CHAPTER VII.

Excursion to St. Fé—Thistle Beds—Habits of the Bizcacha—Little Owl—Saline Streams—Level Plains—Mastodon—St. Fé—Change in Landscape—Geology—Tooth of extinct Horse—Relation of the Fossil and recent Quadrupeds of North and South America—Effects of a great Drought—Parana—Habits of the Jaguar—Scissor-beak—Kingfisher, Parrot, and Scissor-tail—Revolution—Buenos Ayres—State of Government.

BUENOS AYRES TO ST. FÉ.

September 27th.—IN the evening I set out on an excursion to St. Fé, which is situated nearly three hundred English miles from Buenos Ayres, on the banks of the Parana. The roads in the neighbourhood of the city, after the rainy weather, were extraordinarily bad. I should never have thought it possible for a bullock waggon to have crawled along: as it was, they scarcely went at the rate of a mile an hour, and a man was kept ahead, to survey the best line for making the attempt. The bullocks were terribly jaded: it is a great mistake to suppose that with improved roads, and an accelerated rate of travelling, the sufferings of the animals increase in the same proportion. We passed a train of waggons and a troop of beasts on their road to Mendoza. The distance is about 580 geographical miles, and the journey is generally performed in fifty days. These waggons are very long, narrow, and thatched with reeds; they have only two wheels, the diameter of which in some cases is as much as ten feet. Each is drawn by six bullocks, which are urged on by a goad at least twenty feet long: this is suspended from within the roof; for the wheel bullocks a smaller one is kept; and for the intermediate pair, a point projects at right angles from the middle of the long one. The whole apparatus looked like some implement of war.

September 28th.—We passed the small town of Luxan, where there is a wooden bridge over the river—a most unusual convenience in this country. We passed also Areco. The plains appeared level, but were not so in fact; for in various places the horizon was distant. The

estancias are here wide apart; for there is little good pasture, owing to the land being covered by beds either of an acrid clover, or of the great thistle. The latter, well known from the animated description given by Sir F. Head, were at this time of the year two-thirds grown; in some parts they were as high as the horse's back, but in others they had not yet sprung up, and the ground was bare and dusty as on a turnpike-road. The clumps were of the most brilliant green, and they made a pleasing miniature-likeness of broken forest land. When the thistles are full grown, the great beds are impenetrable, except by a few tracks, as intricate as those in a labyrinth. These are only known to the robbers, who at this season inhabit them, and sally forth at night to rob and cut throats with impunity. Upon asking at a house whether robbers were numerous, I was answered, "The thistles are not up yet;"—the meaning of which reply was not at first very obvious. There is little interest in passing over these tracts, for they are inhabited by few animals or birds, excepting the bizcacha and its friend the little owl.

The bizcacha* is well known to form a prominent feature in the zoology of the Pampas. It is found as far south as the Rio Negro, in lat. 41°, but not beyond. It cannot, like the agouti, subsist on the gravelly and desert plains of Patagonia, but prefers a clayey or sandy soil, which produces a different and more abundant vegetation. Near Mendoza, at the foot of the Cordillera, it occurs in close neighbourhood with the allied alpine species. It is a very curious circumstance in its geographical distribution, that it has never been seen, fortunately for the inhabitants of Banda Oriental, to the eastward of the river Uruguay: yet in this province there are plains which appear admirably adapted to its habits. The Uruguay has formed an insuperable obstacle to its migration; although the broader barrier of the Parana has been passed, and the bizcacha is common in Entre Rios, the province between these two great rivers. Near Buenos Ayres these animals are exceedingly common. Their most favourite resort appears to be those parts of the plain which during one half of the year are covered with giant thistles, to the exclusion of other plants. The

* The bizcacha (Lagostomus trichodactylus) somewhat resembles a large rabbit, but with bigger gnawing teeth and a long tail: it has, however, only three toes behind, like the agouti. During the last three or four years the skins of these animals have been sent to England for the sake of the fur.

Gauchos affirm that it lives on roots; which, from the great strength of its gnawing teeth, and the kind of places frequented by it, seems probable. In the evening the bizcachas come out in numbers, and quietly sit at the mouths of their burrows on their haunches. At such times they are very tame, and a man on horseback passing by seems only to present an object for their grave contemplation. They run very awkwardly, and when running out of danger, from their elevated tails and short front legs, much resemble great rats. Their flesh, when cooked, is very white and good, but it is seldom used.

