SURVEYING VOYAGES

OF THE

ADVENTURE AND THE BEAGLE,

1826—1830.

CHAPTER I.

Departure from Monte Video—Port Santa Elena—Geological remarks —Cape Fairweather—Non-existence of Chalk—Natural History— Approach to Cape Virgins, and the Strait of Magalhaens (or Magellan).

We sailed from Monte Video on the 19th of November 1826; and, in company with the Beagle, quitted the river Plata.

According to my Instructions, the Survey was to commence at Cape San Antonio, the southern limit of the entrance of the Plata; but, for the following urgent reasons, I decided to begin with the southern coasts of Patagonia, and Tierra del Fuego, including the Straits of Magalhaens.* In the first place, they presented a field of great interest and novelty; and secondly, the climate of the higher southern latitudes being so severe and tempestuous, it appeared important to encounter its rigours while the ships were in good condition—while the crews were healthy—and while the charms of a new and difficult enterprize had full force.

* Commonly called Magellan. See p. 11.
Our course was therefore southerly, and in latitude 45° south, a few leagues northward of Port Santa Elena, we first saw the coast of Patagonia. I intended to visit that port; and, on the 28th, anchored, and landed there.

Seamen should remember that a knowledge of the tide is of especial consequence in and near Port Santa Elena. During a calm we were carried by it towards reefs which line the shore, and were obliged to anchor until a breeze sprung up.

The coast along which we had passed, from Point Lobos to the north-east point of Port Santa Elena, appeared to be dry and bare of vegetation. There were no trees; the land seemed to be one long extent of undulating plain, beyond which were high, flat-topped hills of a rocky, precipitous character. The shore was fronted by rocky reefs extending two or three miles from high-water mark, which, as the tide fell, were left dry, and in many places were covered with seals.

As soon as we had secured the ships, Captain Stokes accompanied me on shore to select a place for our observations. We found the spot which the Spanish astronomers of Malaspina’s Voyage (in 1798) used for their observatory, the most convenient for our purpose. It is near a very steep shingle (stony) beach at the back of a conspicuous red-coloured, rocky projection which terminates a small bay, on the western side, at the head of the port. The remains of a wreck, which proved to be that of an American whaler, the Decatur of New York, were found upon the extremity of the same point; she had been driven on shore from her anchors during a gale.

The sight of the wreck, and the steepness of the shingle beach just described, evidently caused by the frequent action of a heavy sea, did not produce a favourable opinion of the safety of the port: but as it was not the season for easterly gales, to which only the anchorage is exposed, and as appearances indicated a westerly wind, we did not anticipate danger.

While we were returning on board, the wind blew so strongly that we had much difficulty in reaching the ships, and the boats were no sooner hoisted up, and every thing
Nov. 1826. Fire—geology—guanacoes.

made snug, than it blew a hard gale from the S.W. The water however, from the wind being off the land, was perfectly smooth, and the ships rode securely through the night: but the following morning the gale increased, and veered to the southward, which threw a heavy sea into the port, placing us, to say the least, in a very uneasy situation. Happily it ceased at sunset. In consequence of the unfavourable state of the weather, no attempt was made to land in order to observe an eclipse of the sun; to make which observation was one reason for visiting this port.

The day after the gale, while I was employed in making some astronomical observations, a party roamed about in quest of game: but with little success, as they killed only a few wild ducks. The fire which they made for cooking communicated to the dry stubbly grass, and in a few minutes the whole country was in a blaze. The flames continued to spread during our stay, and, in a few days, more than fifteen miles along the coast, and seven or eight miles into the interior were overrun by the fire. The smoke very much impeded our observations, for at times it quite obscured the sun.

The geological structure of this part of the country, and a considerable portion of the coast to the north and south, consists of a fine-grained porphyritic clay slate. The summits of the hills near the coast are generally of a rounded form, and are paved, as it were, with small, rounded, siliceous pebbles, imbedded in the soil, and in no instance lying loose or in heaps; but those of the interior are flat-topped, and uniform in height, for many miles in extent. The valleys and lower elevations, notwithstanding the poverty and parched state of the soil, were partially covered with grass and shrubby plants, which afford sustenance to numerous herds of guanacoes. Many of these animals were observed feeding near the beach when we were working into the bay, but they took the alarm, so that upon landing we only saw them at a considerable distance. In none of our excursions could we find any water that had not a brackish taste. Several wells have been dug in the valleys, both near the sea and at a considerable distance from it, by the
crews of sealing vessels; but, except in the rainy season, they all contain saltish water. This observation is applicable to nearly the whole extent of the porphyritic country. Oyster-shells, three or four inches in diameter, were found, scattered over the hills, to the height of three or four hundred feet above the sea. Sir John Narborough, in 1659, found oyster-shells at Port San Julian; but, from a great many which have been lately collected there, we know that they are of a species different from that found at Port Santa Elena. Both are fossils.

