.

All which is respectfully submitted.

The Hon. Wm. A. Graham, Secretary of the Navy, Washington.

APPENDIX J.

NOTES ON THE BIRDS COLLECTED BY THE LA PLATA EXPEDITION.

By JOHN CASSIN, *of the Academy of Natural Sciences, Philadelphia.*

Philadelphia, November 11th, 1856.

SIR,—The collection of birds made during the survey and exploration of the Rio Parana by the United States steamer Water Witch, under your command, has been received for examination at the Academy of Natural Sciences of this city.

This collection is one of the most interesting ever made in South America, on account of the countries in which it was obtained being so seldom visited by travelers or naturalists, and my impression is that it contains numerous birds never before known, and certainly not in any museum or collection in this country.

I hope to have, at an early day, the honor of reporting to you, sir, the results of a more extended and careful examination, especially of the many remarkable birds in this collection.

The volumes relating to natural history have, within a few years, been completed by two European expeditions to South America. The more important is the voyage of her Majesty's ship Beagle, performed by order of the British government. The other is D'Orbigny's voyage to South America, performed under the auspices of the government of France. In both of these, the natural history is very carefully published. Your collections are certainly not inferior to those of either of these expeditions, and, judging from the notes of officers which I have seen, my opinion is that an American contribution to the natural history of South America can be made very much superior to both.

So long as the condition or progress of the arts and sciences properly characterizes nations, the publication of the results in natural history of your expedition must be regarded not only as important to zoological science, but even in a national aspect.

I am, sir, very respectfully, JOHN CASSIN.

Captain Page, United States Navy.

The collection of birds brought by Captain Page's party is of high interest on account of having been made in countries of South America little visited by voyagers or naturalists. In fact, Paraguay may be said to be the least explored country of South America which is readily accessible. Mainly, of course, this collection was made in that and other countries bordering on the rivers Parana and Paraguay; and the great distance to which this expedition ascended the latter afforded it an almost peculiar, and certainly a very little explored field of operation in natural history. That part of the collection made in Paraguay is, for reasons here indicated, most valuable and interesting.

The expedition, having been designed and dispatched for the performance of a special duty only, was not provided with naturalists nor facilities for making collections. This omission, however, was compensated for by the fact that great interest was taken in the profuse natural productions of the countries visited, and large collections made by officers attached to the expedition. The collection of birds was made under the immediate direction of Captain Page, mainly by Lieutenant William H. Powell and Dr. Robert Carter.

I. RAPTORES—RAPACIOUS BIRDS.

The collection contains twelve species, all of which are of the family of Falcons, the most interesting of which are, perhaps, *Falco sparverius*, or the common Sparrow Hawk of the United States, remarkable for being one of the very few birds that inhabit the entire continent of America. Numerous specimens of *Buteo pterocles* and *nigricollis* and the curious short-toed Falcon known as *Geranospiza hemidactylus*. *Falco femoralis*, is also in this collection, a bird which has been found in New Mexico.

1. Falco sparverius.
2. Falco femoralis.
3. Geranospiza hemidactylus.
4. Asturina cinerea.
5. Asturina insectivora.
6. Buteo pterocles.
7. Buteo nigricollis.
8. Morphnus urubitinga.
9. Morphnus meridionalis.
10. Ictinia plumbea.
11. Circus macropterus.
12. Polyborus tharus.

II. Insessores, or Perching Birds.

The collection contains numerous beautiful species of the families of Parrots, Jays, Tanagers, Kingfishers, Fly-catchers and others of the groups which are especially South American. Numerous specimens of the Great-billed Toucan, *Ramphastos toco*, all of which are of smaller size than the same bird of more northern countries of South America, showing clearly the prevalence of a smaller race in Paraguay.

Several of the largest known species of Parrots or Macaws are in the collection, and also several specimens of the handsome small species recently described by the Prince Bonaparte as *Pionus coralinus*. Of the gigantic Kingfisher of the South American rivers, *Ceryle torquata*, there are several specimens, also of the Amazon Kingfisher, *Ceryle Amazona*.

One of the most interesting birds in the collection is the beautiful black Woodpecker first described by D'Orbigny as *Picus melanogaster*. We recognize the following species of the group of perching birds in this collection, in addition to which are numerous others which at present we have not determined:

1. Cyanocorax pileatus.
2. Cyanocorax cyanomelas.
3. Amblyramphus ruber.
4. Leiestes viridis.
5. Tanagra striata.
6. Tanagra cana.
7. Lophospiza cristata.
8. Zonotrichia matutina.
9. Gubernetes yetapa.
10. Saurophagus sulphuratus.
11. Lichenops perspicillata.
12. Taenioptera coronatus.
13. Tænioptera nivea.
14. Pyrocephalus rubineus.
15. Ara maracana.
16. Anodorhynchus cinereus.
17. Macrocercus Brasiliensis.
18. Conurus nenday.
19. Pionus coralinus.
20. Ceryle torquata.
21. Ceryle Amazona.
22. Ramphastos toco.
23. Crotophaga ani.
24. Crotophaga major.
25. Picus robustus.
26. Picus melanogaster.
27. Trogon surucura.
28. Cuculus guira.
29. Piaya macroura.

Among those not examined are several species of *Saltator*, *Molothrus*, *Furnarius*, *Celeus*, and others.

III. Rasores, or Gallinaceous Birds.

In the birds of this group in the collection, the two supposed species of *Crax* known to naturalists as *Crax Yarrellii* and *Crax fasciolata* are labeled as male and female of the same bird.

1. Columba gymnopthalmus.
2. Columba meridionalis.
3. Northura major.
4. Crax Yarrellii.
5. Crax fasciolata.
6. Penelope pipile.

In addition to which are several species of *Tinamus* and some beautiful specimens of *Penelope* that we can not name without more extended examination.

IV. Grallatores—Wading Birds.

The present having been an exploration principally by water, the collection contains numerous birds of the classes that habitually frequent rivers of South America and their shores. We especially notice fine specimens of the gigantic storks, *Mycteria Americana* and *Ciconia pillus*; also of the South American Ibises, *Geronticus nudifrons* and *cœrulescens*.

1. Ardea cocoi.
2. Egretta galatea.
3. Egretta scapularis.
4. Tigrosoma Brasiliense.
5. Ciconia pillus.
6. Mycteria Americana.
7. Nycticorax sibilatrix.
8. Ibis melanopsis.
9. Ibis nudifrons.
10. Geronticus cærulescens.
11. Aramus scolopaceus.
12. Vanellus Cayannensis.
13. Limosa Hudsonica?
14. Rallus gigas.
15. Gallinula crassirostris.
16. Parra jacana.
17. Hiaticula Azaræ.

Numerous specimens of *Totanus*, *Tringa*, *Calidris*, and *Charadrius* have not been examined, some of which are, however, apparently identical with birds of the United States.

Natatores—Swimming Birds.

The country passed through by the expedition appears to be particularly the native locality of the Musk Duck, *Anas moschata*, the parent stock from which has been derived the domestic musk, or Muscovy Duck. Numerous specimens of this bird are in the collection obtained at various localities on the Rio Parana and tributaries. The Black-necked Swan, *Cygnus nigricollis*, is also in the collection obtained far up the Parana, thus showing a range of locality hitherto unknown to naturalists. The same is the case with the Flamingo of the western coast, *Phœnicopterus ignipalliatus*, previously best known as a bird of Chili.

We may note especially also fine specimens of the beautiful Shoveler Duck of South America, *Spatula maculata*, little known to naturalists. Also numerous specimens of the very handsome Teals, *Querquedula torquata*, *versicolor*, *ipicutiri*, and *cyanoptera*, the last of which has been found in the western countries of North America. We recognize the following:

1. Phœnicopterus ignipalliatus.
2. Cygnus nigricollis.
3. Cygnus coscoroba.
4. Fuligula metopias.
5. Cairina moschata.
6. Spatula maculata.
7. Querquedula torquata.
8. Querquedula versicolor.
9. Querquedula cyanoptera.
10. Querquedula ipicutiri.
11. Rhynchops nigra.
12. Carbo Brasiliensis.
13. Podiceps leucopterus.
14. Sterna magnirostris.

Also various other species of *Podiceps*, *Sterna*, and *Larus*.

All the specimens in this collection are in unusually fine plumage and condition, and form a very beautiful and important addition to the National Museum.

APPENDIX K.

NOTE ON FISHES AND REPTILES.

By C. Girard.

Washington, D. C., November 25, 1856.

Dear Sir,—The preliminary survey which I have made of the fishes and reptiles collected by you in Paraguay fully anticipates the expectation we might have entertained in that respect while you were yet in the field.

Of the fishes, two families are especially well represented—the *siluroid* and the *characini*. The first embracing fishes akin to the catfish of our fresh waters and the sea-cat of our coast. It is especially numerous in South America, where its various types assume diversified aspects. The second is almost exclusively proper

to the southern hemisphere, since its northernmost representative is an inhabitant of the waters of the valley of the Rio Grande del Norte (Rio Bravo), and southwest portion of Texas.

I perceive already several species entirely new to science, and I am satisfied that, on a more critical examination of the whole collection, many more will turn out to be so. But the accession of new species is not the sole point of interest in the collection we owe to your exertions. Its study will touch to other problems as yet but little understood. And first and foremost is the problem of the natural affinities of these fishes with the types now extinct, and which have peopled the waters of geological eras in times gone by. Next comes the problem of the zoological affinities with the ichthyic fauna now living upon the present surface of the earth.

I could readily point out to you some of the results, cursorily obtained, were I not reluctant to write fragments of a history which will make the subject of a general report to you, so soon as Congress shall have decided upon its publication.

I have a few words to say about the reptiles. There are but few saurians, or lizards, in the collection; some of them I have had an opportunity to examine from other sources.

The ophidians, or snakes, are well represented; several are moccasinlike, the others belong to the inoffensive colubridæ, both of land and water habits.

I see no frogs. A series of tree-frogs and tree-toads, however, make me think that many interesting results will be obtained from their investigation.

The same is true with regard to the toads, properly so called, of which there are several kinds. Their history will fill up a gap in the natural history of South America, and complete the results I have obtained a few years since while examining other collections. I remain sincerely yours, C. GIRARD.

Captain T. J. Page, United States Navy.

APPENDIX L.

LIST OF MEDICINAL SUBSTANCES OBTAINED BY THE EXPEDITION.

By J. CARSON, *Professor of Materia Medica, etc., in the University of Pennsylvania.*

Philadelphia, December 1, 1856.

DEAR SIR,—I have seen and cursorily examined a portion of the specimens in natural history which have been brought from the interior of South America, the acquisitions of the expedition for exploration recently under your command, and am impressed with the importance to science and the industrial arts of all the information acquired by you. There can be no hesitation in declaring that you should be enabled, by an appropriation on the part of government, to make known the result of your labors, and thus secure, for the benefit of mankind, what has been deemed of sufficient consequence to authorize a special commission to obtain. With the hope that you will speedily be enabled to proceed with the work of publication, I am, very truly, your obedient servant, J. CARSON.

Captain Page, United States Navy, Washington.

CINCHONA BICOLORATA (Guibourt. *Hist. Nat. des Drogues Simples;* Carson, *American Journal of Pharmacy.*) The true botanical source of this bark has not been accurately determined. Its locality was supposed to be the West Indies. Its presence in the collection proves it to be a native of the interior of South America. It is desirable to determine the true plant from which it is derived. A good tonic.

SIMAROUBA OFFICINALIS (De Candolle).—The bark of this tree is analagous to Quassia. It is the *Simarouba bark* of commerce.

GUAIACUM OFFICINALE (Lin.).—Specimens of the bark and resin (*Resina guaiaci*) are in the collection.

CONTRAYERVA; the root of the *Dorstenia Brasiliensis*, described by Guibourt (*Hist. Nat. des Drog. Simp.*).—There are several specimens of the Dorstenia enumerated by Martius in his *Systema Materiæ Medicæ Vegetabilis Brasiliensis.*

MECHOACANNA.—A species of *Mechoacan Root*, probably from the *Piptastegia pisonis* (Martius, Mat. Med.) The specimens resemble the Mechoacan Root of the United States. It is purgative, owing its properties to a resin like that of Jalap.

SARSAPARILLA.—There are several species of the smilax growing in South America. The stems of two species are in the collection, but it is impossible to determine which they are. The expedition evidently opens a new source for this drug.

KRAMERIA, RHATANY.—The root of the *Krameria triandria* (Ruiz & Pavon). It was first discovered by them in Peru. The specimen in the collection may possibly be the *K. Ixina.* It is a powerful and valuable astringent, and of value as a drug.

ALSTRÆMERIA.—The roots of two species under the names *Battatilla* and *Robano.* These roots are probably demulcent, as is the case with many of the species of that genus. One is known to afford a fecula similar to arrow-root.

SCHINUS MOLLE.—The stems of the plant which, according to Martius, belongs to the family of ANACARDIACEÆ. They are resinous and heating, possibly useful as a stimulating diaphoretic, etc.

XANTHOXYLUM LANGSDORFII (Martius).—The stems, under the name of *Tembetaru.* The properties of this plant, like those of its congeners, appear to be stimulant and tonic.

GRENADILLA.—The stems of a species of *Passiflora.* There are several of them mentioned as medicinal by Martius. These are astringent, etc.

JATHROPHA CURCAS.—The seeds, which afford a purgative oil. They are called *Pinon purgativo.* The plant belongs to the family of *Euphorbiaceæ.*

VERBENA.—Two species are said to be emetic, the other a flavorer. The first goes by the name *Berbena carriotado solidago.* It may be the *S. vulneraria* of Martius, used for the purpose indicated by its name.

ROSMARINUS.—The *R. officinalis*, or an allied species, apparently *R. Chilensis.*

ROSA.—The buds of a rose either native or introduced. Astringent.

SALVIA (*Sage*).—It may be a new species, or one of those mentioned by Ruiz & Pavon, growing in Chili. It has the well-marked character of the genus.

EQUISETUM.—A species of *Horsetail* used in syphilis; probably, like the class, tonic and astringent.

RUTA, RUE.—*Ruta graveolens* (*officinalis*, Martius); according to this author, every where cultivated.

ABSINTHIUM.—Probably the *Baccaris triptera.* D. C. and Martius.

MATÉ.—The leaves of the *Ilex Paraguayensis* (St. Hilaire, var. *obtusifolia* Mart.); an interesting plant from which is obtained a substitute for tea.

COCA.—The leaves of the *Erythroxylon coca* (Lam.); an important article to the natives of South America as a stimulant and soother. It has been placed with narcotics, but its effects differ.

MALVA.—There are many species belonging to the *Malvaceæ* in South America (*see* Martius), whose properties are demulcent.

PTERIS.—This plant belongs to the Filices. There are three species mentioned by Martius, viz., *P. leptophylla, P. pedata, P. palinata.* They are astringent. The

native name, *Doradalia cuspa*, is given to this medicine. It is said to be a purifier of the blood.

ELEMI.—A resin from the *Icica icicariba* (D. C., Martius, or *I. altissima*, Aud., D. C.) It is a fine balsamic resin, used for the same purposes as the *Terebinthinæ*. The family is *Anacardiaceæ*.

GUARANA.—An astringent substance of dark brown color, in rolls of various sizes. Martius supposes it to be prepared from the extract of the *Paulina sortilis*. It has somewhat of a chocolate taste, and the fruit of the cacao is supposed to be mixed with it. It has been analyzed by Cadet and Batka. The latter has reported the existence of an alkaloid principle in it. It is stated that it is used as a substitute for tea or coffee, and has somewhat of their refreshing effects.

COPAIBA.—The species submitted corresponds to the *Copaifera coriacea* (Hayne). It affords the true drug and may be of importance in the commerce of the country explored by the expedition.

GUM ANGICO.—The product of the *Acacia angico*, or *A. pirema* (Martius). It resembles one of the forms of Senegal Gum. See paper by J. Carson, M.D., in *American Journal of Pharmacy*, vol. xvii.

BERGAMOT.—A species of *Monarda*, resembling *M. Bergamii*.

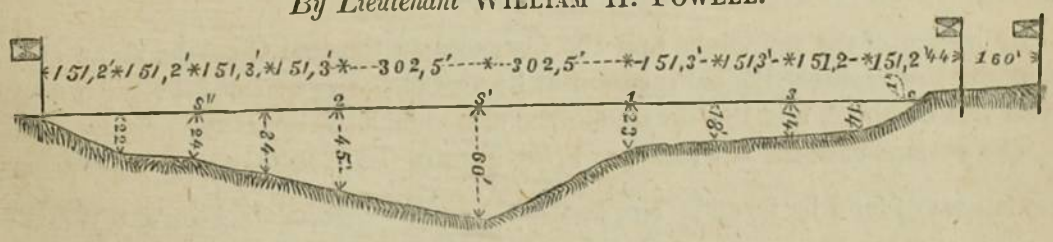
MINT.—*Mentha piperita*.