The bizcacha has one very singular habit; namely, dragging every hard object to the mouth of its burrow: around each group of holes many bones of cattle, stones, thistle-stalks, hard lumps of earth, dry dung, &c., are collected into an irregular heap, which frequently amounts to as much as a wheelbarrow would contain. I was credibly informed that a gentleman, when riding on a dark night, dropped his watch; he returned in the morning, and by searching the neighbourhood of every bizcacha hole on the line of road, as he expected, he soon found it. This habit of picking up whatever may be lying on the ground any where near its habitation, must cost much trouble. For what purpose it is done, I am quite unable to form even the most remote conjecture: it cannot be for defence, because the rubbish is chiefly placed above the mouth of the burrow, which enters the ground at a very small inclination. No doubt there must exist some good reason; but the inhabitants of the country are quite ignorant of it. The only fact which I know analogous to it, is the habit of that extraordinary Australian bird, the Calodera maculata, which makes an elegant vaulted passage of twigs for playing in, and which collects near the spot, land and sea-shells, bones, and the feathers of birds, especially brightly coloured ones. Mr. Gould, who has described these facts, informs me, that the natives, when they lose any hard object, search the playing passages, and he has known a tobacco-pipe thus recovered.

The little owl (Athene cunicularia), which has been so often mentioned, on the plains of Buenos Ayres exclusively inhabits the holes of the bizcacha; but in Banda Oriental it is its own workman. During the open day, but more especially in the evening, these birds may be seen in every direction standing frequently by pairs on the hillock near their burrows. If disturbed they either enter the hole, or, utter-

ing a shrill harsh cry, move with a remarkably undulatory flight to a short distance, and then turning round, steadily gaze at their pursuer. Occasionally in the evening they may be heard hooting. I found in the stomachs of two which I opened the remains of mice, and I one day saw a small snake killed and carried away. It is said that snakes are their common prey during the daytime. I may here mention, as showing on what various kinds of food owls subsist, that a species killed among the islets of the Chonos Archipelago, had its stomach full of good-sized crabs. In India* there is a fishing genus of owls, which likewise catches crabs.

In the evening we crossed the Rio Arrecife on a simple raft made of barrels lashed together, and slept at the post-house on the other side. I this day paid horse-hire for thirty-one leagues; and although the sun was glaring hot I was but little fatigued. When Captain Head talks of riding fifty leagues a day, I do not imagine the distance is equal to 150 English miles. At all events, the thirty-one leagues was only 76 miles in a straight line, and in an open country I should think four additional miles for turnings would be a sufficient allowance.

29th and 30th.—We continued to ride over plains of the same character. At San Nicolas I first saw the noble river of the Parana. At the foot of the cliff on which the town stands, some large vessels were at anchor. Before arriving at Rozario, we crossed the Saladillo, a stream of fine clear running water, but too saline to drink. Rozario is a large town built on a dead level plain, which forms a cliff about sixty feet high over the Parana. The river here is very broad, with many islands, which are low and wooded, as is also the opposite shore. The view would resemble that of a great lake, if it were not for the linear-shaped islets, which alone give the idea of running water. The cliffs are the most picturesque part; sometimes they are absolutely perpendicular, and of a red colour; at other times in large broken masses, covered with cacti and mimosa-trees. The real grandeur, however, of an immense river like this, is derived from reflecting how important a means of communication and commerce it forms between one nation and another; to what a distance it travels; and from how vast a territory it drains the great body of fresh water which flows past your feet.

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* Journal of Asiatic Soc., vol. v. p. 363.

For many leagues north and south of San Nicolas and Rozario, the country is really level. Scarcely anything which travellers have written about its extreme flatness, can be considered as exaggeration. Yet I could never find a spot where, by slowly turning round, objects were not seen at greater distances in some directions than in others; and this manifestly proves inequality in the plain. At sea, a person's eye being six feet above the surface of the water, his horizon is two miles and four-fifths distant. In like manner, the more level the plain, the more nearly does the horizon approach within these narrow limits; and this, in my opinion, entirely destroys that grandeur which one would have imagined that a vast level plain would have possessed.

October 1st.—We started by moonlight and arrived at the Rio Tercero by sunrise. This river is also called the Saladillo, and it deserves the name, for the water is brackish. I stayed here the greater part of the day, searching for fossil bones. Besides a perfect tooth of the Toxodon, and many scattered bones, I found two immense skeletons near each other, projecting in bold relief from the perpendicular cliff of the Parana. They were, however, so completely decayed, that I could only bring away small fragments of one of the great molar teeth; but these are sufficient to show that the remains belonged to a Mastodon, probably to the same species with that, which formerly must have inhabited the Cordillera in Upper Peru in such great numbers. The men who took me in the canoe, said they had long known of these skeletons, and had often wondered how they had got there: the necessity of a theory being felt, they came to the conclusion that, like the bizcacha, the mastodon was formerly a burrowing animal! In the evening we rode another stage, and crossed the Monge, another brackish stream, bearing the dregs of the washings of the Pampas.