No recent specimen of the genus Ostrea was found by us on any part of the Patagonian coast. Narborough, in noticing those at Port San Julian, says, "They are the biggest oyster-shells that I ever saw, some six, some seven inches broad, yet not one oyster to be found in the harbour: whence I conclude they were here when the world was formed."

The short period of our visit did not enable us to add much to natural history. Of quadrupeds we saw guanacoes, foxes, cavies, and the armadillo; but no traces of the puma (Felis concolor), or South American lion, although it is to be met with in the interior.

I mentioned that a herd of guanacoes was feeding near the shore when we arrived. Every exertion was made to obtain some of the animals; but, either from their shyness, or our ignorance of the mode of entrapping them, we tried in vain, until the arrival of a small sealing-vessel, which had hastened to our assistance, upon seeing the fires we had accidentally made, but which her crew thought were intended for signals of distress. They shot two, and sent some of the meat on board the Adventure.

The next day, Mr. Tarn succeeded in shooting one, a female, which, when skinned and cleaned, weighed 168 lbs. Narborough mentions having killed one at Port San Julian, that weighed, "cleaned in his quarters, 208 lbs." The watchful and wary character of this animal is very remarkable. Whenever a herd is feeding, one is posted, like a sentinel, on a height; and, at the approach of danger, gives instant alarm by a loud neigh, when away they all go, at a hand-gallop, to the next eminence, where they quietly resume their feeding,
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natural history.  

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until again warned of the approach of danger by their vigilant 'look-out.'

Another peculiarity of the guanaco is, the habit of resorting to particular spots for natural purposes. This is mentioned in the 'Dictionnaire d'Histoire Naturelle,' in the 'Encyclopédie Méthodique,' as well as other works.

In one place we found the bones of thirty-one guanacos collected within a space of thirty yards, perhaps the result of an encampment of Indians, as evident traces of them were observed; among which were a human jaw-bone, and a piece of agate ingeniously chipped into the shape of a spear-head.

The fox, which we did not take, appeared to be small, and similar to a new species afterwards found by us in the Strait of Magalhaens.

The cavia* (or, as it is called by Narborough, Byron, and Wood, the hare, an animal from which it differs both in appearance and habits, as well as flavour), makes a good dish; and so does the armadillo, which our people called the shell-pig.†

This little animal is found abundantly about the low land, and lives in burrows underground; several were taken by the seamen, and, when cooked in their shells, were savoury and wholesome.

Teal were abundant upon the marshy grounds. A few partridges, doves, and snipes, a rail, and some hawks were shot.

The few sea-birds that were observed consisted of two species of gulls, a grebe and a penguin (Aptenodytes Magellanica).

We found two species of snakes and several kinds of lizards. Fish were scarce, as were also insects; of the last, our collec-

* Dasyprocta patagonica: it is the Patagonian cavy of Dr. Shaw, and Pennant's Quadr., tab. 39, and the lièvre pampa of D'Azara. M. Desmarest thinks that if the teeth were examined it would form a new genus, for which he proposes the name of Dolichotis (Ency. Meth. Mamm. p. 359). At present he has, from its external character, placed it amongst the genus Dasyprocta (agouti). The only one that was taken was not preserved, which prevented me from ascertaining the fact.

† Dasyus minutus, Desm. Tatou pichiy, or tatou septième of D'Azara, &c. &c. It has seven bands.
tions consisted only of a few species of Coleoptera, two or three Lepidoptera, and two Hymenoptera.

Among the sea-shells, the most abundant was the Patella deaurata, Lamk.; this, with three other species of Patella, one Chiton, three species of Mytilus, three of Murex, one of Crepidula, and a Venus, were all that we collected.