GNAPHALIUM.—A species of *Life everlasting*.

APPENDIX M.

METHODS OF WORK.

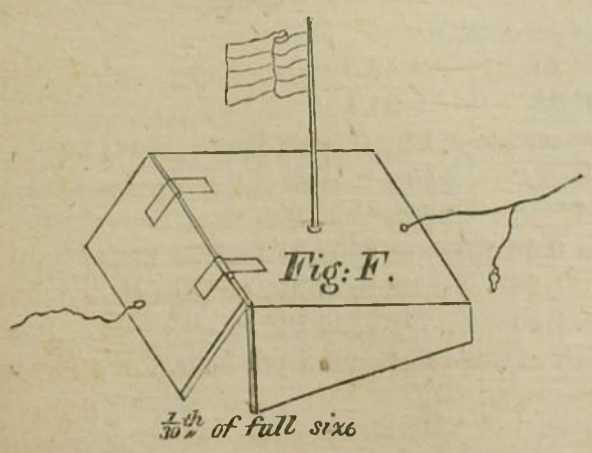
By Lieutenant WILLIAM H. POWELL.



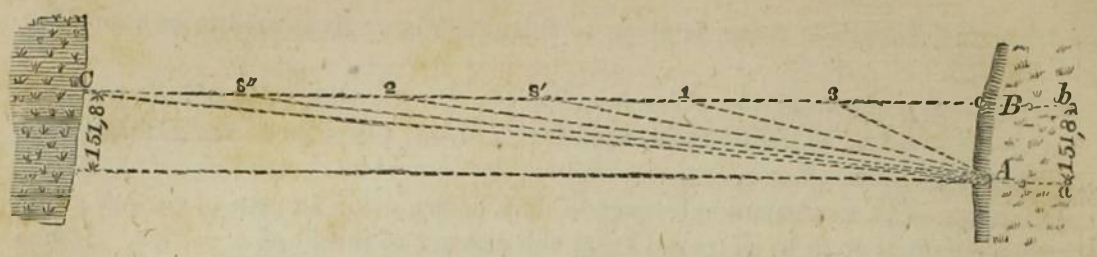
SECTION OF RIVER PARAGUAY, AT ASUNCION.

(Scale: *For horizontal measurements*, ¼ *inch to* 100 *feet; for soundings*, 1 *inch to* 100 *feet.*)

The instruments used were a piece of well-stretched and waxed cotton cord, for measuring the base; a sextant, for establishing the ranges and measuring the angles; a watch with a second-hand, and the float (Fig. F) for obtaining the surface-current; and a lead-line, divided into feet and five tenths of a foot, for taking the soundings.



The method of work was as follows: On a line taken parallel to the course of the current by the eye, a base of 151.8 feet, as a multiple of 50.6 feet, which bears the same proportion to a sea mile (taken as 6075.56 feet) that 30 seconds does to an hour, was measured and staked as AB.



The ranges A *a* and B *b* were then established by staking the points (*a*) and (*b*) at 90 degrees from B and A respectively, and B *b* extended across the river to C.

The angle BAC was then observed=85° 20′, the distance B *c* measured=44.5 feet, and C *c* calculated.

C *c* being known, the points 1 and 2, dividing it into three equal sections, and the points S, S′, and S″, marking the middle of each of these sections, were fixed, and the angles ASB, A1B, etc., calculated.

The points S, 1, S′, 2, and S″, of the line C *c*, were then taken up in a boat by means of the range B *b*, and the angles ASB, A1B, etc. (previously calculated), on the sextant, and sounded, the intervening points of the 1st and 3d sections being assumed by the eye.

The velocity of the *surface-current* at the stations S, S′ and S″ was found by anchoring the boat above the range B *b*, and dropping it by the anchor-rope, until the stern was exactly on the range. A float, represented by Fig. F, was put overboard from the bows then, and the instant of its leaving the stern made known to an observer at (*a*) by signal, who noted the exact time of its passage of each range.

With the difference of these times represented by *t*, 3 representing the number of times 50.6 feet was contained in the "base," *s* representing the surface-current in miles per hour, was obtained by formula No. 1, $s=\frac{30\times 3}{t}$.

By means of the soundings and the distances on the line C *c*—the mean of the soundings of each section being taken as its altitude—the transverse section of the river was obtained, and the square surface of it calculated by its subdivisions.

The surface-currents *s*, *s′*, and *s″* being known, the *velocity of the mass* of each section was found by formula No. 2, $y=\frac{(\sqrt{s}-1)^2+s}{2}$ (from Jackson's "What to Observe"), *y* representing velocity of mass, and *s* the surface-current, and, consequently, the cubic feet of each and all the sections calculated.

From these data and this method we have the following results:

C *c* 1815.1÷3=605 feet, length of section.
605 ÷2=302.5 " " " half section.
The altitude of 1st section=14 feet.
" " " 2d " =42.6 "
" " " 3d " =25.4 "
Surface-current of 1st section 1.12 miles per hour.
" " " 2d " 2.30 " " "
" " " 3d " 2.33 " " "
Velocity of mass of 1st section 0.56 miles, or 3402.31 feet per hour.
" " " " 2d " 1.28 " " 7776.71 " " "
" " " " 3d " 1.30 " " 7898.22 " " "
350618351.9, total number of cubic feet passed per hour.

APPENDIX N.

POINTS AND ELEVATIONS DETERMINED ON THE RIVER PARANA.

	Lat. S.	Long. W.
Martin Garcia.....	34 11 40	58 15 28.5
1.....	34 00 38	
1½.....	33 53 00	59 00 31
2.....	33 47 00	59 13 26
3.....	33 40 00	59 27 28
4 Near San Pedro	33 41 00	59 39 34
4½.....	33 31 23	59 52 38
5.....	33 15 17	60 15 21
Rosario	32 56 44	60 36 04
6 ..... D. R.	32 10 00	60 41 33
6½ Diamante	32 04 04	60 38 56
7 ¾ of a mile W. of Parana—the Bajada..	31 42 54	60 32 39
8.....	31 24 00	60 08 25
9.....	30 59 00	59 53 03
10 La Paz.....	30 44 08	59 38 42
11.....	30 10 21	59 39 39.5
12 Near Goya	29 07 00	59 21 20.6
13 Bella Vista	28 29 00	59 07 01.6
14 Corrientes.....	27 27 31	58 52 51

ASCENDING THE RIVER SALADO.

	Lat. S.	Long. W.
1 Santa Fé	31 38 34	60 39 48
2.....	31 21 24	60 50 27
3.....	31 06 21	60 44 50
4.....	31 00 48	60 48 18
5.....	30 52 58	60 44 44
6.....	30 46 18	60 39 44
7.....	30 33 57	60 37 00
8.....	30 13 48	60 40 50
9.....	30 12 48	60 38 00
10.....	30 10 50	60 38 47

DESCENDING FROM THE UPPER WATERS.

	Lat. S.	Long. W.
Estancia Taboado.....	27 20 35	64 08 25
Figaroa	27 42 33	.....
Matara.....	28 07 14	63 43 15
Estancia del Estado.....	28 19 54	63 28 58
Sause Esquina	28 26 27	63 18 07
Fortin Bracho.....	28 31 15	63 12 00
Navicha.....	28 43 08	62 58 00
Doña Lorenzo.....	29 05 13	62 48 00
Paso Coria	29 13 42	62 34 30
Monte Tigre	29 22 32	62 22 00
Paso Mistol	29 16 03	61 49 15

RIVER VERMEJO.

	Variation.	Lat. S.	Long. W.
1 May 26, 1857		26 44 45	58 41 32
2 " 28, "	7° 32′ E.	26 35 57	58 50 09
3 June 3, "		26 21 23	59 06 38
4 " 6, "	8° 42′ E.	26 20 44	59 10 47
5 " 10, "		26 17 09	59 13 50
6 June 14, 1857		26 20 16	59 20 53
7 " 19, "	10° 52′ E.	26 12 13	59 29 57
8 " 22, "		26 09 28	59 31 59
9 " 24, "		26 10 09	59 39 08
Guardia Vermejo.....		26 51 52	58 28 21

INTERIOR OF PARAGUAY.

	Variation.	Lat. S.	Long. W.
Asuncion.....		25 16 29	57 42 42
Ytagua.....		25 23 54	57 24 42
Head of Lake Ypacaray....		25 22 02	57 16 50
Tobaty.....		25 15 26	57 06 05
Caraguatay ...	6° 51′ E.	25 14 00	56 53 09
Est. S. Miguel.		24 55 49	56 34 47
S. Estanislado .	6° 56′ E.	24 40 00.7	56 32 00
San Joaquim ..	7° 42′ E.	25 01 49	56 05 09
Yhu	6° 50′ E.	25 03 13	55 58 55
Caaguazu	5° 00′ E.	25 28 33	56 05 35
Villa Rica.....	7° 34′ E.	25 47 10	56 30 20
Yuty	7° 48′ E.	26 37 05	56 18 42
San Pedro.....		26 50 05	56 16 47
Camgo.....		26 55 47	56 17 47
Carmen.....		27 12 30	56 14 21
San Cosmó	7° 35′ E.	27 19 09	56 24 48
Santiago	7° 04′ E.	27 07 39	56 50 21
S. Maria de Fu		26 46 51	57 05 17
San Miguel....	7° 12′ E.	26 31 59	57 09 24
Iron Works, "Fabrica" .		26 05 32	57 57 27

ELEVATIONS BY BAROMETRICAL MEASUREMENTS.

Asuncion, above Buenos Ayres.....	182 feet.	Wisner's estancia, above B. Ayres	328 feet.
Villa Rica, " "	580.7 "	" " " Asuncion....	146 "
Villa Rica, above Asuncion.....	398.7 "		

RIVER URUGUAY.

	Lat. S.	Long. W.
Higueritas	33 52 25.2	58 25 55.5
Mouth of the Rio Negro	33 21 33	58 25 37
At Cerito Estan. "	33 18 38	58 13 37.5
Mercedes, Rio Negro...	33 15 40	57 59 40
Point Diamante	33 10 40	58 23 00
Frey Bentos.....	33 07 13.5	58 20 25
Gualaguaychu.....	33 00 35	58 32 16
Concepcion del Uruguay	32 29 32	58 14 55
Paisandu.....	32 18 24	58 07 27.7
Estancia Campbell.....	32 04 45	58 10 06.7
Concordia	31 24 44	58 01 28.5
Salto del Uruguay	31 23 20	57 59 39

ENTRE RIOS.

	Lat. S.	Long. W.
Victoria (Puerto de las Sauses)	32 39 53	60 12 07.5
Island in the Palm Riacho	33 14 28	59 46 46
Gualaguay (Puerto de Ruiz)	33 13 37	59 21 10
City of Cordova	31 24 00	64 09 00
" Tucuman	26 51 00	66 00 00
" Santiago del Estero	27 46 20	64 22 15

APPENDIX O.

METEOROLOGICAL OBSERVATIONS.

EXPLANATIONS OF TABLES.

The barometric and thermometric computations are the result of eight daily observations made at 3 A.M., 6 A.M., 9 A.M., noon, 3 P.M., 6 P.M., 9 P.M., and midnight; and the *mean* ranges given only for some prominent places, such as Asuncion, Buenos Ayres, etc., where the steamer remained long enough to admit of a series of observations being made.

The *direction* and *force* of the wind were also noted at those times, and the name and strength of that most prevalent set down in the column, according to the following scale:

SCALE OF WINDS.

Number.	Miles per hour.	Technical description.
1	2	Very light breeze.
2	4	Gentle breeze.
3	12	Fresh breeze.
4	25	Strong wind.
5	35	High wind.
6	45	Gale.
7	60	Strong gale.
8	75	Violent gale.
9	90	Hurricane.
10	100	Most violent hurricane.

Similar observations were made of the state of the weather. By *clear* days is meant that at least two thirds of the sky is unclouded; by *cloudy*, a larger part cloudy than clear; and by *rainy* days, that more or less rain then fell, without reference to quantity.

Letters are used to designate the state of the weather, and denote as follows: f. foggy; F. thick fog; l. lightning; m. misty; q. squally; t. thunder; h. hazy. A * appended to any letter indicates an extraordinary degree.

The altitude above the sea, given in the column headed *Alt.*, is that of the river at that place.

The observations at Buenos Ayres were made by Dr. Kennedy in connection with those taken at other points of the exploration. Altitude of the observatory, sixty feet above the sea.

Place.	Lat. S.	Long. W.	Alt. Ft.	Day.	Bar. Inch.	Therm. Max.	Therm. Min.	Wind. Direction and Force.	Weather. Clr.	Cldy.	Rain.	Remks.
River Parana ..	.....	.....	...	1	.....	..	..	.....	..	..	..	...
"	33 53 00	59 00 31		2	30.10	67	52	S. 3		1		f.
"	33 40 00	59 27 28		3	29.98	67	50	N. 4		1		m.
Near San Pedro	33 41 00	59 39 34	82	4	30.14	63	48	S.E. 4		1		l.
River Parana ..	33 15 17	60 15 21		5	.03	72	45	N.E. 2		1		f.
"				6	29.89	67	60	N.E. 1		1		
Rosario	32 56 44	60 36 04	100	7	.94	64	54	S.E. 6		1		m.
River Parana ..				8	30.27	56	45	S.E. 5			1	l.
Las Vacas.....	32 10 00	60 41 43		9	.23	60	45	S.E. 3		1		
Diamante.....	32 04 04	60 38 56	127	10	29.91	55	47	S.S.E. 3			1	
½ W. of Parana.	31 42 54	60 32 39	132	11	.97	60	51	S. 3	1			
River Parana ..	31 24 00	60 68 25		12	.77	70	47	N. by E. 2	1			
"	30 59 00	59 53 03		13	.88	77	55	E. 3	1			
La Paz	30 44 08	59 38 42	160	14	.91	76	51	E. 2	1			
"				15	.92	79	46	E. by N. 1	1			
River Parana ..	30 10 21	59 39 39		16	.75	75	52	N.N.E. 2	1			
"				17	.76	72	56	S.E. 2	1			
Near Goya.....	29 07 00	59 21 20		18	.78	75	61	S.E. 3		1		
River Parana ..	28 46 00	59 12 00		19	.68	70	59	E. 3			1	m.
Bella Vista.....	28 29 00	59 07 01	220	20	.80	66	58	S.E. 4			1	m.
River Parana ..	28 06 00	59 07 00		21	.70	73	59	E. by N. 1			1	
"	27 27 27	58 54 10		22	.75	72	64	S.E. 3			1	t.l.
Corrientes	27 27 31	58 52 51	248	23	.57	71	65	S. 3			1	
"				24	.69	72	62	S. 1			1	
"				25	.78	71	59	S.S.E. 1		1		
Cerito	27 17 32	58 39 32		26	.71	80	60	N.E 1	1			
River Paraguay	26 59 42	58 30 06		27	.74	79	63	S.E. 3	1			
Pilar	26 51 09	58 22 35	268	28	.71	80	60	N.E. 1	1			
Villa Franca...	26 18 41	No obs.		29	.80	83	60	S.E. 3	1			
Villa Villeta ...	25 29 29	57 37 42		30	.68	89	60	N.E. 2		1		
									11	10	8	

Place.	Lat. S.	Long. W.	Alt. Ft.	Day.	Bar. Inch.	Therm. Max.	Therm. Min.	Wind. Direction and Force.	Weather. Clr.	Cldy.	Rain.	Remks.
River Paraguay	.....	.....	...	1	29.74	85	67	N.E. 1			1	
"	.....	.....	...	2	.69	76	69	N.E. 1			1	
Asuncion*	25 16 29.7	57 42 42	307	3	.57	81	72	S.E. 2			1	
"	.....	.....		4	.52	94	72	E.N.E. 2		1		
"	.....	.....		5	.60	95	71	E. 2				
"	.....	.....		6	.71	85	70	S. 1		1		
"	.....	.....		7	.78	70	65	S.S.E. 3			1	
"	.....	.....		8	.80	70	61	S.S.W. 3			1	q.
"	.....	.....		9	.75	72	61	S. 2.		1		q.
"	.....	.....		10	.63	78	58	S. 1	1			
"	.....	.....		11	.76	82	67	S. 1	1			
"	.....	.....		12	.70	90	68	S. by E. 1	1			
"	.....	.....		13	.67	81	75	N.E. 2		1		
"	.....	.....		14	.71	92	73	N.E. 1	1			
"	.....	.....		15	.67	92	75	E. 1	1			
"	.....	.....		16	.58	94	77	N. by E. 2			1	
"	.....	.....		17	.65	78	68	S. by W. 2		1		
"	.....	.....		18	.78	77	64	S.E. 2	1			
"	.....	.....		19	.80	79	64	S.S.E. 1	1			
"	.....	.....		20	.74	80	62	E. by N. 1	1			
"	.....	.....		21	.64	89	67	N.E. 2		1		
"	.....	.....		22	.72	74	66	S.E. 1			1	
"	.....	.....		23	.61	90	64	N. by E. 1	1			
"	.....	.....		24	.62	89	72	E. by N. 1	1			
"	.....	.....		25	.66	89	67	S.S.E. 2	1			
"	.....	.....		26	.70	86	64	E.S.E. 3			1	t.l.
"	.....	.....		27	.73	77	64	E.S.E. 2	1			
"	.....	.....		28	.66	85	70	E.N.E. 3	1			
"	.....	.....		29	.71	89	71	N.E. 1	1			
"	.....	.....		30	.64	96	74	N.E. 2		1		
"	.....	.....		31	.62	85	71	S'd and E'd 3			1	q.
									14	7	9	

* The city of Asuncion is elevated 63 feet above the bank of the river.