October 2nd.—We passed through Corunda, which, from the luxuriance of its gardens, was one of the prettiest villages I saw. From this point to St. Fé the road is not very safe. The western side of the Parana northward, ceases to be inhabited; and hence the Indians sometimes comedown thus far, and waylay travellers. The nature of the country also favours this, for instead of a grassy plain, there is an open woodland, composed of low prickly mimosas. We passed some houses that had been ransacked and since deserted; we saw also a spectacle, which my guides viewed with high satisfaction; it was

the skeleton of an Indian with the dried skin hanging on the bones, suspended to the branch of a tree.

In the morning we arrived at St. Fé. I was surprised to observe how great a change of climate a difference of only three degrees of latitude between this place and Buenos Ayres had caused. This was evident from the dress and complexion of the men—from the increased size of the ombu-trees—the number of new cacti and other plants—and especially from the birds. In the course of an hour I remarked half-a-dozen birds, which I had never seen at Buenos Ayres. Considering that there is no natural boundary between the two places, and that the character of the country is nearly similar, the difference was much greater than I should have expected.

October 3rd and 4th.—I was confined for these two days to my bed by a headach. A good-natured old woman, who attended me, wished me to try many odd remedies. A common practice is, to bind an orange-leaf or a bit of black plaster to each temple: and a still more general plan is, to split a bean into halves, moisten them, and place one on each temple, where they will easily adhere. It is not thought proper ever to remove the beans or plaster, but to allow them to drop off; and sometimes, if a man, with patches on his head, is asked, what is the matter? he will answer, " I had a headach the day before yesterday." Many of the remedies used by the people of the country are ludicrously strange, but too disgusting to be mentioned. One of the least nasty is to kill and cut open two puppies and bind them on each side of a broken limb. Little hairless dogs are in great request to sleep at the feet of invalids.

St. Fé is a quiet little town, and is kept clean and in good order. The governor, Lopez, was a common soldier at the time of the revolution; but has now been seventeen years in power. This stability of government is owing to his tyrannical habits; for tyranny seems as yet better adapted to these countries than republicanism. The governor's favourite occupation is hunting Indians: a short time since he slaughtered forty-eight, and sold the children at the rate of three or four pounds apiece.

October 5th.—We crossed the Parana to St. Fé Bajada, a town on the opposite shore. The passage took some hours, as the river here consisted of a labyrinth of small streams, separated by low wooded islands. I had a letter of introduction to an old Catalonian Spaniard,

who treated me with the most uncommon hospitality. The Bajada is the capital of Entre Rios. In 1825 the town contained 6000 inhabitants, and the province 30,000; yet, few as the inhabitants are, no province has suffered more from bloody and desperate revolutions. They boast here of representatives, ministers, a standing army, and governors: so it is no wonder that they have their revolutions. At some future day this must be one of the richest countries of La Plata. The soil is varied and productive; and its almost insular form gives it two grand lines of communication by the rivers Parana and Uruguay.

I was delayed here five days, and employed myself in examining the geology of the surrounding country, which was very interesting. We here see at the bottom of the cliffs, beds containing sharks' teeth and sea-shells of extinct species, passing above into an indurated marl, and from that into the red clayey earth of the Pampas, with its calcareous concretions and the bones of terrestrial quadrupeds. This vertical section clearly tells us of a large bay of pure salt-water, gradually encroached on, and at last converted into the bed of a muddy estuary, into which floating carcasses were swept. At Punta Gorda, in Banda Oriental, I found an alternation of the Pampæan estuary deposit, with a limestone containing some of the same extinct sea-shells; and this shows either a change in the former currents, or more probably an oscillation of level in the bottom of the ancient estuary. Until lately, my reasons for considering the Pampæan formation to be an estuary deposit were, its general appearance, its position at the mouth of the existing great river the Plata, and the presence of so many bones of terrestrial quadrupeds: but now Professor Ehrenberg has had the kindness to examine for me a little of the red earth, taken from low down in the deposit, close to the skeletons of the mastodon, and he finds in it many infusoria, partly salt-water and partly fresh-water forms, with the latter rather preponderating; and therefore, as he remarks, the water must have been brackish. M. A. d'Orbigny found on the banks of the Parana, at the height of a hundred feet, great beds of an estuary shell, now living a hundred miles lower down nearer the sea; and I found similar shells at a less height on the banks of the Uruguay: this shows that just before the Pampas was slowly elevated into dry land, the water covering it was brackish. Below Buenos Ayres there are upraised beds of sea-shells of existing

species, which also proves that the period of elevation of the Pampas was within the recent period.