About the country, near the sea-shore, there is a small tree, whose stem and roots are highly esteemed for fuel by the crews of sealing-vessels which frequent this coast. They call it ‘piccolo.’ The leaf was described to me as having a prickle upon it, and the flower as of a yellow colour. A species of berberis also is found, which when ripe may afford a very palatable fruit.

Our short visit gave us no flattering opinion of the fertility of the country near this port. Of the interior we were ignorant; but, from the absence of Indians and the scarcity of fresh water, it is probably very bare of pasturage. Falkner, the Jesuit missionary, says these parts were used by the Tehuelchet tribes for burying-places: we saw, however, no graves, nor any traces of bodies, excepting the jaw-bone above-mentioned; but subsequently, at Sea Bear Bay, we found many places on the summits of the hills which had evidently been used for such a purpose, although then containing no remains of bodies. This corresponds with Falkner’s account, that after a period of twelve months the sepulchres are formally visited by the tribe, when the bones of their relatives and friends are collected and carried to certain places, where the skeletons are arranged in order, and tricked out with all the finery and ornaments they can collect.

The ships sailed from Port Santa Elena on the 5th December, and proceeded to the southward, coasting the shore as far as Cape Two Bays.

Our object being to proceed with all expedition to the Strait of Magalhaens, the examination of this part of the coast was reserved for a future opportunity. On the 18th, we had reached within fifty miles of Cape Virgins, the headland at the entrance of the strait, but it was directly in the wind’s eye
Dec. 1826.  CAPE FAIRWEATHER—CHALK.

of us. The wind veering to S.S.W., we made about a west course. At day-light the land was in sight, terminating in a point to the S.W., so exactly like the description of Cape Virgins and the view of it in Anson's voyage, that without considering our place on the chart, or calculating the previous twenty-four hours' run, it was taken for the Cape itself, and, no one suspecting a mistake, thought of verifying the ship's position. The point, however, proved to be Cape Fairweather. It was not a little singular, that the same mistake should have been made on board the Beagle, where the error was not discovered for three days.*

From the appearance of the weather I was anxious to approach the land in order to anchor, as there seemed to be every likelihood of a gale; and we were not deceived, for at three o'clock, being within seven miles of the Cape, a strong wind sprung up from the S.W., and the anchor was dropped. Towards evening it blew so hard, that both ships dragged their anchors for a considerable distance.

On the charts of this part of the coast the shore is described to be formed of "chalk hills, like the coast of Kent." To geologists, therefore, especially, as they were not disposed to believe that such was the fact, this was a question of some interest. From our anchorage the appearance of the land favoured our belief of the existence of chalk. The outline was very level and steep; precipitous cliffs of whitish colour, stratified horizontally, with their upper part occasionally worn into hollows, strongly resembled the chalk cliffs of the English coasts.

The gale prevented our landing for three days, when (19th) a few minutes sufficed to discover that the cliffs were composed

* A similar error was made by one of the ships of the fleet under Loyasa in the year 1525. The Nodales also, in their description of the coast, mention the similarity of appearance in the two capes, Virgins and Fairweather. "Y venido de mar en fuera a buscar la tierra facilmente podian hacer de Río de Gallegos el Cabo de Virgenes," (and in making the land Cape Virgins may easily be mistaken for the river Gallegos).—Viaje de los Nodales, p. 53.
of soft clay, varying in colour and consistence, and disposed in strata running horizontally for many miles without interruption, excepting where water-courses had worn them away. Some of the strata were very fine clay, unmixed with any other substance, whilst others were plentifully strewn with round siliceous gravel, without any vestige of organic remains. The sea beach, from high-water mark to the base of the cliffs, is formed by shingle, with scattered masses of indurated clay of a green colour.† Between the high and low tide marks there is a smooth beach of the same green clay as the masses above-mentioned, which appears to have been hardened by the action of the surf to the consistence of stone. Generally this beach extends for about one hundred yards farther into the sea, and is succeeded by a soft green mud, over which the water gradually deepens. The outer edge of the clay forms a ledge, extending parallel with the coast, upon the whole length of which the sea breaks, and over it a boat can with difficulty pass at low water.