NOVEMBER, 1853.] METEOROLOGICAL OBSERVATIONS MADE ON BOARD U. S. S. WATER WITCH. [DECEMBER, 1853.

Place.	Lat. S.	Long. W.	Alt. Ft.	Day.	Bar. Inch.	Therm. Max.	Therm. Min.	Wind. Direction and Force.	Weather. Clr.	Cldy.	Rain.	Remks.
River Paraguay	.....	.....		1	29.59	93	71	N. 3	1			
"	.....	.....		2	.58	85	71	S. 6			1	t.l.
Asuncion	25 16 29.7	57 42 42	307	3	.72	89	68	E. by S. 1	1			
"	.....	.....		4	.68	90	71	E.N.E. 2	1			
"	.....	.....		5	.58	95	76	N.E. 1	1			
"	.....	.....		6	.60	98	77	N.E. 2	1			
"	24 54 32	57 18 54		7	.54	101	78	N. 3	1			
Above Asuncion	24 48 28	57 20 53		8	.45	94	75	N. 2		1		m.
"	.....	.....		9	.50	79	70	S.E. 5		1		q.
"	.....	.....		10	.48	90	75	N.E. 2			1	
"	.....	.....		11	.49	90	71	N. 2		1		q.
Concepcion	23 23 56	57 30 59	330	12	.63	81	69	S.E. 2			1	q.
"	.....	.....		13								
"	.....	.....		14								
River Paraguay	.....	.....		15	29.51	95	76	N.N.E. 2		1		
Salvador.....	22 48 45	57 52 12	333	16	.41	95	78	N.N.W. 3		1		
Above Salvador.	22 45 33	57 57 31		17	.44	99	75	N.N.W. 2		1		
"	21 47 18	57 59 49		18	.47	97	75	S.E. 3			1	t.l.
"	.....	.....		19	.59	79	68	S. by W. 4			1	
Pan de Azucar*	21 25 10	57 58 54	310	20	.60	81	66	S. 1		1		
"	.....	.....		21	.....	...	..					
Olimpo	21 01 39	57 55 40	366	22	29.49	90	70	S.E. 1	1			
Salinas	20 36 24	58 05 39		23	.47	93	76	E. 1		1		m.
Bahia N. mouth	20 10 14	58 17 21		24	.49	94	81	N.E. 2	1			
In the river....	19 52 42	58 16 34		25	.50	94	80	N.N.E. 2	1			
Highest p. rea'd	19 50 53	58 15 29		26	.48	95	80	N.N.E. 1	1			
River Paraguay	.....	.....		27	.48	89	75	E. by N. 2		1		
Coimbra	19 55 43	57 52 34	383	28	.....	...	..					
Albuquerque...	19 26 53	57 28 31	390	29	.43	90	76	W. by N. 1	1			
Corumba	18 59 43	57 44 36	396	30	.42	91	72	S'd and E'd		1		
									11	10	5	

Place.	Lat. S.	Long. W.	Alt. Ft.	Day.	Bar. Inch.	Therm. Max.	Therm. Min.	Wind. Direction and Force.	Weather. Clr.	Cldy.	Rain.	Remks.
Corumba	18 59 43	57 44 36	396	1	29.46	91	79	S.E. 2	1			
"	.....	.....		2	.48	91	78	S.E. 1	1			m.
"	.....	.....		3	.45	92	73	N.E. 1		1		
Albuquerque...	19 26 53	57 28 31	390	4	.43	93	77	Variable 1		1		m.
"	.....	.....		5	.49	96	76	N. 1		1		l. .
"	.....	.....		6	.48	94	75	N.E. 1		1		l.
"	.....	.....		7	.43	93	79	N.E. 1		1		l.m.
Coimbra	19 55 43	57 52 34	383	8	.46	83	75	N.E. 1			1	q.
"	.....	.....		9	.48	86	75	N.W. 2		1		
"	.....	.....		10	.47	93	76	N.E. 1		1		l.
River Paraguay	.....	.....		11	.53	90	77	W.S.W. 2			1	t.l.q.
"	.....	.....		12	.58	92	75	S. 2		1		
"	.....	.....		13	.58	96	73	S.E. 3		1		
"	.....	.....		14	.57	100	72	N.E. 1		1		
Salvador.....	22 48 45	57 52 12	338	15	.51	100	80	N. by E. 2		1		
River Paraguay	.....	.....		16	.48	93	76	N.E. 2		1		
Concepcion	23 23 56	57 30 59	330	17	.44	96	76	N. 4			1	l q.
River Paraguay	.....	.....		18	.49	92	79	N. 2			1	t.l.
"	.....	.....		19	.43	82	71	N.W. 3			1	
"	.....	.....		20	.59	81	71	S.W. 2		1		m.
Asuncion	25 16 29.7	57 42 42	307	21	.57	85	70	S. 2		1		
"	.....	.....		22	.54	86	72	E.N.E. 1	1			
"	.....	.....		23	.48	94	74	E.N.E. 1		1		q.t.l.
"	.....	.....		24	.60	80	70	S.S.E. 1			1	q.t.l.
"	.....	.....		25	.60	89	68	S. 3		1		
"	.....	.....		26	.57	93	72	Calm.		1		
"	.....	.....		27	.61	93	76	Calm.		1		
"	.....	.....		28	.69	94	70	S.S.E. 1	1			
"	.....	.....		29	.69	88	64	S.S.E. 2		1		m.
"	.....	.....		30	.60	90	74	E. by N. 1		1		
"	.....	.....		31	.55	96	80	E. by S. 1		1		m.
									4	21	6	

* Summit of Pan de Azucar, 1355 feet.

N.B.—From the observations made in 1853, '54, and '55, the mean range of the barometer at Asuncion is 29.67; thermometer, 76°.

Place.	Lat. S.	Long. W.	Alt. Ft.	Day.	Bar. Inch.	Therm. Max.	Therm. Min.	Wind. Direction and Force.	Weather. Clr.	Cldy.	Rain.	Remks.
Asuncion	25 16 29.7	57 42 42	307	1	29.55	94	78	N.E. 1		1		m.
" ..	.....	.....		2	.53	92	82	Variable 1			1	q.
" ..	.....	.....		3	.47	95	80	N. 1		1		m.
" ..	.....	.....		4	.58	85	76	S.S.E. 1			1	q.t.l.
" ..	.....	.....		5	.64	83	70	S.E. 1	1			
" ..	.....	.....		6	.58	93	70	N'd & E'd 1		1		
" ..	.....	.....		7	.46	85	75	N'd & E'd 1			1	t.l.
" ..	.....	.....		8	.56	78	70	S. by E. 2			1	r.t.l.
" ..	.....	.....		9	.77	80	66	S. 2		1		
" ..	.....	.....		10	.68	86	70	S.E. 1	1			
" ..	.....	.....		11	.52	91	74	N.E. 1		1		
" ..	.....	.....		12	.44	93	75	N'd & E'd 1			1	r.q.
" ..	.....	.....		13	.69	79	63	S. by W. 2		1		m.
" ..	.....	.....		14	.87	78	60	S. 1		1		m.
" ..	.....	.....		15	.75	82	63	S. 1		1		m.
" ..	.....	.....		16	.62	88	70	N.E. 2		1		m.
" ..	.....	.....		17	.55	90	73	N. 1		1		
" ..	.....	.....		18	.63	82	70	S.S.E. 1			1	q.t.l.m.
" ..	.....	.....		19	.70	86	68	S.S.E. 1		1		m.
" ..	.....	.....		20	.70	86	66	S. 1	1			m.
" ..	.....	.....		21	.65	93	71	E.N.E. 1	1			m.
" ..	.....	.....		22	.58	92	79	N.E. 2		1		
" ..	.....	.....		23	.54	90	79	N.E. 3		1		l.
" ..	.....	.....		24	.57	87	74	E. by S. 1			1	l.t.r.
" ..	.....	.....		25	.61	89	77	N.E. 1			1	
" ..	.....	.....		26	.58	89	78	N. 1			1	q.
" ..	.....	.....		27	.53	94	76	N. by E. 2		1		
" ..	.....	.....		28	.53	92	79	N. 2			1	q.l.
" ..	.....	.....		29	.65	81	72	S.S.E. 1			1	q.m.
" ..	.....	.....		30	.68	90	74	S. 1		1		m.f.
" ..	.....	.....		31	.66	95	78	S.		1		
									3	17	11	

Place.	Lat. S.	Long. W.	Alt. Ft.	Day.	Bar. Inch.	Therm. Max.	Therm. Min.	Wind. Direction and Force.	Weather. Clr.	Cldy.	Rain.	Remks.
River Paraguay	.....	.....	Height not ascertained.	1	29.72	91	78	N. 1		1		
"	.....	.....		2	.63	94	74	S. by W. 3			1	m.q.
River Parana ..	.....	.....		3	.79	85	73	S. 1		1		
La Paz	30 44 08	59 38 42		4	.86	86	60	E. by S. 2		1		m.
"	.....	.....		5	.83	84	62	E. by N. 1		1		
Parana	.....	.....		6	.77	80	62	Variable 1		1		
River Parana ..	.....	.....		7	.85	91	74	S'd and E'd 3		1		
Martin Garcia .	34 10 53.7	58 16 28.6		8	30.00	80	62	E.N.E. 2	1			m.
Buenos Ayres..	34 36 14	58 23 00		9	29.93	82	66	E.N.E. 4		1		m.
"	.....	.....		10	.87	79	70	N.E. 3		1		m.
"	.....	.....		11	.77	75	71	N.E. 3			1	
Monte Video ...	34 54 08	56 13 00		12	.65	78	69	N.W. to S.E. 4			1	q.
"	.....	.....		13	.72	79	68	S.W. 4		1		
"	.....	.....		14	.80	85	68	W.S.W. 1	1			
"	.....	.....		15	.78	82	71	Variable 2			1	q.
"	.....	.....		16	.83	82	70	S'd and E'd 3			1	
"	.....	.....		17	.92	76	68	E.S.E. 1		1		
"	.....	.....		18	.65	90	61	N.W. 2		1		
"	.....	.....		19	.58	77	64	S.W. 7			1	q.
"	.....	.....		20	.86	70	62	S.W. 5		1		c.
"	.....	.....		21	30.10	80	62	S. 2		1		
"	.....	.....		22	.11	72	59	Variable 1		1		
"	.....	.....		23	29.96	88	61	Variable 1		1		
"	.....	.....		24	.69	78	60	N. by E.		1		
"	.....	.....		25	.65	81	66	N.W. 4		1		
"	.....	.....		26	.76	85	63	N'd and W'd 2		1		
"	.....	.....		27	.74	74	68	S.E. 4			1	
"	.....	.....		28	30.07	70	66	S.E. 3		1		
									2	19	7	

N.B.—Mean range of barometer at Monte Video, 29.93; of thermometer, 63½° : the minimum barometer, 29.58, at Monte Video on February 19th.

Place.	Lat. S.	Long. W.	Alt. Ft.	Day.	Bar. Inch.	Therm. Max.	Therm. Min.	Wind. Direction and Force.	Weather. Clr.	Weather. Cldy.	Weather. Rain.	Remks.
Monte Video .	34 54 08	56 13 00	Height not ascertained.	1	30.15	73	60	E'd 1	1			
" ..	.....	.....		2	.10	75	60	N.E. 2	1			
" ..	.....	.....		3	.45	76	61	E'd 1		1		
" ..	.....	.....		4	.04	71	61	S.S.E. 8			1	
" ..	.....	.....		5	.11	67	58	S.E. 3		1		
" ..	.....	.....		6	.03	70	57	E'd 4	1			
" ..	.....	.....		7	29.89	74	61	E. by N. 3	1			
" ..	.....	.....		8	.87	71	60	S'd 3	1			
" ..	.....	.....		9	.97	71	60	N'd and E'd 3	1			
" ..	.....	.....		10	.87	81	60	N.E. 4	1			
" ..	.....	.....		11	.77	75	68	N.E. to S.E. 7		1		
" ..	.....	.....		12	.93	76	64	S. 3		1		
" ..	.....	.....		13	30.13	65	60	S. 6	1			
" ..	.....	.....		14	.17	72	52	Variable 2		1		m.
" ..	.....	.....		15	.14	75	56	N.E. 2	1			
" ..	.....	.....		16	29.98	76	57	N.E. 4			1	l.h.
" ..	.....	.....		17	.86	77	67	N'd 1		1		
" ..	.....	.....		18	.85	81	69	Variable 1	1			h.
" ..	.....	.....		19	.85	75	68	N.N.E. 2			1	q.
" ..	.....	.....		20	.99	77	62	S.E. 8			1	
" ..	.....	.....		21	30.23	71	56	S.E. 7		1		q.
" ..	.....	.....		22	.32	65	55	S.E. 5		1		
" ..	.....	.....		23	.26	74	54	E'd 3		1		
" ..	.....	.....		24	.24	77	60	N'd and E'd 5	1			
" ..	.....	.....		25	.10	77	62	N.E. 4		1		
" ..	.....	.....		26	.02	76	63	N.E. to S.W. 2	1			
" ..	.....	.....		27	29.98	78	63	S'd 5	1			
" ..	.....	.....		28	30.00	82	58	Variable 1	1			
" ..	.....	.....		29	30.00	73	56	E'd 2		1		m.
" ..	.....	.....		30	29.99	82	60	N'd 2		1		
" ..	.....	.....		31	29.92	78	62	N'd and E'd 3		1		
									14	13	4	

Place.	Lat. S.	Long. W.	Alt. Ft.	Day.	Bar. Inch.	Therm. Max.	Therm. Min.	Wind. Direction and Force.	Weather. Clr.	Weather. Cldy.	Weather. Rain.	Remks.
Monte Video .	34 54 08	56 13 00		1	29.71	83	63	N.E. to S.W. 2			1	m.
" ..	.....	.....		2	.62	65	51	S.W. 8			1	
" ..	.....	.....		3	.79	61	56	W.S.W. to N.W. 8			1	
" ..	.....	.....		4	.86	81	55	Variable 2		1		
" ..	.....	.....		5	.77	80	60	N.W. 3		1		
" ..	.....	.....		6	.79	77	60	Variable 5			1	q.l.t.
" ..	.....	.....		7	.97	65	60	S.E. 5			1	
" ..	.....	.....		8	.94	80	61	S. 3		1		
" ..	.....	.....		9	.87	69	62	E'd 1		1		m.
" ..	.....	.....		10	.89	70	55	S.E. 10			1	
" ..	.....	.....		11	30.18	66	57	S.E. 7		1		
" ..	.....	.....		12	29.96	61	58	S.E. 5		1		
Buenos Ayres	34 36 14	58 23 00	50	13	30.04	60	56	S.S.E. 7		1		
" ..	.....	.....		14	.01	63	58	S.W. to N.E. 1		1		
" ..	.....	.....		15	29.97	71	61	E'd 2		1		
" ..	.....	.....		16	.87	72	60	N.W. 1		1		
River Parana	.....	.....		17	.80	72	60	N. 3		1		
" ..	.....	.....		18	.69	77	65	N. by W. 3		1		
" ..	.....	.....		19	.83	72	61	S'd and E'd 5		1		
" ..	.....	.....		20	30.12	80	57	S'd and E'd 4		1		
La Paz.....	30 44 08	59 38 42	110	21	.11	83	55	N.E. 4		1		
" ..	.....	.....		22	29.93	81	59	N.E. to S.W. 1		1		
" ..	.....	.....		23	30.02	84	51	S.E. 1		1		
River Parana	.....	.....		24	29.97	77	65	N.E. 3		1		
" ..	.....	.....		25	.80	77	65	N.E. to S.E. 6			1	t.l.
Bella Vista...	28 29 00	59 07 01.6	170	26	.74	75	67	Variable 4			1	l.
River Parana	.....	.....		27	.73	81	67	S. 4		1		
Corrientes ...	27 27 31	58 52 51	198	28	.60	69	62	S'd and E'd 4			1	
Riv. Paraguay	.....	.....		29	.85	72	57	E'd 1		1		
" ..	.....	.....		30	.86	83	60	S'd and E'd 1		1		
										20	10	

The maximum barometer at Monte Video, viz., 30.45, occurred on the 3d of March.