In the Pampæan deposit at the Bajada I found the osseous armour of a gigantic armadillo-like animal, the inside of which, when the earth was removed, was like a great cauldron; I found also teeth of the Toxodon and Mastodon, and one tooth of a Horse, in the same stained and decayed state. This latter tooth greatly interested me,* and I took scrupulous care in ascertaining that it had been embedded contemporaneously with the other remains; for I was not then aware that amongst the fossils from Bahia Blanca there was a horse's tooth hidden in the matrix: nor was it then known with certainty that the remains of horses are common in North America. Mr. Lyell has lately brought from the United States a tooth of a horse; and it is an interesting fact, that Professor Owen could find in no species, either fossil or recent, a slight but peculiar curvature characterizing it, until he thought of comparing it with my specimen found here: he has named this American horse Equus curvidens. Certainly it is a marvellous fact in the history of the Mammalia, that in South America a native horse should have lived and disappeared, to be succeeded in after ages by the countless herds descended from the few introduced with the Spanish colonists!

The existence in South America of a fossil horse, of the mastodon, possibly of an elephant,† and of a hollow-horned ruminant, discovered by MM. Lund and Clausen in the caves of Brazil, are highly interesting facts with respect to the geographical distribution of animals. At the present time, if we divide America, not by the Isthmus of Panama, but by the southern part of Mexico‡ in lat. 20°,

* I need hardly state here that there is good evidence against any horse living in America at the time of Columbus.

† Cuvier, Ossemens Fossiles, tom. i. p. 158.

‡ This is the geographical division followed by Lichtenstein, Swainson, Erichson, and Richardson. The section from Vera Cruz to Acapulco, given by Humboldt in the Polit. Essay on Kingdom of N. Spain, will show how immense a barrier the Mexican table-land forms. Dr. Richardson, in his admirable Report on the Zoology of N. America read before the Brit. Assoc. 1836 (p. 157), talking of the identification of a Mexican animal with the *Synetheres prehensilis*, says, "We do not know with what propriety, but if correct, it is, if not a solitary instance, at least very nearly so, of a rodent animal being common to North and South America."

where the great table-land presents an obstacle to the migration of species, by affecting the climate, and by forming, with the exception of some valleys and of a fringe of low land on the coast, a broad barrier; we shall then have the two zoological provinces of North and South America strongly contrasted with each other. Some few species alone have passed the barrier, and may be considered as wanderers from the south, such as the puma, opossum, kinkajou, and peccari. South America is characterized by possessing many peculiar gnawers, a family of monkeys, the llama, peccari, tapir, opossums, and, especially, several genera of Edentata, the order which includes the sloths, ant-eaters, and armadillos. North America, on the other hand, is characterized (putting on one side a few wandering species) by numerous peculiar gnawers, and by four genera (the ox, sheep, goat, and antelope) of hollow-horned ruminants, of which great division South America is not known to possess a single species. Formerly, but within the period when most of the now existing shells were living, North America possessed, besides hollow-horned ruminants, the elephant, mastodon, horse, and three genera of Edentata, namely, the Megatherium, Megalonyx, and Mylodon. Within nearly this same periods (as proved by the shells at Bahia Blanca) South America possessed, as we have just seen, a mastodon, horse, hollow-horned ruminant, and the same three genera (as well as several others) of the Edentata. Hence it is evident that North and South America, in having within a late geological period these several genera in common, were much more closely related in the character of their terrestrial inhabitants than they now are. The more I reflect on this case, the more interesting it appears: I know of no other instance where we can almost mark the period and manner of the splitting up of one great region into two well-characterized zoological provinces. The geologist, who is fully impressed with the vast oscillations of level which have affected the earth's crust within late periods, will not fear to speculate on the recent elevation of the Mexican platform, or, more probably, on the recent submergence of land in the West Indian Archipelago, as the cause of the present zoological separation of North and South America. The South American character of the West Indian mammals* seems to indicate that this archipelago was

* See Dr. Richardson's Report, p. 157; also L'Institut, 1837, p. 253. Cuvier says the kinkajou is found in the larger Antilles, but this is doubtful.

formerly united to the southern continent, and that it has subsequently been an area of subsidence.