The very few shells we found were dead. Strewed about the beach were numbers of fish, some of which had been thrown on shore by the last tide, and were scarcely stiff. They principally belonged to the genus Ophidium; the largest that we saw measured four feet seven inches in length, and weighed twenty-four pounds. Many caught alongside the ship were, in truth, coarse and insipid; yet our people, who fed heartily upon them, called them ling, and thought them palatable. The hook, however, furnished us with a very wholesome and well-flavoured species of cod (Gadus). Attached to the first we found two parasitical animals; one was a Cymothoa, the other a species of Lernaea, which had so

* Some of the specimens of the clay strata consist, according to Dr. Fitton, who has kindly examined my collection, of a white marl not unlike certain varieties of the lower chalk; and of a clay having many of the properties of fuller’s earth. The pebbles on the beach consist of quartz, red jasper, hornstone, and flinty slate, but do not contain any stone resembling chalk flint.

† Dr. Fitton considers these masses of clay to bear a resemblance to the upper green sand of England.
securely attached itself under the skin, as not to be removed without cutting off a piece of the flesh with it. An undescribed species of *Muræna* was also taken.

Whilst we were on shore, the Beagle moved eight or nine miles nearer to the Cape, where Captain Stokes landed to fix positions of remarkable land. One peaked hill, from the circumstance of his seeing a large animal near it, he called Tiger Mount. Mr. Bowen shot a guanaco; and being at a distance in shore, unable to procure assistance, he skinned and quartered it with his pocket-knife, and carried it upon his shoulders to the boat.

Next morning the ships weighed, and proceeded towards Cape Virgins.

When abreast of Cape Fairweather, the opening of the river Gallegos was very distinctly seen; but the examination of it was deferred to a future opportunity. Passing onward, the water shoaled to four fathoms, until we had passed extensive banks, which front the river.

Our approach to the entrance of the Strait, although attended with anxiety, caused sensations of interest and pleasure not easily to be described. Though dangers were experienced by some navigators who had passed it, the comparative facility with which others had effected the passage showed that, at times, the difficulties were easily surmounted, and we were willing to suppose that in the former case there might have been some little exaggeration.

The most complete, and, probably, the only good account of the navigation of the Strait of Magalhaens is contained in the narrative of Don Antonio de Cordova, who commanded the Spanish frigate Santa Maria de la Cabeza, on a voyage expressly for the purpose of exploring the strait. It was published under the title of 'Ultimo Viage al Estrecho de Magal- lanes.' That voyage was, however, concluded with only the examination of the eastern part, and a subsequent expedition was made, under the command of the same officer, the account of which was appended to the Cabeza's voyage; so that Cordova's expedition still retained the appellation of 'Ultimo
Viage, &c. It is written in a plain and simple style, gives a most correct account of every thing seen, and should therefore be in the possession of every person who attempts the navigation of the strait.

Cordova’s account of the climate is very uninviting. Speaking of the rigours of the summer months (January, February, and March), he says, “Seldom was the sky clear, and short were the intervals in which we experienced the sun’s warmth: no day passed by without some rain having fallen, and the most usual state of the weather was that of constant rain.”

The accounts of Wallis and Carteret are still more gloomy. The former concludes that part of his narrative with the following dismal and disheartening description: “Thus we quitted a dreary and inhospitable region, where we were in almost continual danger of shipwreck for near four months, having entered the strait on the 17th of December, and quitted it on the 11th of April 1767: a region where, in the midst of summer, the weather was cold, gloomy, and tempestuous, where the prospects had more the appearance of a chaos than of nature; and where for the most part the valleys were without herbage and the hills without wood.”

These records of Cordova and Wallis made me feel not a little apprehensive for the health of the crew, which could not be expected to escape uninjured through the rigours of such a climate. Nor were the narratives of Byron or Bougainville calculated to lessen my anxiety. In an account, however, of a voyage to the strait by M. A. Duclos Guyot, the following paragraph tended considerably to relieve my mind upon the subject:—“At length, on Saturday the 23d of March, we sailed out of that famous Strait, so much dreaded, after having experienced that there, as well as in other places, it was very fine, and very warm, and that for three-fourths of the time the sea was perfectly calm.”

In every view of the case, our proximity to the principal scene of action occasioned sensations of a peculiar nature, in which, however, those that were most agreeable and hopeful

* Ultimo Viage al Estrecho de Magallanes, part ii. p. 298.