Place.	Lat. S.	Long. W.	Alt. Ft.	Day.	Bar. Inch.	Therm. Max.	Therm. Min.	Wind. Direction and Force.	Weather. Clr.	Cldy.	Rain.	Remks.
River Paraguay	.....	.....		1	29.84	85	62	Variable 1		1		
Asuncion	25 16 29.7	57 42 42	307	2	.81	81	56	S'd and E'd 1		1		
"	.....	.....		3	.78	78	61	S'd and E'd 1		1		
"	.....	.....		4	.70	77	68	E'd 2		1		
"	.....	.....		5	.61	73	70	N.E. 3			1	
"	.....	.....		6	.58	85	70	E. by N. 2		1		
"	.....	.....		7	.41	84	55	N'd 3		1		
"	.....	.....		8	.57	81	62	N. to S.E. 4		1		
"	.....	.....		9	.87	70	55	S'd and E'd 3		1		
"	.....	.....		10	.83	80	52	E'd 1	1			
"	.....	.....		11	.80	91	61	Variable 1		1		
"	.....	.....		12	.85	82	65	N'd and E'd 2		1		
"	.....	.....		13	.82	83	62	E. by N. 1	1			
"	.....	.....		14	.85	68	49	S.E. 3		1		h.
"	.....	.....		15	.95	68	53	S.E. 3		1		h.
"	.....	.....		16	.93	77	46	N'd and E'd 1		1		
"	.....	.....		17	.83	74	53	N.E. 2		1		
"	.....	.....		18	.78	71	56	N.E. 3	1			
"	.....	.....		19	.82	87	67	N.E. to S.E. 1		1		
"	.....	.....		20	.67	81	65	N'd and E'd 2		1		
"	.....	.....		21	.59	81	64	N.E. 2		1		
"	.....	.....		22	.66	77	60	E'd 1			1	
"	.....	.....		23	.78	80	61	N.E. 1	1			
"	.....	.....		24	.70	82	61	N.E. 3		1		
"	.....	.....		25	.72	86	69	N.E. 3	1			
"	.....	.....		26	.80	89	71	N.E. 2		1		
"	.....	.....		27	.74	89	70	E'd 1		1		
"	.....	.....		28	.78	89	71	N'd and E'd 1		1		
"	.....	.....		29	.67	91	71	Variable 1		1		
"	.....	.....		30	.68	79	70	N.E. 1			1	
"	.....	.....		31	.82	67	65	S'd and E'd 1			1	h.
									5	22	4	

Place.	Lat. S.	Long. W.	Alt. Ft.	Day.	Bar. Inch.	Therm. Max.	Therm. Min.	Wind. Direction and Force.	Weather. Clr.	Cldy.	Rain.	Remks.
Asuncion	25 16 29.7	57 42 42	307	1	29.81	63	59	S.E. 1			1	
" ..	.....	.....		2	.76	65	59	S.W. 1			1	
" ..	.....	.....		3	.77	69	60	N'd and E'd 1			1	
" ..	.....	.....		4	.72	69	60	Variable 1			1	
" ..	.....	.....		5	.79	82	61	S'd and E'd 1		1		
" ..	.....	.....		6	.86	84	66	E'd 1		1		
" ..	.....	.....		7	.77	85	60	E'd 1	1			
" ..	.....	.....		8	.55	82	63	N.E. 3		1		
" ..	.....	.....		9	.66	87	66	S'd 2		1		
" ..	.....	.....		10	.87	81	64	S.E. 1		1		
" ..	.....	.....		11	.96	74	53	S.E. 1		1		
" ..	.....	.....		12	.92	80	61	N.E. 2		1		
" ..	.....	.....		13	.91	80	61	N.E. 2		1		
" ..	.....	.....		14	.89	85	62	N.E. 3	1			
" ..	.....	.....		15	.94	83	64	N.E. 2	1			
" ..	.....	.....		16	.87	90	64	N.E. 3	1			
" ..	.....	.....		17	.82	89	59	N.E. 2		1		
" ..	.....	.....		18	.85	78	59	N.E. 2		1		
" ..	.....	.....		19	.85	85	68	N.E. 2		1		
" ..	.....	.....		20	.74	87	63	E.N.E. 2		1		
" ..	.....	.....		21	.70	82	69	N'd and E'd 1		1		
" ..	.....	.....		22	.79	73	67	S.E. 1			1	
" ..	.....	.....		23	.84	81	63	E.N.E. 1		1		
" ..	.....	.....		24	.76	79	65	N'd and E'd 1		1		
" ..	.....	.....		25	.75	81	70	N.E. 1		1		
" ..	.....	.....		26	.87	70	60	E'd 3			1	
" ..	.....	.....		27	.88	71	61	S'd and E'd 1		1		
" ..	.....	.....		28	.76	76	65	N.E. 1		1		
" ..	.....	.....		29	.74	79	62	N.E. 1		1		
" ..	.....	.....		30	.78	74	60	E.N.E. 1		1		
" ..	.....	.....							4	20	6	

N.B.—The maximum barometer at Asuncion, 29.95, occurred on May 15th: the minimum, 29.41, May 7th: minimum thermometer, 46°, May 16th.

Place.	Lat. S.	Long. W.	Alt. Ft.	Day.	Bar. Inch.	Therm. Max.	Therm. Min.	Wind. Direction and Force.	Weather. Clr.	Weather. Cldy.	Weather. Rain.	Remks.
Asuncion	25 16 29.7	57 42 42	307	1	29.76	84	63	N.E. 1		1		
"	"	"		2	.77	76	60	E.N.E. 1		1		
"	"	"		3	.66	78	66	E.N.E. 3		1		
"	"	"		4	...	..	..	.....				
"	"	"		5	.57	76	63	N.E. to S.W. 1			1	
"	"	"		6	.71	77	62	S. by E. 1		1		
"	"	"		7	.83	87	60	E.N.E. 1		1		
"	"	"		8	.75	78	61	N.E. 2		1		
"	"	"		9	.78	86	70	E'd 1		1		
"	"	"		10	.68	84	66	N.E. 1	1			
"	"	"		11	.66	81	67	E'd 3		1		
"	"	"		12	.61	82	72	N.E. 8		1		
"	"	"		13	.65	72	56	S. by W. 1			1	
River Paraguay	"	"		14	.86	68	54	S.W. 3			1	f.
"	"	"		15	.86	67	46	Variable 1		1		f.
Corrientes	27 27 31	58 52 51	248	16	.68	81	58	S'd and E'd 1		1		
"	"	"		17	.91	69	45	S.S.E. 3			1	
"	"	"		18	30.15	63	45	S.E. 1	1			
"	"	"		19	.03	64	52	N'd and E'd 1		1		
"	"	"		20	.04	64	52	E'd 1			1	
"	"	"		21	30.00	66	55	N'd and E'd 1			1	
"	"	"		22	29.82	68	61	S'd and E'd 1			1	
"	"	"		23	30.06	62	52	S.S.W. 2			1	
"	"	"		24	.15	55	49	S.E. 3			1	
"	"	"		25	.11	57	48	S.E. 2		1		
"	"	"		26	.08	63	46	S.E. 1		1		f.
"	"	"		27	.06	64	48	S.E. 2		1		
"	"	"		28	.04	70	51	E'd 1		1		
"	"	"		29	.06	65	60	E'd 2			1	
"	"	"		30	.06	58	55	S.W. 2			1	
"	"	"		31	.07	60	52	W.S.W. 3			1	h.
									1	17	12	

Place.	Lat. S.	Long. W.	Alt. Ft.	Day.	Bar. Inch.	Therm. Max.	Therm. Min.	Wind. Direction and Force.	Weather. Clr.	Weather. Cldy.	Weather. Rain.	Remks.
Corrientes	27 27 31	58 52 51	248	1	30.06	80	56	S.W. to N.E. 1		1		
"	"	"		2	.06	79	56	N.E. 3		1		
"	"	"		3	.04	80	56	N.E. 2		1		
"	"	"		4	.04	80	62	N.E. 3	1			
"	"	"		5	29.49	85	62	N. by E. 3	1			
"	"	"		6	.51	78	63	S'd 3			1	m.h.t.l.
"	"	"		7	.91	75	60	S.E. 1			1	t.l.
"	"	"		8	.87	78	60	N.E.	1			
"	"	"		9	30.02	72	54	S.E. 1		1		
"	"	"		10	29.97	65	53	S.E. 2			1	
"	"	"		11	.86	60	51	S.W. 2			1	
"	"	"		12	30.01	73	53	S'd 1	1			
"	"	"		13	30.00	73	50	E'd 1	1			
"	"	"		14	29.84	63	50	N'd and E'd 1	1			
"	"	"		15	.72	80	55	N.E. 2		1		
"	"	"		16	.68	84	60	N. by E. 8		1		h.
"	"	"		17	.45	86	64	N.E. to S.W. 3	1			
"	"	"		18	.67	69	55	S.W. to S.E. 2			1	
"	"	"		19	.72	66	60	S.E. 1		1		
"	"	"		20	.66	77	60	S.E. 2		1		
"	"	"		21	.64	67	62	S.E. 2			1	
"	"	"		22	.65	64	61	S'd and W'd 2			1	
"	"	"		23	.67	64	60	S.W. 3			1	
"	"	"		24	.79	64	54	S.W. to S.E. 3			1	
"	"	"		25	.99	59	50	S.W. to S.E. 2			1	
"	"	"		26	.97	66	49	E'd 2	1			
"	"	"		27	.98	69	50	S.E.		1		
"	"	"		28	30.02	71	47	E. by S. 1	1			
"	"	"		29	29.97	71	50	N'd and E'd 1	1			
"	"	"		30	.76	81	54	N'd and E'd 1	1			
"	"	"		31	81	76	56	S'd and E'd 1		1		
									11	10	10	

N.B.—30.15, the maximum barometer at Corrientes, occurred July 18th, and the minimum thermometer, 45°, on the same day.

N.B.—The mean range of barometer at Corrientes, 29.79; thermometer, 71° Fahr.

Place.	Lat. S.	Long. W.	Alt. Ft.	Day.	Bar. Inch.	Therm. Max.	Therm. Min.	Wind. Direction and Force.	Weather. Clr.	Weather. Cldy.	Weather. Rain.	Remks.
Corrientes	27 27 31	58 52 51	248	1	29.68	75	53	E.S.E. 2		1		
"				2	.73	61	58	S'd 3			1	
"				3	.75	64	57	S'd 2			1	
"				4	.68	73	56	Variable 2		1		
"				5	.72	69	53	S.W. 7			1	
"				6	.89	72	51	S.W. 5		1		
"				7	.95	80	56	N.E. 1	1			
"				8	.97	80	56	N.E. 1	1			
"				9	30.02	74	58	E'd 1	1			
"				10	29.93	82	57	N.E. 1		1		
"				11	.73	78	61	N'd 5	1			
"				12	.76	93	60	N'd and E'd 1	1			
"				13	.95	63	57	S'd and E'd 2			1	
"				14	.40	68	62	S'd and W'd 1			1	
"				15	.89	68	56	S'd and E'd 1			1	
"				16	.80	83	65	S'd and E'd 1			1	
River Paraguay				17	30.01	97	65	S'd and E'd 2			1	
"				18	29.70	89	68	E'd 4			1	
"				19	.67	85	69	N'd and E'd 3			1	
Asuncion	25 16 29.7	57 42 42	307	20	.80	83	69	Variable 3			1	
"				21	.74	89	71	N.E. 1	1			
"				22	.79	89	70	S.E. 2			1	
"				23	.56	88	63	N.E. 3			1	
"				24	.58	86	70	N.E. 4			1	t.l.
"				25	.72	75	68	S. by E. 1			1	
"				26	.74	87	65	E'd 1	1			
"				27	.77	82	69	E'd 1			1	
"				28	.75	85	70	S'd and E'd 1		1		
"				29	.66	94	69	N'd and E'd 1	1			
"				30	.70	82	70	S'd and E'd			1	
									8	10	12	

Place.	Lat. S.	Long. W.	Alt. Ft.	Day.	Bar. Inch.	Therm. Max.	Therm. Min.	Wind. Direction and Force.	Weather. Clr.	Weather. Cldy.	Weather. Rain.	Remks.
				1								
				2								
				3								
Riv. Paraguay	.....	.....		4	29.72	79	68	S.E. 1		1		
Corrientes	27 27 31	58 52 51	248	5	.60	74	64	S.W. 6	1			
"	.....	.....		6	.64	74	64	S.W. 7	1			m.
"	.....	.....		7	.80	69	57	S.W. 3		1		
"	.....	.....		8	.99	73	57	S.W. 2	1			
"	.....	.....		9	.99	80	59	N'd and E'd 1	1			
"	.....	.....		10	.92	91	60	N'd and E'd 1	1			
"	.....	.....		11								
"	.....	.....		12	.82	95	70	N'd and E'd 1	1			
"	.....	.....		13	.73	97	72	N.E. to S.W. 2			1	
"	.....	.....		14	.76	76	70	S'd and E'd 1			1	l.
"	.....	.....		15	.73	73	60	S'd 4			1	
"	.....	.....		16	.99	74	61	S.E. 4	1			
"	.....	.....		17	30.02	80	60	N.E. 1	1			
"	.....	.....		18	29.99	83	61	N.E. 1	1			
"	.....	.....		19	.78	86	62	N.E.	1			m.
"	.....	.....		20	.75	94	72	N.E. 1	1			
"	.....	.....		21	.65	79	72	E'd 3			1	t.l.
"	.....	.....		22	.69	74	68	E'd 2			1	
"	.....	.....		23	.79	87	70	S.E. 1	1			
"	.....	.....		24	30.10	86	69	S.E. 4	1			
"	.....	.....		25	29.94	89	67	E.N.E. 1	1			
"	.....	.....		26	.74	93	73	N'd 4	1			
"	.....	.....		27	.81	87	70	S'd and E'd 1	1			
"	.....	.....		28	.74	92	69	N'd and E'd 8			1	t.l.h.
"	.....	.....		29	.68	76	71	N'd and E'd 6			1	
"	.....	.....		30	.72	84	69	Variable 1	1			
"	.....	.....		31	.81	86	72	N.E. to S.E. 1			1	m.
									17	2	8	

N.B.—On September 14th occurred the minimum barometer at Corrientes, viz., 29.40.

N.B.—The maximum thermometer, 97°, at Corrientes, was on the 13th of October.

Place.	Lat. S.	Long. W.	Alt. Ft.	Day.	Bar. Inch.	Therm. Max.	Therm. Min.	Wind. Direction and Force.	Weather. Clr.	Weather. Cldy.	Weather. Rain.	Remks.
Corrientes	27 27 31	58 52 51	248	1	29.83	86	77	S'd and E'd 1		1		
"	.....	.....		2	.81	89	78	S'd and E'd 1	1			
"	.....	.....		3	.63	90	70	N'd and E'd 3	1			
"	.....	.....		4	.56	93	79	N.W. to E. 2			1	
"	.....	.....		5	.73	82	73	Variable 4			1	
"	.....	.....		6	.56	86	71	N'd and E'd 3		1		
"	.....	.....		7	.69	79	65	S.E. 6			1	
"	.....	.....		8	.86	77	65	S.E. 2	1			
"	.....	.....		9	.87	81	65	E'd 2		1		
"	.....	.....		10	.78	82	71	S. by E. 1	1			
"	.....	.....		11	.66	84	73	N.E. 1	1			f.
River Parana ..	.....	.....		12	.68	86	76	E'd 3	1			
"	.....	.....		13	.75	87	74	S.E. 2	1			
"	.....	.....		14	.70	90	72	N'd and E'd 3	1			
"	.....	.....		15	.73	86	68	Variable 1	1			
"	.....	.....		16	.91	76	66	S.E. 4			1	
Buenos Ayres..	34 36 14	58 23 00	50	17	.99	73	58	S.E. to S.W. 1	1			
"	.....	.....		18	.82	80	64	N.W. 4	1			
"	.....	.....		19	.78	80	68	N.W. 2	1			
Monte Video ...	34 54 08	56 13 00		20	.76	84	70	W'd 2		1		
"	.....	.....		21	.80	70	66	S.E. 3			1	
"	.....	.....		22	.88	70	62	S.E. 4			1	
"	.....	.....		23	30.20	60	50	S.E. 7		1		
"	.....	.....		24	.17	72	50	N.N.E. 1	1			
"	.....	.....		25	.02	74	54	N.N.E. 2	1			
"	.....	.....		26	29.99	72	62	E'd 1	1			
"	.....	.....		27	.81	75	61	N.E. to S.W. 5			1	
"	.....	.....		28	.88	70	56	S.E. 4		1		
"	.....	.....		29	.89	70	54	Variable 1	1			
"	.....	.....		30	.96	70	54	E'd 2	1			
									17	6	7	

Place.	Lat. S.	Long. W.	Alt. Ft.	Day.	Bar. Inch.	Therm. Max.	Therm. Min.	Wind. Direction and Force.	Weather. Clr.	Weather. Cldy.	Weather. Rain.	Remks.
Monte Video ...	34 54 08	56 13 00		1	29.88	72	66	N.E. 3	1			
"	.....	.....		2	.91	70	65	S'd and E'd 1	1			
"	.....	.....		3	.93	70	65	N'd and E'd 4		1		
"	.....	.....		4	.88	74	66	E'd 1	1			
"	.....	.....		5	.74	80	66	Variable 4		1		
"	.....	.....		6	.80	70	60	Variable 1	1			
"	.....	.....		7	.87	71	64	E'd 1	1			
"	.....	.....		8	.95	80	54	N.W. 1	1			
"	.....	.....		9	.88	78	60	N.W. 2		1		
"	.....	.....		10	.87	84	64	N.E. 2		1		
"	.....	.....		11	.87	80	60	Variable 1		1		
"	.....	.....		12	30.16	70	62	S'd and E'd 1	1			
"	.....	.....		13	.09	80	60	N'd and E'd 1		1		
"	.....	.....		14	29.87	85	60	N'd and E'd 3	1			f.
"	.....	.....		15	.79	80	65	S.W. 1	1			
"	.....	.....		16	.83	90	64	S'd and E'd 1	1			
"	.....	.....		17	.74	82	76	W'd 1		1		
Buenos Ayres ..	34 36 14	58 23 00	50	18	.78	84	70	N.W.		1		
"	.....	.....		19	.73	90	72	W'd 1		1		
"	.....	.....		20	.70	89	70	S.S.E. 3		1		
River Parana ..	.....	.....		21	.76	76	68	E'd 2		1		
"	.....	.....		22	.71	88	73	Variable 1		1		
"	.....	.....		23	.88	91	60	N'd and E'd 1	1			
"	.....	.....		24	.86	90	84	N.N.E. 2		1		
¾ W. of Parana.	31 42 54	60 32 39		25	.82	90	82	N. 1		1		
"	.....	.....		26	.67	90	70	E'd 1	1			
"	.....	.....		27	.70	90	75	W'd 1		1		
"	.....	.....		28	.68	100	79	S.E. 4		1		
Bella Vista.....	28 29 00	59 07 01.6		29	.66	83	72	S.E. 2	1			
Corrientes	27 27 31	58 52 51		30	.75	90	71	S. 1	1			
				31	.73	94	77	N'd and E'd 1	1			
									15	16		

The maximum thermometer, 90°, at Monte Video, on the 16th of December.