When America, and especially North America, possessed its elephants, mastodons, horse, and hollow-horned ruminants, it was much more closely related in its zoological characters to the temperate parts of Europe and Asia than it now is. As the remains of these genera are found on both sides of Behring's Straits* and on the plains of Siberia, we are led to look to the north-western side of North America as the former point of communication between the Old and so-called New World. And as so many species, both living and extinct, of these same genera inhabit and have inhabited the Old World, it seems most probable that the North American elephants, mastodons, horse, and hollow-horned ruminants migrated, on land since submerged near Behring's Straits, from Siberia into North America, and thence, on land since submerged in the West Indies, into South America, where for a time they mingled with the forms characteristic of that southern continent, and have since become extinct.

While travelling through the country, I received several vivid descriptions of the effects of a late great drought; and the account of this may throw some light on the cases where vast numbers of animals of all kinds have been embedded together. The period included between the years 1827 and 1830 is called the "gran seco," or the great drought. During this time so little rain fell, that the vegetation, even to the thistles, failed; the brooks were dried up, and the whole country assumed the appearance of a dusty high road. This was especially the case in the northern part of the province of Buenos Ayres and the southern part of St. Fé. Very great numbers of birds, wild animals, cattle, and horses perished from the want of food and water. A man told me that the deer† used to come into his courtyard to the

M. Gervais states that the Didelphis crancrivora is found there. It is certain that the West Indies possess some mammifers peculiar to themselves. A tooth of a mastodon has been brought from Bahama: Edin. New Phil. Journ. 1826, p. 395.

* See the admirable Appendix by Dr. Buckland to Beechey's Voyage; also writings of Chamisso in Kotzebue's Voyage.

† In Capt. Owen's Surveying Voyage (vol. ii. p. 274) there is a curious account of the effects of a drought on the elephants, at Benguela (west

well, which he had been obliged to dig to supply his own family with water; and that the partridges had hardly strength to fly away when pursued. The lowest estimation of the loss of cattle in the province of Buenos Ayres alone, was taken at one million head. A proprietor at San Pedro had previously to these years 20,000 cattle; at the end not one remained. San Pedro is situated in the middle of the finest country; and even now abounds again with animals; yet, during the latter part of the "gran seco," live cattle were brought in vessels for the consumption of the inhabitants. The animals roamed from their estancias, and, wandering far southward, were mingled together in such multitudes, that a government commission was sent from Buenos Ayres to settle the disputes of the owners. Sir Woodbine Parish informed me of another and very curious source of dispute; the ground being so long dry, such quantities of dust were blown about, that in this open country the landmarks became obliterated, and people could not tell the limits of their estates.

I was informed by an eyewitness that the cattle in herds of thousands rushed into the Parana, and being exhausted by hunger they were unable to crawl up the muddy banks, and thus were drowned. The arm of the river which runs by San Pedro was so full of putrid carcasses, that the master of a vessel told me that the smell rendered it quite impassable. Without doubt several hundred thousand animals thus perished in the river: their bodies when putrid were seen floating down the stream; and many in all probability were deposited in the estuary of the Plata. All the small rivers became highly saline, and this caused the death of vast numbers in particular spots; for when an animal drinks of such water it does not recover. Azara describes* the fury of the wild horses on a similar occasion, rushing into the

coast of Africa). "A number of these animals had some time since entered the town, in a body, to possess themselves of the wells, not being able to procure any water in the country. The inhabitants mustered, when a desperate conflict ensued, which terminated in the ultimate discomfiture of the invaders, but not until they had killed one man, and wounded several others." The town is said to have a population of nearly three thousand! Dr. Malcolmson informs me, that during a great drought in India the wild animals entered the tents of some troops at Ellore, and that a hare drank out of a vessel held by the adjutant of the regiment.

* Travels, vol. i. p. 374.

marshes, those which arrived first being overwhelmed and crushed by those which followed. He adds that more than once he has seen the carcasses of upwards of a thousand wild horses thus destroyed. I noticed that the smaller streams in the Pampas were paved with a breccia of bones, but this probably is the effect of a gradual increase, rather than of the destruction at any one period. Subsequently to the drought of 1827 to '32, a very rainy season followed, which caused great floods. Hence it is almost certain that some thousands of the skeletons were buried by the deposits of the very next year. What would be the opinion of a geologist, viewing such an enormous collection of bones, of all kinds of animals and of all ages, thus embedded in one thick earthy mass? Would he not attribute it to a flood having swept over the surface of the land, rather than to the common order of things?*