On the 23d occurred the maximum thermometer, 91°, at Buenos Ayres.

Place.	Lat. S.	Long. W.	Alt. Ft.	Day.	Bar. Inch.	Therm. Max.	Therm. Min.	Wind. Direction and Force.	Weather. Clr.	Cldy.	Rain.	Remks.
Corrientes ...	27 27 31	58 52 51	248	1	29.74	85	72	E'd 1	1			
" ..	.....	.....		2	.66	95	79	E.N.E. 3		1		
" ..	.....	.....		3	.60	78	74	Variable 3			1	
" ..	.....	.....		4	.56	92	72	N'd and E'd 1		1		
" ..	.....	.....		5	.51	95	81	N.E. 2		1		
" ..	.....	.....		6	.64	86	75	S.S.E. 4		1		
" ..	.....	.....		7	.61	86	74	E'd 1	1			
" ..	.....	.....		8	.51	94	72	N.E. 2	1			
" ..	.....	.....		9	.70	83	76	S.S.E. 4		1		
" ..	.....	.....		10	.75	84	68	S.E. 3		1		
" ..	.....	.....		11	.66	88	67	S.E. 1		1		
" ..	.....	.....		12	.63	94	70	E'd 1	1			
" ..	.....	.....		13	.65	88	74	Variable 2		1		f.
" ..	.....	.....		14	.65	85	74	S.E. 1		1		f.
" ..	.....	.....		15	.65	90	72	S.E. 1		1		
" ..	.....	.....		16	.67	86	66	S. by E. 3		1		f.
" ..	.....	.....		17	.61	87	79	S.S.W. 1	1			
" ..	.....	.....		18	.61	94	74	S. 1		1		
" ..	.....	.....		19	.52	90	78	E'd 1			1	
" ..	.....	.....		20	.49	91	69	E'd 1		1		
" ..	.....	.....		21	.54	86	76	S.E. to S.W. 2		1		
" ..	.....	.....		22	.59	82	74	Variable 3			1	f.
" ..	.....	.....		23	.62	85	75	W. 1		1		f.
" ..	.....	.....		24	.67	82	70	S.S.W. 4		1		
" ..	.....	.....		25	.79	78	64	S.S.E. 3			1	
" ..	.....	.....		26	.83	81	68	Variable 1	1			
" ..	.....	.....		27	.67	82	70	N'd and E'd 2		1		
" ..	.....	.....		28	.64	92	78	N.N.E. 5			1	
" ..	.....	.....		29	.57	91	80	N.N.E. 4		1		
" ..	.....	.....		30	.53	82	78	N.W. to S.S.E. 3		1		
" ..	.....	.....		31	.82	85	74	S'd and E'd 2		1		
									6	20	5	

Place.	Lat. S.	Long. W.	Alt. Ft.	Day.	Bar. Inch.	Therm. Max.	Therm. Min.	Wind. Direction and Force.	Weather. Clr.	Cldy.	Rain.	Remks.
Corrientes	27 27 31	58 52 51	248	1	29.71	87	74	S.S.E. 2		1		
River Parana ..	.....	.....		2	.69	94	81	S.S.E. 3		1		
"	.....	.....		3	.94	80	72	S'd 5		1		
"	.....	.....		4	.96	88	72	S'd 3		1		
"	.....	.....		5	.97	78	73	S.S.E. 1		1		
"	.....	.....		6	.97	82	61	Variable 1	1			
"	.....	.....		7	.99	85	74	N.E. 1	1			
Buenos Ayres..	34 36 14	58 23 00	50	8	30.10	92	68	N. by E. 2	1			
"	.....	.....		9	.14	84	74	E'd 3	1			
"	.....	.....		10	.06	88	75	N.E. 5	1			
"	.....	.....		11	30.00	79	76	E'd 3	1			
"	.....	.....		12	29.89	78	72	N'd and E'd 3		1		
"	.....	.....		13	.81	84	72	S.S.E. 4		1		
Monte Video ...	34 54 08	56 13 00		14	.87	80	71	S'd and E'd 4		1		
"	.....	.....		15	.92	81	70	S'd and E'd 4	1			
"	.....	.....		16	.90	79	73	S'd and E'd 3	1			
"	.....	.....		17	.86	77	70	N'd and E'd 2		1		
"	.....	.....		18	.74	79	70	S'd and E'd 3		1		
"	.....	.....		19	.81	80	68	E.S.E. 3		1		
"	.....	.....		20	.84	80	70	S.S.E. 4		1		
"	.....	.....		21	.92	80	73	S.E. 3		1		
"	.....	.....		22	.96	78	72	E.S.E. 2	1			
"	.....	.....		23	.94	79	68	S.S.E. 2	1			
"	.....	.....		24	.85	80	70	Variable 2	1			
"	.....	.....		25	.73	75	69	S'd and E'd 3	1			f.
"	.....	.....		26	.64	79	70	S'd and E'd 3		1		
"	.....	.....		27	.69	70	64	S'd and W'd 7		1		
"	.....	.....		28	.84	77	64	S. 3		1		
									12	16		

APPENDIX O.

Place.	Lat. S.	Long. W.	Alt. Ft.	Day.	Bar. Inch.	Therm. Max.	Therm. Min.	Wind. Direction and Force.	Weather. Clr.	Weather. Cldy.	Weather. Rain.	Remks.
Monte Video ...	34 54 08	56 13 00	Height not ascertained.	1	29.95	77	58	Variable 2	1			
"	.....	.....		2	.99	81	60	Variable 3	1			
"	.....	.....		3	.86	79	66	N.E. to S.E. 3			1	
"	.....	.....		4	.96	73	66	S.E. 2		1		
"	.....	.....		5	.97	80	60	Variable 1	1			
"	.....	.....		6	.93	74	62	N.E. to S.E. 3	1			
"	.....	.....		7	.98	70	62	S.E. 2		1		
"	.....	.....		8	30.00	78	54	N.W. to N.E. 2	1			
"	.....	.....		9	29.93	81	64	N.E. 3	1			
"	.....	.....		10	.91	75	70	Variable 3		1		l.
"	.....	.....		11	.96	78	70	S.E. 3		1		
"	.....	.....		12	.85	82	70	E'd 2		1		
"	.....	.....		13	.76	76	70	N'd and E'd 3			1	r.
"	.....	.....		14	.87	74	70	E'd 3	1			
"	.....	.....		15	.74	84	68	N'd and E'd		1		
"	.....	.....		16	.65	77	68	S.W. 3		1		
"	.....	.....		17	.91	69	65	S.W. 7		1		
"	.....	.....		18	30.19	67	60	S'd and E'd 1	1			
"	.....	.....		19	.19	78	56	Variable 3	1			
"	.....	.....		20	30.00	75	70	Variable 2		1		
"	.....	.....		21	29.90	79	70	W.S.W. 2		1		
"	.....	.....		22	.87	72	70	N'd and E'd 2			1	
"	.....	.....		23	.88	75	70	E'd 2			1	
"	.....	.....		24	30.03	76	66	N'd and E'd 3		1		
"	.....	.....		25	29.98	88	70	E.N.E. 2		1		
"	.....	.....		26	.79	77	67	E.N.E. 2	1			f.m.
"	.....	.....		27	.71	75	68	Variable 3		1		
"	.....	.....		28	.74	72	64	W'd 4		1		
"	... .	.....		29	.88	76	66	N.W. to N.E. 2	1			
"	.....	.....		30	.80	81	58	N'd and E'd 4	1			
"	.....	.....		31	.90	68	66	S.W. 5	1			
									13	14	4	

Place.	Lat. S.	Long. W.	Alt. Ft.	Day.	Bar. Inch.	Therm. Max.	Therm. Min.	Wind. Direction and Force.	Weather. Clr.	Weather. Cldy.	Weather. Rain.	Remks.
Monte Video ...	34 54 08	56 13 00		1	29.97	72	54	E'd 2	1			
"	.....	.....		2	30.08	73	60	N'd and E'd 3	1			
"	.....	.....		3	29.96	72	63	E'd 2			1	
"	.....	.....		4	30.14	62	59	S. 7			1	
"	.....	.....		5	.25	62	59	S. 3		1		
"	.....	.....		6	.30	67	59	S.E. 2		1		
"	.....	.....		7	.33	70	56	E.S.E. 2	1			
"	.....	.....		8	.25	72	56	E'd 2		1		
"	.....	.....		9	.21	70	58	S'd and E'd 2	1			
"	.....	.....		10	.05	71	58	N.E. 2	1			
River La Plata .	.....	.....		11	29.84	78	66	W'd 3		1		
Buenos Ayres ..	34 36 14	58 23 00	50	12	.89	64	57	S.S.W. 4		1		
"	.....	.....		13	.97	66	52	Variable 2	1			
"	.....	.....		14	.95	72	61	N.W. to S.E. 3	1			
"	.....	.....		15	.92	66	60	N.E. 3			1	
"	.....	.....		16	30.04	73	62	N.E. 2	1			
"	.....	.....		17	.02	76	64	N. to S.W. 2	1			
"	.....	.....		18	.02	71	66	E.N.E. 2		1		
"	.....	.....		19	29.98	78	64	N. by E. 3	1			
"	.....	.....		20	.94	78	66	N.E. 4		1		
"	.....	.....		21	30.01	73	70	Variable 2	1			
"	.....	.....		22	30.00	76	70	N.E. 2		1		
"	.....	.....		23	29.84	72	70	N.E. 2			1	
River La Plata .	.....	.....		24	.79	74	68	N.W. to N.E. 4			1	
River Uruguay.	.....	.....		25	.89	74	66	Variable 3			1	
Higueritas	33 52 25	58 25 55		26	.87	71	68	S'd and E'd 1		1		
River Uruguay.	.....	.....		27	30.05	70	51	N.N.E. 1	1			
"	.....	.....		28	29.90	84	58	N.N.E. 1	1			
"	.....	.....		29	.82	78	62	N.N.E.	1			
"	.....	.....		30	.79	64	52	N. to S.S.W 5			1	
									14	9	7	

Place.	Lat. S.	Long. W.	Alt. Ft.	Day.	Bar. Inch.	Therm. Max.	Therm. Min.	Wind. Direction and Force.	Weather. Clr.	Cldy.	Rain.	Remks.
River Uruguay.	.....	.....		1	30.01	67	44	S'd and W'd 3	1			
"	.....	.....		2	.14	64	42	N.N.E. 2	1			
Paisandu	32 18 24	58 07 28		3	.09	68	46	N.E. 1	1			
"	.....	.....		4	.15	72	58	E. 2		1		
"	.....	.....		5	.20	72	60	S.E. 2		1		
River Uruguay.	.....	.....		6	.22	70	50	N.E. 2	1			
"	....	.....		7	.06	85	52	N'd and E'd 1	1			
"	.....	.....		8	29.92	82	64	N'd 2	1			
"	.....	.....		9	.89	69	67	N.E. 3			1	
"	.....	.....		10	.93	70	61	Variable 1		1		r.
Salto del Urug'y	31 23 20	57 59 39		11	30.02	70	58	S'd 2		1		f.
River Uruguay.	.....	.....		12	.08	74	55	S.S.E. 1	1			
Conc. del Urug'y	32 29 32	58 14 55		13	29.99	60	50	E. by S. 1				
River Uruguay.	.....	.....		14	.98	66	56	S. by W. 2		1		
"	.....	.....		15	30.10	66	46	E. by S. 2	1			
"	.....	.....		16	.09	67	44	S.S.E. 2	1			
"	.....	.....		17	.12	65	50	N.E. 2	1			
Frey Bentos....	33 07 13	58 20 25		18	.21	69	54	N.E. 3	1			
"	.....	.....		19	.23	68	56	N.N.E. 4	1			
"	.....	.....		20	.12	70	64	N.E. 5	1			
"	.....	.....		21	29.95	62	58	N'd 2			1	
"	.....	.....		22	.98	64	60	S'd and W'd 6		1		
River Uruguay.	.....	.....		23	30.17	68	56	S'd 2	1			
River Negro....	33 21 33	58 25 37		24	.23	68	52	N'd and E'd 1		1		
"	.....	.....		25	.21	66	56	N.N.E. 2	1			
"	.....	.....		26	29.99	68	54	N.E. 3	1			
Higueritas	33 52 25	58 25 55		27	30.24	70	54	N.E. 2	1			
Martin Garcia..	34 10 53.7	58 16 28.6		28	.19	76	56	Variable 2	1			
Buenos Ayres ..	34 36 14	58 23 00	50	29	.11	72	62	N'd and E'd 3	1			
"	.....	.....		30	29.91	65	60	N'd and E'd 3		1		
"	.....	.....		31	.92	69	62	N'd and E'd 3		1		
									19	9	2	

Place.	Lat. S.	Long. W.	Alt. Ft.	Day.	Bar. Inch.	Therm. Max.	Therm. Min.	Wind. Direction and Force.	Weather. Clr.	Cldy.	Rain.	Remks.
Buenos Ayres	34 36 14	58 23 00	50	1	29.79	64	56	N.N.W. to S. W. by S. 4			1	
" ..	.....	.....		2	.90	58	50	S.E. 3	1			
" ..	.....	.....		3	.83	60	57	N'd and E'd 2		1		h.
" ..	.....	.....		4	.77	60	53	Variable 3		1		
" ..	.....	.....		5	.74	54	54	S.S.W. 4			1	
Monte Video .	34 54 08	56 13 00		6	.85	57	50	W.S.W. 6		1		
" ..	.....	.....		7	30.03	50	48	W. by S. 6		1		
" ..	.....	.....		8	.11	50	48	W. 4		1		
" ..	.....	.....		9	.14	57	50	W. 2			1	f.
Riv. La Plata	.....	.....		10	.19	63	53	Variable 2			1	
Buenos Ayres	34 36 14	58 23 00	50	11	.21	62	50	S.E. 2			1	
" ..	.....	.....		12	.18	58	48	S.S.E. 2		1		f.
" ..	.....	.....		13	.33	58	43	S'd 2	1			
" ..	.....	.....		14	.41	51	44	S.S.E. 2		1		
Riv. La Plata	.....	.....		15	.30	52	48	S.S.E. 2	1			
San Isidro ...	34 28 00	58 30 45		16	.06	58	44	S.E. to N. by W. 2		1		
" ..	.....	.....		17	29.90	50	46	W.N.W. 3			1	
Buenos Ayres	34 36 14	58 23 00	50	18	.94	55	38	W'd 2		1		h.
" ..	.....	.....		19	.95	58	42	W'd 4			1	
" ..	.....	.....		20	30.11	52	48	E. by N. 2		1		h.
" ..	.....	.....		21	29.97	58	50	N'd and E'd 2		1		
" ..	.....	.....		22	.71	54	52	E'd 2			1	
" ..	.....	.....		23	.77	55	52	S'd and W'd 2			1	f.
" ..	.....	.....		24	.78	57	51	N'd and E'd 2		1		f.
" ..	.....	.....		25	.83	58	49	W'd 4	1			
" ..	.....	.....		26	.87	59	52	N.N.W. 3	1			
" ..	.....	.....		27	.77	62	56	N.W. 2		1		
" ..	.....	.....		28	.85	58	56	E.S.E. 4		1		
" ..	.....	.....		29	.94	56	51	S.E. 5			1	
" ..	.....	....		30	.24	56	48	S.S.E. 5		1		
									5	15	16	

N.B.—The minimum thermometer, 48°, at Monte Video on the 7th and 8th of June.

Place.	Lat. S.	Long. W.	Alt. Ft.	Day.	Bar. Inch.	Therm. Max.	Therm. Min.	Wind. Direction and Force.	Weather. Clr.	Cldy.	Rain.	Remks.
Buenos Ayres ..	34 36 14	58 23 00	50	1	30.26	56	42	E'd 2	1			
"	.....	.....		2	.15	54	48	N'd and E'd 4		1		
"	.....	.....		3	29.89	60	51	N.N.E. 2			1	
"	.....	.....		4	.83	56	46	S'd and W'd 5			1	
"	.....	.....		5	.89	51	44	S'd and W'd 4			1	
"	.....	.....		6	30.26	50	40	S.S.W. 3		1		
"	.....	.....		7	.45	50	42	S.S.E. 2		1		f.
"	.....	.....		8	.46	60	46	S.E. 1		1		f.
"	.....	.....		9	.36	54	48	N'd 3	1			
"	.....	.....		10	.31	54	50	N'd and E'd 2	1			
"	.....	.....		11	.11	62	51	N'd and E'd 2		1		
"	.....	.....		12	.16	58	51	N.N.W. 1		1		h.
"	.....	.....		13	.05	58	46	N.E. 1		1		f.
"	.....	.....		14	29.72	54	52	S'd and E'd 3			1	
"	.....	.....		15	.72	56	49	S.W. 5			1	
"	.....	.....		16	.85	54	42	Variable 1			1	
"	.....	.....		17	.75	57	44	W'd 3	1			
"	.....	.....		18	30.02	58	45	N.N.W. 2	1			
"	.....	.....		19	.06	55	49	N'd 2		1		
"	.....	.....		20	29.99	54	50	Variable 2		1		f.
"	.....	.....		21	.82	59	52	N.E. to S.S.W. 3			1	
"	.....	.....		22	30.10	50	38	S.W. 5	1			
"	.....	.....		23	29.88	50	34	N'd and W'd 2		1		f.
"	.....	.....		24	.94	52	44	W. by S. 5	1			
"	.....	.....		25	.82	52	42	W'd 4	1			
"	.....	.....		26	.83	60	46	S.W. 4	1			
"	.....	.....		27	30.02	56	45	N'd and W'd 1	1			
"	.....	.....		28	29.94	58	50	N.N.E. 1		1		
"	.....	.....		29	.76	59	54	N.E. 1			1	
"	.....	.....		30	.74	58	51	Variable 1		1		f.
"	.....	.....		31	.70	68	52	N.N.W. 1		1		h.
									10	13	8	

Place.	Lat. S.	Long. W.	Alt. Ft.	Day.	Bar. Inch.	Therm. Max.	Therm. Min.	Wind. Direction and Force.	Weather. Clr.	Cldy.	Rain.	Remks.
Buenos Ayres ..	34 36 14	58 23 00	50	1	29.57	66	52	E'd 1			1	
"	.....	.....		2	.54	60	54	S'd & W'd 2			1	
"	.....	.....		3	30.20	58	48	S.W. 1	1			
Martin Garcia .	34 10 53.7	58 16 28.6		4	29.83	57	54	Variable 3			1	
"	.....	.....		5	.95	52	48	W.S.W. 6		1		
"	.....	.....		6	30.33	50	44	S. by E. 2		1		
"	.....	.....		7	.44	62	46	E'd 3	1			
"	.....	.....		8	.33	54	44	E'd 4		1		
"	.....	.....		9	.18	60	52	E.S.E. 4		1		f.
"	.....	.....		10	.20	61	50	N.E. 2		1		
Near M. Garcia	.....	.....		11	.23	62	54	E'd 4	1			
"	.....	.....		12	.28	68	52	E.S.E. 3	1			
"	.....	.....		13	.10	62	54	N.E. 3		1		f.
"	.....	.....		14	29.98	64	58	N.N.E. 2			1	
"	.....	.....		15	.96	62	58	S'd 1		1		f.
"	.....	.....		16	30.16	59	54	S.E. 4			1	f.
Off M. Garcia..	.....	.....		17	.23	68	52	Variable 2	1			
"	.....	.....		18	29.73	58	52	N'd 2			1	
"	.....	.....		19	.82	56	50	S.W. 5			1	
"	.....	.....		20	.88	66	50	W.		1		
"	.....	.....		21	.80	68	56	N.N.W. 1		1		h.
"	.....	.....		22	.96	79	60	Variable 1	1			h.
"	.....	.....		23	30.04	63	58	E.S.E. 3		1		
"	.....	.....		24	29.96	62	56	S.E. 5		1		
"	.....	.....		25	.98	56	52	S'd & W'd 2		1		
"	.....	.....		26	30.19	59	53	S.W. 3	1			
"	.....	.....		27	.20	61	56	N.N.W. 2	1			
"	.....	.....		28	29.94	60	50	N'd 2		1		
"	.....	.....		29	30.07	68	50	N.N.W. 3	1			h.
"	.....	.....		30	.01	76	56	N.N.W. 1	1			h.
"	.....	.....		31	29.79	70	64	N.N.W. 2	1			
									11	13	7	

The maximum barometer at Buenos Ayres, 30.46, was on the 8th of July; and the minimum thermometer, 34°, on the 23d.

N.B.—The mean range of barometer at Buenos Ayres, 29.89; mean range of thermometer, 66°.

Place.	Lat. S.	Long. W.	Alt. Ft.	Day.	Bar. Inch.	Therm. Max.	Therm. Min.	Wind. Direction and Force.	Weather. Clr.	Weather. Cldy.	Weather. Rain.	Remks.
Martin Garcia..	34 10 53.7	58 16 28.6		1	29.99	63	54	S.S.E. 4		1		
"	.....	.....		2	30.27	56	50	S.S.E. 4	1			
"	.....	.....		3	.33	62	52	Variable 2	1			
Above M. Garcia	.....	.....		4	.42	60	44	N.E. 2	1			
Below M. Garcia	.....	.....		5	.26	60	50	N. 3	1			
"	.....	.....		6	.07	70	53	N.N.E. 3	1			h.
"	....	.....		7	29.87	80	54	N.E. 2	1			
"	.....	.....		8	.90	66	62	N.N.E. 1			1	
"	.....	.....		9	.96	66	62	S'd 1		1		f.
"	.....	.....		10	.83	79	64	N'd 2		1		
"	.....	.....		11	30.10	60	54	S'd and E'd 4		1		
"	.....	.....		12	29.97	60	52	N.N.W. 3	1			
"	.....	.....		13	.86	64	52	N'd 2		1		
"	.....	.....		14	30.04	63	56	S.E. 3	1			
"	.....	.....		15	.06	64	54	E.N.E. 4	1			
Buenos Ayres ..	34 36 14	58 23 00	50	16	.12	66	61	E'd 2		1		
"	.....	.....		17	.18	59	52	S.E. 4	1			
"	.....	.....		18	.22	62	46	S.E. 2	1			
"	.....	.....		19	.27	56	45	S.E. 3	1			
"	.....	.....		20	.31	54	42	E'd 2	1			
"	.....	.....		21	.19	64	54	N.E. 4	1			
"	.....	.....		22	.17	62	56	N.E. 3		1		
"	.....	.....		23	.12	64	57	N.E. 2	1			
"	.....	.....		24	.05	75	60	N'd and E'd 2		1		
"	.....	.....		25	29.97	71	62	N.E. 3		1		
"	.....	.....		26	.97	68	60	S.E. 3		1		
"	.....	.....		27	30.09	60	57	E.S.E. 4		1		
"	.....	.....		28	30.00	61	59	E'd 6			1	
"	.....	.....		29	29.91	66	61	E'd 5		1		
"	.....	.....		30	.86	68	62	N.E. 3			1	
									15	12	3	

Place.	Lat. S.	Long. W.	Alt. Ft.	Day.	Bar. Inch.	Therm. Max.	Therm. Min.	Wind. Direction and Force.	Weather. Clr.	Weather. Cldy.	Weather. Rain.	Remks.
Buenos Ayres	34 36 14	58 23 00	50	1	29.79	64	60	E'd 3			1	
" ..	.....	.....		2	.73	68	60	W'd 5			1	
Monte Video .	34 54 08	56 13 00		3	.75	69	57	S.W. 3	1			
" ..	.....	.....		4	.94	83	62	S'd 4	1			
" ..	.....	.....		5	.88	64	59	S'd and W'd 2		1		
" ..	.....	.....		6	.88	63	58	S.W. to E. by N. 3		1		
" ..	.....	.....		7	.95	68	56	E.S.E. 2	1			
" ..	.....	.....		8	.92	74	58	N.E. 3	1			
" ..	.....	.....		9	.86	64	62	S'd and W'd 3		1		
" ..	.....	.....		10	30.05	60	58	S.S.W. 3		1		
" ..	.....	.....		11	.19	62	58	E.S.E. 2		1		
" ..	.....	.....		12	.11	60	60	E. by N. 5			1	
Buenos Ayres	34 36 14	58 23 00	50	13	.13	64	54	E'd 4		1		
" ..	.....	.....		14	29.96	66	58	E.N.E. 5		1		
" ..	.....	.....		15	.98	63	60	E'd 3			1	
" ..	.....	.....		16	.85	72	62	E.N.E. 3		1		f.
" ..	.....	.....		17	.86	69	64	S.S.E. 2		1		f.
" ..	.....	.....		18	.81	70	61	S.E. 4			1	
" ..	.....	.....		19	.99	71	64	S'd 2		1		
" ..	.....	.....		20	30.13	66	61	N'd and E'd 1	1			
" ..	.....	.....		21	.15	75	60	N'd and W'd 2	1			
Colonia.....	34 28 15	57 52 00		22	29.97	74	54	N'd 3	1			
" ..	.....	.....		23	.99	83	64	Variable 1	1			
" ..	.....	.....		24	30.09	70	63	E'd 4		1		
" ..	.....	.....		25	.16	68	59	E'd 5			1	
" ..	.....	.....		26	.11	74	61	E'd 3			1	
Bel. M. Garcia	.....	.....		27	29.91	80	64	E. by N. 2		1		
" ..	.....	.....		28	.68	82	69	N'd and E'd 4			1	
" ..	.....	.....		29	.66	68	65	S'd 4			1	
" ..	.....	.....		30	.90	80	66	Variable	1			
" ..	.....	.....		31	30.00	89	58	N'd 3	1			
									10	12	9	

APPENDIX O.

Place.	Lat. S.	Long. W.	Alt. Ft.	Day.	Bar. Inch.	Therm. Max.	Therm. Min.	Wind. Direction and Force.	Weather. Clr.	Cldy.	Rain.	Remks.
Martin Garcia .	34 10 53.7	58 16 28.6		1	30.27	66	45	S.E. 4	1			
"	.....	.....		2	29.81	82	62	N'd 3	1			
"	.....	.....		3	.94	76	67	E'd 2			1	
Higueritas.....	33 52 25	58 25 55		4	30.05	70	60	E.S.E. 4			1	
"	.....	.....		5	.09	72	50	N.E. 2			1	
River Uruguay.	.....	.....		6	29.87	78	68	N'd 4			1	
Riv. Paranacito.	.....	.....		7	.81	82	65	Calm.			1	
"	.....	.....		8	.80	80	71	S'd 5			1	
River Parana ..	.....	.....		9	.94	76	70	E.S.E. 5			1	
"	.....	.....		10	.87	86	65	E. by N. 2			1	
River Colastiné.	.....	.....		11	.69	86	74	N'd & E'd 2		1		
"	.....	.....		12	.78	79	71	E.S.E. 4		1		
"	.....	.....		13	30.06	68	66	E'd 3		1		
River Parana ..	.....	.....		14	29.90	78	62	E'd 2		1		
"	.....	.....		15	.77	80	66	E'd 3	1			
¾ W. of Parana.	31 42 54	60 32 39	132	16	.85	74	65	S.E. 3			1	
"	.....	.....		17	.89	80	64	S.E. 2	1			
"	.....	.....		18	.86	81	64	E.S.E. 3	1			
"	.....	.....		19	.78	88	70	N.E. 2	1			
"	.....	.....		20	.72	90	71	N.E. 2	1			
"	.....	.....		21	.65	97	77	N.N.E. 3	1			
"	.....	.....		22	.64	94	80	N'd & W'd 2		1		
"	.....	.....		23	.91	78	64	E.S.E. 2	1			
"	.....	.....		24	30.05	79	62	S.E. 2	1			
"	.....	.....		25	.15	82	64	E'd 2		1		
"	.....	.....		26	29.79	90	68	Variable 1	1			
"	.....	.....		27	.80	82	70	E.S.E. 2		1		
"	.....	.....		28	.91	86	64	E.S.E. 2	1			
"	.....	.....		29	.96	90	68	N'd & E'd 1	1			
"	.....	.....		30	.95	90	68	N'd & E'd 1	1			
									14	7	9	

Place.	Lat. S.	Long. W.	Alt. Ft.	Day.	Bar. Inch.	Therm. Max.	Therm. Min.	Wind. Direction and Force.	Weather. Clr.	Cldy.	Rain.	Remks.
¾ W. of Parana.	31 42 54	60 32 39	132	1	29.79	84	76	Variable 2		1		
"	.....	.....		2	.77	86	70	W'd 2	1			
"	.....	.....		3	.89	93	82	W.N.W. 1		1		
"	.....	.....		4	30.10	68	60	E.S.E. 2			1	
"	.....	.....		5	.07	89	56	S.S.E. 2	1			
River Parana ..	.....	.....		6	29.86	78	64	E.N.E. 3			1	
"	.....	.....		7	.69	82	68	N.W. to E. 2	1			
Buenos Ayres..	34 36 14	58 23 00	50	8	.61	74	68	E. to S.W. 5			1	
"	.....	.....		9	.83	77	68	Variable 2	1			
"	.....	.....		10	.70	74	72	Variable 5			1	
"	.....	.....		11	.63	81	69	S'd and E'd 4			1	
"	.....	.....		12	.86	78	60	S. by W. 3	1			
"	.....	.....		13	.90	78	70	N'd 3		1		
"	.....	.....		14	.91	76	70	E'd 2			1	
"	.....	.....		15	30.02	78	68	E'd 3	1			
"	.....	.....		16	.07	78	66	N.N.E. 2	1			
"	.....	.....		17	.27	72	66	E'd 4		1		
"	.....	.....		18	.07	76	67	N.E. 3	1			
"	.....	.....		19	29.97	80	68	N.N.E. 5	1			
"	.....	.....		20	.79	84	74	N.N.W. to E.S.E. 4			1	
"	.....	.....		21	.69	85	70	S. 2			1	
"	.....	.....		22	.83	80	73	E'd 2		1		
"	.....	.....		23	.96	70	54	S.S.W. 4			1	
"	.....	.....		24	30.03	70	55	S.S.W. 4	1			
"	.....	.....		25	29.96	70	56	E'd 2	1			
"	.....	.....		26	.97	70	66	N.E. 3	1			
"	.....	.....		27	.98	81	68	N'd 4	1			
"	.....	.....		28	.91	85	74	N'd 2	1			
"	.....	.....		29	.81	76	69	Variable 3			1	
"	.....	.....		30	.84	78	66	S. 2	1			
"	.....	.....		31	.80	82	76	N.N.E. 3	1			
									16	5	10	

N.B.—The minimum barometer at Buenos Ayres, 29.61, occurred on the 8th of December.