October 12th.—I had intended to push my excursion further, but not being quite well, I was compelled to return by a balandra, or one-masted vessel of about a hundred tons' burden, which was bound to Buenos Ayres. As the weather was not fair, we moored early in the day to a branch of a tree on one of the islands. The Parana is full of islands, which undergo a constant round of decay and renovation. In the memory of the master several large ones had disappeared, and others again had been formed and protected by vegetation. They are composed of muddy sand, without even the smallest pebble, and were then about four feet above the level of the river; but during the periodical floods they are inundated. They all present one character; numerous willows and a few other trees are bound together by a great variety of creeping plants, thus forming a thick jungle. These thickets afford a retreat for capybaras and jaguars. The fear of the latter animal quite destroyed all pleasure in scrambling through the woods. This evening I had not proceeded a hundred yards, before finding indubitable signs of the recent presence of the tiger, I was obliged to come back. On every island there were tracks; and as on the former excursion "el rastro de los Indios" had been the subject of conversation, so in this was "el rastro del tigre."

* These droughts to a certain degree seem to be almost periodical; I was told the dates of several others, and the intervals were about fifteen years.

The wooded banks of the great rivers appear to be the favourite haunts of the jaguar; but south of the Plata, I was told that they frequented the reeds bordering lakes: wherever they are, they seem to require water. Their common prey is the capybara, so that it is generally said, where capybaras are numerous there is little danger from the jaguar. Falconer states that near the southern side of the mouth of the Plata there are many jaguars, and that they chiefly live on fish; this account I have heard repeated. On the Parana they have killed many wood-cutters, and have even entered vessels at night. There is a man now living in the Bajada, who, coming up from below when it was dark, was seized on the deck; he escaped, however, with the loss of the use of one arm. When the floods drive these animals from the islands, they are most dangerous. I was told that a few years since a very large one found its way into a church at St. Fé: two padres entering one after the other were killed, and a third, who came to see what was the matter, escaped with difficulty. The beast was destroyed by being shot from a corner of the building which was unroofed. They commit also at these times great ravages among cattle and horses. It is said that they kill their prey by breaking their necks. If driven from the carcass, they seldom return to it. The Gauchos say that the jaguar, when wandering about at night, is much tormented by the foxes yelping as they follow him. This is a curious coincidence with the fact which is generally affirmed of the jackals accompanying, in a similarly officious manner, the East Indian tiger. The jaguar is a noisy animal, roaring much by night, and especially before bad weather.

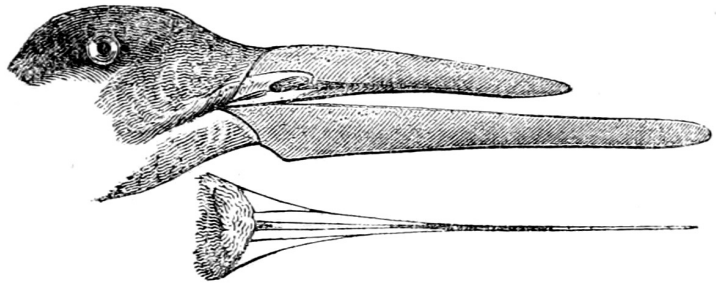
One day, when hunting on the banks of the Uruguay, I was shown certain trees, to which these animals constantly recur for the purpose, as it is said, of sharpening their claws. I saw three well-known trees; in front, the bark was worn smooth, as if by the breast of the animal, and on each side there were deep scratches, or rather grooves, extending in an oblique line, nearly a yard in length. The scars were of different ages. A common method of ascertaining whether a jaguar is in the neighbourhood is to examine these trees. I imagine this habit of the jaguar is exactly similar to one which may any day be seen in the common cat, as with outstretched legs and exserted claws it scrapes the leg of a chair; and I have heard of young fruit-trees in an orchard in England having been thus much injured. Some such habit must also be common to the puma, for on the bare hard soil of

Patagonia I have frequently seen scores so deep that no other animal could have made them. The object of this practice is, I believe, to tear off the ragged points of their claws, and not, as the Gauchos think, to sharpen them. The jaguar is killed, without much difficulty, by the aid of dogs baying and driving him up a tree, where he is despatched with bullets.

Owing to bad weather we remained two days at our moorings. Our only amusement was catching fish for our dinner: there were several kinds, and all good eating. A fish called the "armado" (a Silurus) is remarkable from a harsh grating noise which it makes when caught by hook and line, and which can be distinctly heard when the fish is beneath the water. This same fish has the power of firmly catching hold of any object, such as the blade of an oar or the fishing-line, with the strong spine both of its pectoral and dorsal fin. In the evening the weather was quite tropical, the thermometer standing at 79°. Numbers of fireflies were hovering about, and the musquitoes were very troublesome. I exposed my hand for five minutes, and it was soon black with them; I do not suppose there could have been less than fifty, all busy sucking.