Place.	Lat. S.	Long. W.	Alt. Ft.	Day.	Bar. Inch.	Therm. Max.	Therm. Min.	Wind. Direction and Force.	Weather. Clr.	Weather. Cldy.	Weather. Rain.	Remks.
Buenos Ayres ..	34 36 14	58 23 00	50	1	29.83	87	77	N'd 3		1		
"	.....	.....		2	.67	86	76	N'd 4	1			
"	.....	.....		3	.89	82	80	N'd and E'd 3		1		
"	.....	.....		4	.87	86	78	N'd 3		1		
"	.....	.....		5	.84	88	80	N'd 2		1		
"	.....	.....		6	.72	90	78	N. 3			1	
"	.....	.....		7	.87	80	76	S'd and E'd 2			1	t.l.
"	....	.....		8	.90	86	70	S'd 3			1	r.t.l.
"	.....	.....		9	30.02	74	64	E.S.E. 3	1			
"	.....	.....		10	29.83	88	70	N'd 3	1			
"	.....	.....		11	.84	88	76	N.W. 2	1			
"	.....	.....		12	.96	80	76	E.N.E. 4	1			
"	.....	.....		13	.95	81	72	E. by N. 3		1		
"	.....	.....		14	.88	80	74	N.E. 4	1			
San Isidro	34 28 00	58 30 45		15	.83	76	73	N.E. to S.S.W. 3		1		h.
"	.....	.....		16	.94	76	64	E.S.E. 3	1			
"	.....	.....		17	.85	82	64	N'd 2	1			
"	.....	.....		18	.72	88	74	N.W. 2	1			
Buenos Ayres ..	34 36 14	58 23 00	50	19	.62	86	76	Variable 5		1		
"	.....	.....		20	.71	83	74	N.N.E. to S.S.W. 2			1	
"	.....	.....		21	.89	78	68	S'd 5			1	
"	.....	.....		22	30.00	72	58	S'd and E'd 3		1		
"	.....	.....		23	.02	80	68	N'd and E'd 2	1			
Monte Video ...	34 54 08	56 13 00		24	29.93	90	67	N.N.E. 3	1			
"	.....	.....		25	.91	82	66	N.N.E. to S.E. 4			1	
"	.....	.....		26	.92	77	70	E. 4			1	
"	.....	.....		27	.93	76	70	E'd 3		1		
"	.....	.....		28	.82	80	70	N'd and E'd 2	1			
"	.....	.....		29	.91	78	72	S'd and E'd 3	1			
"	.....	.....		30	.95	82	68	N.E. 2		1		
"	.....	.....		31	.97	82	73	E. by S. 3	1			
									14	10	7	

Place.	Lat. S.	Long. W.	Alt. Ft.	Day.	Bar. Inch.	Therm. Max.	Therm. Min.	Wind. Direction and Force.	Weather. Clr.	Weather. Cldy.	Weather. Rain.	Remks.

Days.	Barometer.	Thermometer.		Wind.	Weather.			Remarks.
	Eng. Inches.	Max.	Min.	Direction and Force.	Clear.	Cloudy.	Rain.	
1	29.85	74	60	N. 2			1	
2	29.98	68	52	S.W. 2		1		
3	29.99	64	53	N.E. 3	1			
4	30.11	62	53	S.E. 2	1			
5	30.10	68	50	N.E. 2	1			
6	29.89	73	60	N.E. 2		1		
7	30.00	60	47	S.E. 4		1		
8	30.16	58	47	S.E. 4	1			
9	30.26	56	42	S.E. 5		1		
10	30.16	55	50	E. 2		1		
11	29.75	60	50	S.W. 2			1	
12	29.73	64	46	W. 3			1	
13	29.81	69	48	W. 2	1			
14	29.89	68	50	S.W. 2	1			
15	29.93	72	48	N.W. 2	1			
16	29.92	74	56	N.E. 2	1			
17	29.84	72	54	S.W. 3	1			
18	29.91	74	56	S.E. 2	1			
19	29.93	62	57	N.E. 5		1		
20	29.98	68	56	E. 2			1	
21	29.88	70	58	E. 3		1		
22	29.74	71	60	S.W. 3	1			
23	29.87	72	60	S.W. 3	1			
24	29.85	72	57	S.E. 2		1		
25	29.96	76	58	E. 2	1			
26	29.89	80	61	N.E. 4	1			
27	29.84	70	58	S.W. 2			1	
28	30.04	76	50	S.E. 2	1			
29	30.04	79	57	N. 2	1			
30	29.92	80	62	N.E. 2	1			
	29.94				17	8	5	

Days.	Barometer.	Thermometer.		Wind.	Weather.			Remarks.
	Eng. Inches.	Max.	Min.	Direction and Force.	Clear.	Cloudy.	Rain.	
1	29.84	78	68	N.E. 2	1			
2	29.82	70	64	N.E. 2			1	
3	29.76	74	66	E. 2	1			
4	29.44	68	66	E. to S.W. 2			1	
5	29.94	70	49	S.W. 2	1			
6	30.11	72	58	S.E. 2	1			
7	30.26	68	60	S.E. 4		1		
8	30.14	69	62	E. 5	1			
9	30.12	76	61	N.E. 3	1			
10	30.01	80	64	N. 3	1			
11	30.06	76	61	E. 3	1			
12	30.04	77	66	N.E. 3	1			
13	29.92	82	64	N. 3		1		
14	29.98	76	67	E. 3		1		
15	30.02	76	67	E. 5		1		
16	29.91	72	64	E. 3		1		
17	29.84	77	63	S.E. 5		1		
18	29.96	70	56	S.W. 3			1	
19	29.98	70	52	S. 3		1		
20	29.98	75	58	E. 3			1	
21	29.90	70	58	N.E. 3			1	
22	29.88	74	56	S.E. 2	1			
23	29.81	69	58	N.W. 3			1	
24	29.89	73	60	E. 2	1			
25	29.93	81	53	N. 3	1			
26	29.93	84	62	N.E. 2	1			
27	29.98	85	62	N.E. 2	1			
28	29.80	88	68	N. 5	1			
29	29.88	81	68	S.E. 2		1		
30	29.97	63	58	E. 6			1	
31	29.98	72	62	E. 4			1	
	29.94				15	8	8	

The maximum barometer occurred at noon of the 9th of September, with the thermometer at 56°, and wind high from S.E. : the minimum at noon of the 12th, when the thermometer was 64°, and a fresh breeze blowing from west.

The barometrical observations in 1853 and 1854 were made at noon only, and those with the open-air thermometer at 7 A.M., noon, and 9 P.M.

Maximum barometer at noon of the 7th of October, the thermometer at 68°, and a strong wind from S.E. : minimum barometer noon of the 4th, thermometer 66°, wind variable.

Days.	Barometer.	Thermometer.		Wind.	Weather.			Remarks.
	Eng. Inches.	Max.	Min.	Direction and Force.	Clear.	Cloudy.	Rain.	
1	29.75	65	63	N. 2			1	
2	29.75	82	65	S.W. 2			1	
3	29.95	80	62	S.W. 2	1			
4	29.89	86	67	N.E. 3	1			
5	29.43	82	68	E. 3			1	
6	29.79	74	64	E. 2			1	
7	29.59	72	70	N. 2			1	
8	29.70	72	57	E. 3		1		
9	29.76	76	58	N. 2	1			
10	29.70	82	60	N.W. 3	1			
11	29.59	70	58	S.W. 3			1	
12	29.70	79	58	W. 2	1			
13	29.67	80	64	W. 5	1			
14	29.86	75	64	E. 5	1			
15	29.79	82	62	E. 3		1		
16	29.53	74	69	W. 2			1	
17	29.76	70	62	S.E. 3		1		
18	29.85	66	60	E. 5			1	
19	29.71	62	59	S.E. 5			1	
20	29.81	72	62	S. 2			1	
21	29.82	78	66	N. 2	1			
22	29.70	87	66	N.E. 2	1			
23	29.79	86	68	S.W. 2	1			
24	29.85	87	75	N. 2		1		
25	29.83	79	72	N.E. 2			1	
26	29.76	80	72	E. 2	1			
27	29.75	87	70	E. 2	1			
28	29.73	90	70	W. 2	1			
29	30.08	80	70	E. 3	1			
30	29.76	86	70	N. 4	1			
	29.76				15	4	11	

Days.	Barometer.	Thermometer.		Wind.	Weather.			Remarks.
	Eng. Inches.	Max.	Min.	Direction and Force.	Clear.	Cloudy.	Rain.	
1	29.82	88	74	N. 2	1			
2	29.83	76	74	E. 2			1	
3	29.74	72	70	N.E. 2			1	
4	29.63	81	65	N.W. 2			1	
5	30.02	70	55	S.E. 3	1			
6	29.82	76	62	N. 3		1		
7	29.74	84	65	S.W. 2	1			
8	29.89	82	70	N.E. 2	1			
9	29.96	84	69	N.E. 2	1			
10	29.92	84	71	N.E. 2	1			
11	29.77	90	72	N. 2	1			
12	29.99	82	68	E. 3			1	
13	29.92	84	73	N.E. 3	1			
14	29.83	88	74	N. 3	1			
15	29.72	92	76	N.E. 2	1			
16	29.78	71	68	S.E. 3		1		
17	29.72	72	67	S.E. 3			1	
18	30.03	76	62	E. 3	1			
19	30.03	76	68	S.E. 3		1		
20	29.87	74	67	E. 2		1		
21	29.73	79	66	E. 2			1	
22	29.66	80	66	N.E. 2	1			
23	29.68	78	66	W. 2		1		
24	29.82	76	64	S.W. 3			1	
25	29.80	82	69	N. 2	1			
26	29.65	86	72	N.W. 3		1		
27	29.96	78	64	S.W. 3	1			
28	30.11	76	68	E. 3	1			
29	29.95	78	68	N. 3	1			
30	29.77	76	70	N. 2			1	
31	29.67	86	77	N. 2	1			
	29.84				17	6	8	

Maximum barometer at noon of the 29th of November, thermometer 80°, wind east, fresh: minimum at noon of the 5th, thermometer 82°, fresh breeze from east, with rain.

The barometer exhibits two maxima at noon of the 18th and 19th of December, the temperature being 76°, with a fresh breeze from E. on the 18th, and from S.E. on the 19th: the minimum barometer was at noon of the 22d, temperature 80°, with a gentle breeze from N.E.

METEOROLOGICAL OBSERVATIONS AT BUENOS AYRES.

Days.	Barometer.	Thermometer.		Wind.	Weather.			Remarks.
	Eng. Inches.	Max.	Min.	Direction and Force.	Clear.	Cloudy.	Rain.	
1	29.28	88	77	N.W. 2	1			
2	.70	88	78	N.E. 2	1			
3	.60	79	74	N.E. 2			1	
4	.82	78	64	S.W. 3	1			
5	30.00	82	70	S.E. 2	1			
6	29.79	82	70	N. 2	1			
7	.58	80	68	N. 2		1		
8	.92	70	59	S.W. 3			1	
9	.85	76	64	W. 3	1			
10	.83	82	64	N.W. 3	1			
11	.68	86	72	N. 2	1			
12	.58	78	60	S. 3		1		
13	.93	73	58	S.W. 3	1			
14	.96	79	60	N.E. 2	1			
15	.84	84	64	N. 3	1			
16	.65	88	69	N. 3	1			
17	.58	90	63	N.W. 3		1		
18	.94	77	56	S.W. 3			1	
19	.92	87	63	S.W. 3	1			
20	30.00	83	67	N.E. 2	1			
21	29.86	85	69	N. 2	1			
22	.76	88	70	N. 2	1			
23	.60	82	75	N.W. 2			1	
24	30.01	82	60	E. 3	1			
25	29.84	84	69	N.E. 3	1			
26	.67	89	73	N. 2			1	
27	.59	81	70	N.E. 3			1	
28	.88	70	60	S.E. 3			1	
29	30.10	74	53	E. 3	1			
30	30.01	73	63	N.E. 2		1		
31	29.86	80	69	E. 2	1			
	29.80				20	4	7	

Days.	Barometer.	Thermometer.		Wind.	Weather.			Remarks.
	Eng. Inches.	Max.	Min.	Direction and Force.	Clear.	Cloudy.	Rain.	
1	29.75	89	74	E. 2	1			
2	.69	80	70	N.E. 2			1	
3	.90	80	62	S.E. 2	1			
4	30.01	81	67	N.E. 2	1			
5	29.93	84	74	N. 2	1			
6	.85	85	72	N. 2	1			
7	.83	83	63	E. 2	1			
8	.90	85	69	N.E. 2	1			
9	.91	85	71	N.E. 2	1			
10	.86	81	73	N.E. 2		1		
11	.72	80	75	N.E. 2		1		
12	.56	77	70	N. 2			1	
13	.66	85	63	W. 2	1			
14	.76	89	80	N. 2	1			
15	.79	82	76	N.W. 2		1		
16	.74	77	70	S.W. 2			1	
17	.90	82	61	E. 3	1			
18	.74	80	74	N. 2	1			
19	.54	72	64	S.W. 2			1	
20	.86	75	58	S.W. 2			1	
21	30.03	76	68	S.W. 3	1			
22	.05	78	68	S.W. 2	1			
23	29.92	81	65	N. 2	1			
24	.76	79	68	N. 2		1		
25	.60	89	68	W. 3	1			
26	.65	90	78	N. 2	1			
27	.67	75	69	S.E. 2			1	
28	30.03	74	58	S.E. 2	1			
	29.81				18	4	6	

Maximum barometer at noon of the 29th of January, thermometer 74°, breeze fresh from east: minimum at noon of the 1st, thermometer 88°, breeze gentle from N.W.

Maximum barometer at noon of the 22d of February, thermometer 78°, breeze gentle from S.W.: minimum at noon of the 19th, thermometer 72°, a gentle breeze from S.W.

Days.	Barometer.	Thermometer.		Wind.	Weather.			Remarks.
	Eng. Inches.	Max.	Min.	Direction and Force.	Clear.	Cloudy.	Rain.	
1	30.08	78	66	N.E. 2	1			
2	.05	82	69	N. 2	1			
3	29.93	83	72	N.E. 2	1			
4	.97	76	65	S. 4		1		
5	30.11	75	68	E. 3	1			
6	29.98	79	63	N.E. 2	1			
7	.85	81	68	N.E. 2	1			
8	.82	82	62	S.W. 3	1			
9	.91	76	68	E. 2		1		
10	.82	86	70	N. 2	1			
11	.69	68	64	S.E. 2			1	
12	.84	77	56	E. 2	1			
13	30.05	74	55	E. 2	1			
14	.15	80	64	N.W. 2	1			
15	.07	81	68	N. 2	1			
16	29.90	69	65	N.E. 2			1	
17	.80	73	68	N. 2			1	
18	.77	77	70	S.W. 2		1		
19	.81	73	72	N.W. 2			1	
20	.99	66	56	S.E. 3			1	
21	30.17	70	52	S.E. 3	1			
22	.28	68	49	S. 3	1			
23	.22	71	60	E. 3	1			
24	.05	71	63	E. 4	1			
25	29.99	67	66	E. 3			1	
26	.96	77	62	S. 2	1			
27	.90	68	60	S. 2	1			
28	.96	77	60	N.W. 2	1			
29	.92	76	63	N.E. 2	1			
30	.88	78	67	N. 2	1			
31	.91	79	67	N. 3	1			
	29.96				22	3	6	

Days.	Barometer.	Thermometer.		Wind.	Weather.			Remarks.
	Eng. Inches.	Max.	Min.	Direction and Force.	Clear.	Cloudy.	Rain.	
1	30.14	58	55	S.W. 2	1			
2	.05	58	54	N. 3	1			
3	.04	61	57	N. 2	1			
4	.13	63	58	S.E. 2	1			
5	.21	63	60	S.E. 2	1			
6	.20	63	60	N.E. 3	1			
7	29.98	67	61	N. 2	1			
8	.85	71	66	N. 2			1	
9	.84	68	64	S.W. 3		1		
10	.94	63	62	S.W. 2		1		
11	30.02	63	58	S.W. 2	1			
12	.09	63	59	E. 2		1		
13	29.93	67	61	N. 2		1		
14	.97	61	59	S. 3	1			
15	30.11	58	57	S. 3	1			
16	.05	59	55	N. 3		1		
17	.12	59	56	N.E. 3		1		
18	.20	62	58	N.E. 3	1			
19	.23	65	60	N.E. 4	1			
20	.10	63	61	N.E. 4		1		
21	29.92	61	60	N.E. 2			1	
22	30.01	62	58	S. 4		1		
23	.15	58	54	S.W. 3	1			
24	.21	58	53	S.W. 2	1			
25	.18	62	57	N. 3	1			
26	.16	64	60	N. 3	1			
27	.21	64	60	N.E. 3	1			
28	.15	65	62	N.E. 3		1		
29	.06	66	61	N. 3		1		
30	29.96	65	62	N.E. 2		1		
31	.86	65	63	N. 3		1		
	30.07				17	12	2	

Maximum barometer at noon of the 22d of March, thermometer 86°, fresh breeze from S. : minimum at noon of the 11th, thermometer 68°, gentle breeze from S.E.

Maximum barometer on the 19th of May at 7 A.M., thermometer 60°, and a strong wind from N.E. : minimum, on the 8th, at 9 P.M., breeze light from N., with lightning.

NOTE.—The barometrical observations for 1855, and twenty-one days of January, 1856, as also those with the open-air thermometer for the same time, were made at 7 A.M., 2 P.M., and 9 P.M.

Days.	Barometer.	Thermometer.		Wind.	Weather.			Remarks.
	Eng. Inches.	Max.	Min.	Direction and Force.	Clear.	Cloudy.	Rain.	
1	29.76	65	59	W. 4			1	
2	.86	57	55	S.W. 3			1	
3	.82	60	56	N. 4		1		
4	.73	58	56	S. 3			1	
5	.85	56	55	S.W. 4		1		
6	.89	50	46	W. 4	1			
7	30.08	48	43	S.W. 3	1			
8	.13	48	42	S.W. 3		1		
9	.13	48	46	S.W. 3		1		
10	.22	50	48	S.W. 2		1		
11	.15	50	49	S.E. 3			1	
12	.17	54	50	S.W. 3	1			
13	.33	49	46	S.E. 3	1			
14	.37	49	45	S.E. 3		1		
15	.23	51	46	S.E. 3	1			
16	.00	49	48	N. 3			1	
17	29.85	49	47	W. 3			1	
18	.89	49	43	W. 3	1			
19	.92	53	44	W. 3	1			
20	30.09	50	46	E. 3		1		
21	29.92	51	49	N. 3		1		
22	.74	53	52	S.E. 4			1	
23	.79	55	53	S.W. 2			1	
24	.86	52	52	E. 2			1	
25	.80	54	50	W. 3	1			
26	.82	56	51	N. 3	1			
27	.73	62	55	N.N.W. 3		1		
28	.80	56	55	S.E. 4		1		
29	30.02	53	52	S.E. 6			1	
30	.24	52	49	S. 4			1	
	29.97				9	10	11	

Days.	Barometer.	Thermometer.		Wind.	Weather.			Remarks.
	Eng. Inches.	Max.	Min.	Direction and Force.	Clear.	Cloudy.	Rain.	
1	30.29	50	46	S.E. 3	1			
2	.07	54	51	E. 4			1	
3	29.82	57	54	E. 1			1	
4	.81	54	50	N.W. 5			1	
5	.89	51	48	S.W. 4			1	
6	30.24	52	46	S.W. 3			1	
7	.40	52	46	S.W. 2		1		
8	.44	52	47	E. 2		1		
9	.35	55	51	N. 3	1			
10	.41	58	51	N.N.E. 3	1			
11	.20	58	52	N. 3		1		
12	.14	59	53	N. 2		1		
13	.05	56	52	E.S.E. 3		1		
14	29.89	54	53	E. 3			1	
15	.65	58	52	S.W. 4	1			
16	.79	54	48	W. 2		1		
17	.87	57	48	W.S.W. 3	1			
18	.91	57	49	N.W. 3	1			
19	.96	57	52	N.N.E. 3	1			
20	.91	55	53	N.E. 3		1		
21	.77	60	54	N.W. 2			1	
22	30.07	53	49	S.W. 4	1			
23	29.79	51	46	N. 3		1		
24	.81	51	45	S.W. 4	1			
25	.72	52	42	W. 5	1			
26	.77	58	48	S.W. 4	1			
27	30.01	58	50	N.N.W. 2		1		
28	29.87	55	52	N.E. 2		1		
29	.66	56	54	E. 3		1		
30	.67	59	55	N.W. 2		1		
31	.42	65	56	N. 3		1		
	29.96				11	13	7	

Maximum barometer at 7 A.M. of the 14th of June, thermometer 45°, fresh breeze from S.E. : minimum at 7 A.M. of the 5th, thermometer 56°, breeze fresh from S.W.

Maximum barometer at 2 P.M. of the 8th of July, thermometer 52°, breeze gentle from E. : minimum at 9 P.M. of the 31st, thermometer 62°, a fresh breeze from N.

Days.	Barometer.	Thermometer.		Wind.	Weather.			Remarks.
	Eng. Inches.	Max.	Min.	Direction and Force.	Clear.	Cloudy.	Rain.	
1	29.52	61	60	E. 3			1	
2	.49	61	56	N. 3—S.W. 3			1	
3	.98	60	52	N.E. 3	1			
4	.76	54	53	E.N.E. 3			1	
5	.92	54	54	W.S.W. 5		1		
6	30.27	52	46	S. 3		1		
7	.39	55	46	E. 3	1			
8	.31	51	48	E. 3		1		
9	.15	52	49	E. 4		1		
10	.17	55	52	S.E. 3		1		
11	.20	60	54	S.E. 3	1			
12	.20	58	54	S.E. 3	1			
13	.06	58	55	S.E. 3		1		
14	29.96	59	56	E. 2			1	
15	.94	59	57	E. 2			1	
16	30.06	60	57	S. 2			1	
17	.00	57	54	E. 3		1		
18	29.75	54	54	N.E. 3			1	
19	.87	55	52	S.W. 2		1		
20	.81	63	51	N.W. 2	1			
21	.71	63	56	N.N.W. 2	1			
22	.91	69	60	S.W. 2	1			
23	30.02	62	61	S.E. 4	1			
24	29.96	63	58	S. 3		1		
25	.92	57	56	S. 2		1		
26	30.15	61	54	S.W. 2	1			
27	.14	58	52	N. 2	1			
28	.10	58	54	N. 2		1		
29	.03	65	56	N. 3		1		
30	29.97	68	61	N. 2	1			
31	.77	70	63	N. 2		1		
	29.97				11	13	7	

Days.	Barometer.	Thermometer.		Wind.	Weather.			Remarks.
	Eng. Inches.	Max.	Min.	Direction and Force.	Clear.	Cloudy.	Rain.	
1	29.98	64	60	S. 2			1	
2	30.25	66	60	S. 2	1			
3	.34	61	55	E. 2	1			
4	.36	58	53	N.E. 4	1			
5	.22	61	54	N.E. 3	1			
6	.04	64	57	N.E. 3	1			
7	29.81	67	58	E. 2			1	
8	.79	66	63	E. 1			1	
9	.82	67	63	N.E. 1		1		
10	.77	70	62	N. 1	1			
11	30.04	67	62	S.W. 2		1		
12	.07	62	60	N.E. 5		1		
13	29.83	63	58	S.W. 2		1		
14	.97	67	58	S. 2		1		
15	30.01	63	59	E. 4		1		
16	.02	65	58	S.E. 3	1			
17	.12	62	57	E. 3	1			
18	.17	62	55	E. 3	1			
19	.22	62	54	S.S.E. 3	1			
20	.28	61	54	S.E. 2	1			
21	.19	65	57	E. 3	1			
22	.13	63	58	E. 3		1		
23	.05	68	61	N.E. 2	1			
24	.01	69	60	N. 2	1			
25	29.93	70	65	E. 2	1			
26	.92	68	66	S.E. 4			1	
27	.98	63	61	E. 6			1	
28	.93	61	60	E. 6			1	
29	.90	62	61	E. 5			1	
30	.86	65	61	E. 4			1	
	30.03				15	7	8	

Maximum barometer at 2 P.M. of the 7th of August, thermometer 55°, breeze fresh from E.: minimum at 7 A.M. of the 2d, thermometer 59°, fresh breeze from N., shifting to S.W., with rain and hail.

Maximum barometer at 2 P. M. on the 3d of September, thermometer 61°, breeze gentle from east: minimum, on the 10th, at 9 P.M., thermometer 68°, wind light from N.

OCTOBER, 1855.] METEOROLOGICAL OBSERVATIONS AT BUENOS AYRES. [NOVEMBER, 1855.

Days.	Barometer.	Thermometer.		Wind.	Weather.			Remarks.
	Eng. Inches.	Max.	Min.	Direction and Force.	Clear.	Cloudy.	Rain.	
1	29.70	64	63	E. 2			1	
2	.51	67	62	S.W. 3			1	
3	.60	66	64	S.W. 2	1			
4	.85	68	60	W. 3	1			
5	.87	64	60	S.W. 2		1		
6	.89	64	60	S.W. 1		1		
7	.89	65	66	E. 3	1			
8	.82	70	64	S. 2		1		
9	.80	72	65	S.W. 3			1	
10	30.08	67	61	S. 2	1			
11	.13	67	60	E.S.E. 4		1		
12	.07	60	59	E. 5			1	
13	.10	61	58	E. 5		1		
14	.01	63	58	E. 5		1		
15	29.94	66	60	E. 3			1	
16	.83	68	63	E. 3		1		
17	.81	69	65	S.E. 1			1	
18	.72	68	66	S. 2			1	
19	.97	67	63	S. 1	1			
20	30.11	67	65	E. 3	1			
21	.07	68	66	N.E. 2	1			
22	29.91	70	66	N. 4	1			
23	.94	72	69	N. 1			1	
24	30.05	67	66	S.E. 4	1			
25	.11	68	66	E.S.E. 5			1	
26	.09	70	66	E. 4	1			
27	29.89	70	68	N.E. 3		1		
28	.60	70	70	E. 5			1	
29	.59	67	64	S.W. 3		1		
30	.84	68	64	N.E. 2	1			
31	.89	72	66	N. 3	1			
	29.90				12	9	10	

Days.	Barometer.	Thermometer.		Wind.	Weather.			Remarks.
	Eng. Inches.	Max.	Min.	Direction and Force.	Clear.	Cloudy.	Rain.	
1	29.86	74	68	N.E. 3	1			
2	.82	74	70	N. 2			1	
3	.92	72	68	E. 4			1	
4	30.05	67	65	S.E. 3		1		
5	29.92	65	62	E. 3			1	
6	.64	68	65	N. 3			1	
7	.77	71	68	E. 2		1		
8	.80	70	70	S.E. 3			1	
9	.98	68	67	S.E. 6		1		
10	.93	67	66	S.E. 5		1		
11	.74	70	67	N.E. 2			1	
12	.90	70	65	S.E. 4		1		
13	30.15	67	59	S.E. 3	1			
14	29.96	69	63	N.E. 3	1			
15	.84	70	67	N.E. 1		1		
16	.88	71	68	S.E. 4	1			
17	.91	71	65	S.E. 2		1		
18	.90	74	70	E. 2		1		
19	.88	75	70	N.E. 2	1			
20	.78	77	72	N.E. 3	1			
21	.70	80	73	N.E. 3	1			
22	.64	76	73	S.E. 2			1	
23	.86	71	61	S.W. 4		1		
24	30.04	69	65	S.E. 2	1			
25	29.98	71	67	N.E. 2		1		
26	.77	79	70	N.W. 2	1			
27	.80	78	72	S.W. 2		1		
28	.88	78	71	S.W. 3	1			
29	.95	81	70	N. 2	1			
30	.93	80	76	N. 2	1			
	29.84				12	11	7	

Maximum barometer at 2 P.M. of the 11th of October, thermometer 77°, and breeze fresh from E.S.E. : minimum at 7 A.M. of the 29th, thermometer 67°, and a fresh breeze from S.W.

Maximum barometer on the 13th of November at 2 P.M., thermometer 66°, breeze fresh from S.E. : minimum at 2 P.M. on the 6th, thermometer 68°, breeze fresh from N.

Days.	Barometer.	Thermometer.		Wind.	Weather.			Remarks.
	Eng. Inches.	Max.	Min.	Direction and Force.	Clear.	Cloudy.	Rain.	
1	29.75	80	74	N.E. 1		1		
2	.68	86	73	W. 2	1			
3	.78	78	70	S.W. 3	1			
4	30.12	73	66	S.E. 2	1			
5	.06	70	65	E. 3	1			
6	29.83	72	68	N.E. 4			1	
7	.63	73	69	N.E. 2		1		
8	.60	77	73	N. 3—S.W. 2		1		
9	.77	75	70	N.E. 2	1			
10	.62	74	72	N. 4			1	
11	.61	73	72	N. 1—S.S.W. 2			1	
12	.86	72	67	S.W. 2	1			
13	.87	72	69	N. 2		1		
14	.89	75	70	S.E. 1		1		
15	.98	74	70	E. 3	1			
16	30.06	73	69	N.E. 3		1		
17	.13	73	69	E. 4	1			
18	.07	74	67	N.E. 4	1			
19	29.93	78	71	N.E. 3	1			
20	.73	80	73	N. 2			1	
21	.64	76	74	N.E. 1—S.W. 1		1		
22	.78	75	70	S.W. 1			1	
23	.92	72	67	S.W. 2	1			
24	.95	70	65	S.W. 2		1		
25	.94	69	63	N.E. 2		1		
26	.96	72	68	N.E. 3		1		
27	.98	76	71	N.N.E. 2	1			
28	.87	81	74	N. 2	1			
29	.74	75	72	N. 1—S.W. 2		1		
30	.80	76	70	S.E. 2	1			
31	No observ'n.							
	29.85				14	11	5	

Days.	Barometer.	Thermometer.		Wind.	Weather.			Remarks.
	Eng. Inches.	Max.	Min.	Direction and Force.	Clear.	Cloudy.	Rain.	
1	29.81	84	82	N. 1	1			
2	.80	85	81	N. 3	1			
3	.85	84	76	N.E. 2	1			
4	.84	85	78	N. 2		1		
5	.78	85	80	N. 2		1		
6	.74	89	82	N. 2		1		
7	.73	82	78	S. 1			1	
8	.76	76	75	S. 3			1	
9	.99	75	69	E.S.E. 3	1			
10	.89	80	70	N.E. 3	1			
11	.81	86	76	N.W. 2		1		
12	.95	78	72	E.S.E. 4	1			
13	.91	78	72	E. 3		1		
14	.82	81	75	N.E. 3		1		
15	.83	76	72	N.E. 3			1	
16	.88	74	66	S.S.E. 2	1			
17	.80	78	70	N. 2	1			
18	.67	86	74	N.W. 2	1			
19	.58	83	77	N.W. 2—S.S.W. 3		1		
20	.68	79	75	S.E. 1			1	
21	29.92	74	68	S.W. 2			1	
22	The obser'ns end here.							
23								
24								
25								
26								
27								
28								
29								
30								
31								
	29.81				9	7	5	

Maximum barometer at 2 P.M. of the 17th of December, thermometer 72°, wind strong from east: minimum on the 11th, at 7 A.M., thermometer 73°, breeze very light from north.

Maximum barometer on the 9th of January at 2 P.M., thermometer 74°, breeze fresh from E.S.E.: minimum on the 19th, at 7 A.M., thermometer —°, breeze gentle and variable.

Days.	Barometer.	Thermometer.		Wind.	Weather.			Remarks.
	Eng. Inches.	Max.	Min.	Direction and Force.	Clear.	Cloudy.	Rain.	
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13	29.67	89	79	N.E. 5	1			
14	.60	89	81	N.N.E. 3	1			
15	.56	79	76	S.S.W. 3			1	t.
16	.61	85	72	S. by W. 3			1	t.l.
17	.83	77	70	S.E. 5	1			
18	.73	82	72	E'd 3	1			
19	.63	85	73	E'd 3	1			
20	.51	90	77	N.N.E. 3	1			
21	.58	79	74	S'd and W'd 4		1		
22	.64	91	76	S'd.	1			
23	.91	78	66	S. by E.		1		
24	.92	79	67	E. by N. 6	1			
25	.72	88	74	N.N.E. 6	1			
26	.74	89	82	Variable 4		1		
27	.59	91	78	N.E. 3		1		
28	.57	82	73	S.S.W. 6			1	t.
29	.62	85	75	S. 5	1			
30	29.63	90	77	E'd 4	1			
	29.67				11	4	3	

Days.	Barometer.	Thermometer.		Wind.	Weather.			Remarks.
	Eng. Inches.	Max.	Min.	Direction and Force.	Clear.	Cloudy.	Rain.	
1	29.58	93	77	N. by E. 3	1			
2	.62	92	74	E'd 6			1	
3	.61	86	78	E. 6		1		
4	.58	89	75	Variable 4		1		
5	.54	94	78	N.N.E. 3	1			
6	.52	91	77	S'd and W'd 3			1	
7	.57	89	77	S. by E. 6		1		
8	.71	86	72	E.S.E. 6	1			
9	.65	86	74	E. by N. 4	1			
10	.61	88	78	E'd 3		1		
11	.75	84	77	S.S.E. 3		1		
12	.78	91	78	E. by S. 7		1		
13								
14	29.62	86	74	E'd 8			1	
15	.60	84	75	N'd 4		1		
16	.61	91	79	E.N.E. 4	1			
17	.52	93	82	N.N.E. 3		1		
18	.51	80	73	E'd 7			1	
19	.52	83	73	S'd 7		1		
20	.56	89	76	S. 3	1			
21	.57	86	76	S'd 3	1			
22	.65	77	70	Variable 5			1	
23	.70	89	76	S.S.E. 3		1		
24	29.69	84	77	Variable 5		1		
25								
26								
27								
28								
29								
30								
31								
	29.64				7	11	5	

The observations from the 13th of November to the 24th of December, inclusive, were made at 8, 9, 10, 11 A.M., and 2, 3, 4, 6, 8 P.M., and the mean of these is that set down in the columns. The barometer used was the "mountain barometer," and the place of observation twenty-five feet above the level of the river.

THE END.

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