October 15th.—"We got under way and passed Punta Gorda, where there is a colony of tame Indians from the province of Missiones. We sailed rapidly down the current, but before sunset, from a silly fear of bad weather, we brought-to in a narrow arm of the river. I took the boat and rowed some distance up this creek. It was very narrow, winding, and deep; on each side a wall thirty or forty feet high, formed by trees intwined with creepers, gave to the canal a singularly gloomy appearance. I here saw a very extraordinary bird, called the Scissor-beak (Rhynchops nigra). It has short legs, web feet, extremely long-pointed wings, and is of about the size of a tern. The beak is flattened laterally, that is, in a plane at right angles to that of a spoonbill or duck. It is as flat and elastic as an ivory paper-cutter, and the lower mandible, differently from every other bird, is an inch and a half longer than the upper. In a lake near Maldonado, from which the water had been nearly drained, and which, in consequence, swarmed with small fry, I saw several of these birds, generally in small flocks, flying rapidly backwards and forwards close to the surface of the lake. They kept their bills wide open, and the lower mandible half buried in the water. Thus skimming the surface, they ploughed

it in their course: the water was quite smooth, and it formed a most curious spectacle to behold a flock, each bird leaving its narrow wake on the mirror-like surface. In their flight they frequently twist about with extreme quickness, and dexterously manage with their projecting lower mandible to plough up small fish, which are secured by the upper and shorter half of their scissor-like bills. This fact I repeatedly



saw, as, like swallows, they continued to fly backwards and forwards close before me. Occasionally when leaving the surface of the water their flight was wild, irregular, and rapid; they then uttered loud harsh cries. When these birds are fishing, the advantage of the long primary feathers of their wings, in keeping them dry, is very evident. When thus employed, their forms resemble the symbol by which many artists represent marine birds. Their tails are much used in steering their irregular course.

These birds are common far inland along the course of the Rio Parana; it is said that they remain here during the whole year, and breed in the marshes. During the day they rest in flocks on the grassy plains, at some distance from the water. Being at anchor, as I have said, in one of the deep creeks between the islands of the Parana, as the evening drew to a close, one of these scissor-beaks suddenly appeared. The water was quite still, and many little fish were rising. The bird continued for a long time to skim the surface, flying in its wild and irregular manner up and down the narrow canal, now dark with the growing night and the shadows of the overhanging trees. At Monte Video, I observed that some large flocks during the day remained on the mud-banks at the head of the harbour, in the same manner as on the grassy plains near the Parana; and every evening

they took flight seaward. From these facts I suspect that the Rhynchops generally fishes by night, at which time many of the lower animals come most abundantly to the surface. M. Lesson states that he has seen these birds opening the shells of the mactræ buried in the sand-banks on the coast of Chile: from their weak bills, with the lower mandible so much projecting, their short legs and long wings, it is very improbable that this can be a general habit.

In our course down the Parana, I observed only three other birds, whose habits are worth mentioning. One is a small kingfisher (Ceryle Americana); it has a longer tail than the European species, and hence does not sit in so stiff and upright a position. Its flight also, instead of being direct and rapid, like the course of an arrow, is weak and undulatory, as among the soft-billed birds. It utters a low note, like the clicking together of two small stones. A small green parrot (Conurus murinus), with a grey breast, appears to prefer the tall trees on the islands to any other situation for its building-place. A number of nests are placed so close together as to form one great mass of sticks. These parrots always live in flocks, and commit great ravages on the cornfields. I was told that near Colonia 2500 were killed in the course of one year. A bird with a forked tail, terminated by two long feathers (Tyrannus savana), and named by the Spaniards scissor-tail, is very common near Buenos Ayres: it commonly sits on a branch of the *ombu* tree, near a house, and thence takes a short flight in pursuit of insects, and returns to the same spot. When on the wing it presents in its manner of flight and general appearance a caricature-likeness of the common swallow. It has the power of turning very shortly in the air, and in so doing opens and shuts its tail, sometimes in a horizontal or lateral and sometimes in a vertical direction, just like a pair of scissors.

October 16th.—Some leagues below Rozario, the western shore of the Parana is bounded by perpendicular cliffs, which extend in a long line to below San Nicolas; hence it more resembles a sea-coast than that of a fresh-water river. It is a great drawback to the scenery of the Parana, that, from the soft nature of its banks, the water is very muddy. The Uruguay, flowing through a granitic country, is much clearer; and where the two channels unite at the head of the Plata, the waters may for a long distance be distinguished by their black and red colours. In the evening, the wind being not quite fair, as usu-

al we immediately moored, and the next day, as it blew rather freshly, though with a favouring current, the master was much too indolent to think of starting. At Bajada, he was described to me as "hombre muy aflicto"—a man always miserable to get on; but certainly he bore all delays with admirable resignation. He was an old Spaniard, and had been many years in this country. He professed a great liking to the English, but stoutly maintained that the battle of Trafalgar was merely won by the Spanish captains having been all bought over; and that the only really gallant action on either side was performed by the Spanish admiral. It struck me as rather characteristic, that this man should prefer his countrymen being thought the worst of traitors, rather than unskilful or cowardly.

18th and 19th.—We continued slowly to sail down the noble stream: the current helped us but little. We met, during our descent, very few vessels. One of the best gifts of nature, in so grand a channel of communication, seems here wilfully thrown away — a river in which ships might navigate from a temperate country, as surprisingly abundant in certain productions as destitute of others, to another possessing a tropical climate, and a soil which, according to the best of judges, M. Bonpland, is perhaps unequalled in fertility in any part of the world. How different would have been the aspect of this river if English colonists had by good fortune first sailed up the Plata! What noble towns would now have occupied its shores! Till the death of Francia, the Dictator of Paraguay, these two countries must remain distinct, as if placed on opposite sides of the globe. And when the old bloody-minded tyrant is gone to his long account, Paraguay will be torn by revolutions, violent in proportion to the previous unnatural calm. That country will have to learn, like every other South American state, that a republic cannot succeed till it contains a certain body of men imbued with the principles of justice and honour.

October 20th.—Being arrived at the mouth of the Parana, and as I was very anxious to reach Buenos Ayres, I went on shore at Las Conchas, with the intention of riding there. Upon landing, I found to my great surprise that I was to a certain degree a prisoner. A violent revolution having broken out, all the ports were laid under an embargo. I could not return to my vessel, and as for going by land to the city, it was out of the question. After a long conversation with the commandant, I obtained permission to go the next day to General

Rolor, who commanded a division of the rebels on this side the capital. In the morning I rode to the encampment. The general, officers, and soldiers, all appeared, and I believe really were, great villains. The general, the very evening before he left the city, voluntarily went to the Governor, and with his hand to his heart, pledged his word of honour that he at least would remain faithful to the last. The general told me that the city was in a state of close blockade, and that all he could do was to give me a passport to the commander-in-chief of the rebels at Quilmes. We had therefore to take a great sweep round the city, and it was with much difficulty that we procured horses. My reception at the encampment was quite civil, but I was told it was impossible that I could be allowed to enter the city. I was very anxious about this, as I anticipated the Beagle's departure from the Rio Plata earlier than it took place. Having mentioned, however, General Rosas's obliging kindness to me when at the Colorado, magic itself could not have altered circumstances quicker than did this conversation. I was instantly told that though they could not give me a passport, if I chose to leave my guide and horses, I might pass their sentinels. I was too glad to accept of this, and an officer was sent with me to give directions that I should not be stopped at the bridge. The road for the space of a league was quite deserted. I met one party of soldiers, who were satisfied by gravely looking at an old passport: and at length I was not a little pleased to find myself within the city.

This revolution was supported by scarcely any pretext of grievances: but in a state which, in the course of nine months (from February to October, 1820), underwent fifteen changes in its government—each governor, according to the constitution, being elected for three years—it would be very unreasonable to ask for pretexts. In this case, a party of men—who, being attached to Rosas, were disgusted with the governor Balcarce—to the number of seventy left the city, and with the cry of Rosas the whole country took arms. The city was then blockaded, no provisions, cattle or horses, were allowed to enter; besides this, there was only a little skirmishing, and a few men daily killed. The outside party well knew that by stopping the supply of meat they would certainly be victorious. General Rosas could not have known of this rising; but it appears to be quite consonant with the plans of his party. A year ago he was elected governor, but he refused it, unless the Sala would also confer on him extraordinary

powers. This was refused, and since then his party have shown that no other governor can keep his place. The warfare on both sides was avowedly protracted till it was possible to hear from Rosas. A note arrived a few days after I left Buenos Ayres, which stated that the General disapproved of peace having been broken, but that he thought the outside party had justice on their side. On the bare reception of this, the Governor, ministers, and part of the military, to the number of some hundreds, fled from the city. The rebels entered, elected a new governor, and were paid for their services to the number of 5500 men. From these proceedings, it was clear that Rosas ultimately would become the dictator: to the term king, the people in this, as in other republics, have a particular dislike. Since leaving South America, we have heard that Rosas has been elected, with powers and for a time altogether opposed o the constitutional principles of the republic.