European nations, but especially to a country so essentially commercial as Great Britain.

A few words must be said of the map. Travelling along the coast of the Atlantic from Cape Spartel to Cape Blanco, a distance of two hundred and fifty miles, generally within one mile of the sea, and often along the beach, a sailor's attention would naturally be directed to endeavour to fix the line of the coast, to effect which no opportunity was lost; not less than one hundred bearings were taken, solely for the purpose of fixing points and headlands accurately, and which were invariably transferred to paper before going to bed. The rough track contained in fourteen sheets, on the scale of half an inch to a mile, will exemplify this. These sheets have been connected, corrected by astronomical observations, and reduced to a small scale. The windings of the river *Seboo* are from a sketch of Colonel Harding, R. E., who accompanied a mission to *Fās* in 1825. The points of the northern coast from Tofiño and the Admiralty charts; for the south-western parts of the coast obligations are due to the liberality and kindness of Captain Beaufort, hydrographer, for allowing the use of the late Captain Boteler's observations. With such help there is no hesitation in asserting that the present is by far the most correct map hitherto completed of the empire of Marocco.

XI.—*Some Observations upon the Geography of the Southern Extremity of South America, Tierra del Fuego, and the Strait of Magalhaens;* made during the late Survey of those coasts in his Majesty's ships Adventure and Beagle, between the years 1826 and 1830. By Captain Phillip Parker King, F.R.S., &c., and Commander of the Expedition. Read 25th April and 9th May, 1831.

CONSIDERING the vast extent of sea-coast that comprises the southern part of this continent, it is not a little surprising that it should have been so frequently passed by during the last century without having been more visited and explored. Within the last eight or ten years, however, it has been very much resorted to by English and American vessels in the seal trade, and to the observing portion of their enterprising crews many of its intricacies are well known; but as the knowledge they have derived from their experience has only in one instance, that of Mr. Weddel's voyage, been published to the world, our charts cannot be said to have been much improved for the last fifty years.

The eastern coast of Patagonia, by which name the country

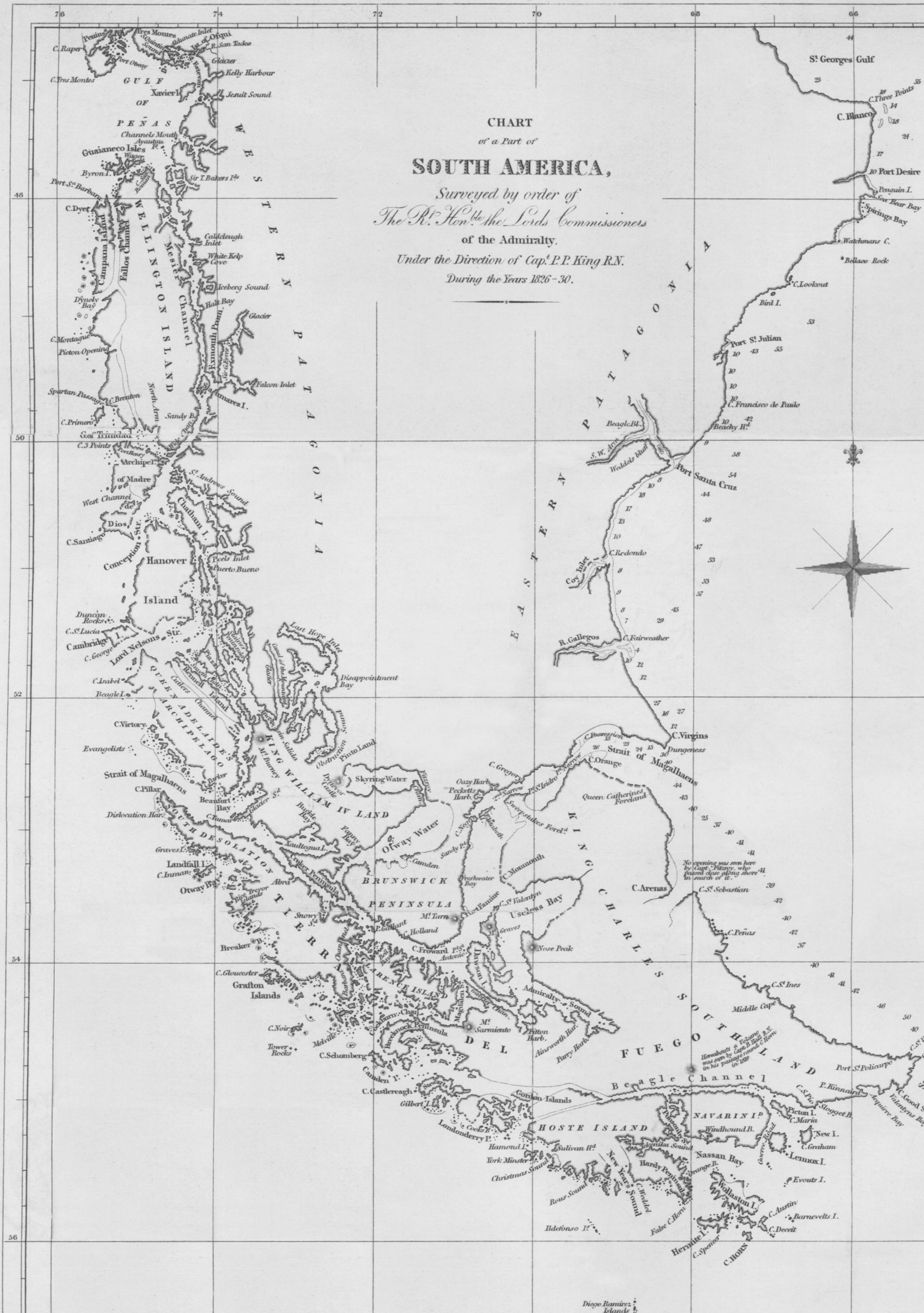


CHART
of a Part of
SOUTH AMERICA,
Surveyed by order of
The Rt. Honble. the Lords Commissioners
of the Admiralty,
Under the Direction of Capt. P. P. King R.N.
During the Years 1826-30.
WESTERN PATAGONIA
EASTERN PATAGONIA
KING CHARLES SOUTHLAND
TIERRA DEL FUEGO
GULF OF PEÑAS
WELLINGTON ISLAND
Hanover Island
QUEEN ADELAIDE'S ARCHIPELAGO
KING WILLIAM IV LAND
BRUNSWICK PENINSULA
HOSTE ISLAND
NAVARIN I.
St. Georges Gulf
C. Blanco
Port Desire
Port St. Julian
Port Santa Cruz
C. Virgins
Strait of Magalhaens
Beagle Channel
C. HORN
Diego Ramirez Islands
No opening was seen here by Capt. Fitzroy, who passed close along shore in search of it.
Hereabouts a Volcano was seen by Capt. B. Hall R.N. in his passage round C. Horn in 1820
76
74
72
70
68
66
48
50
52
54
56

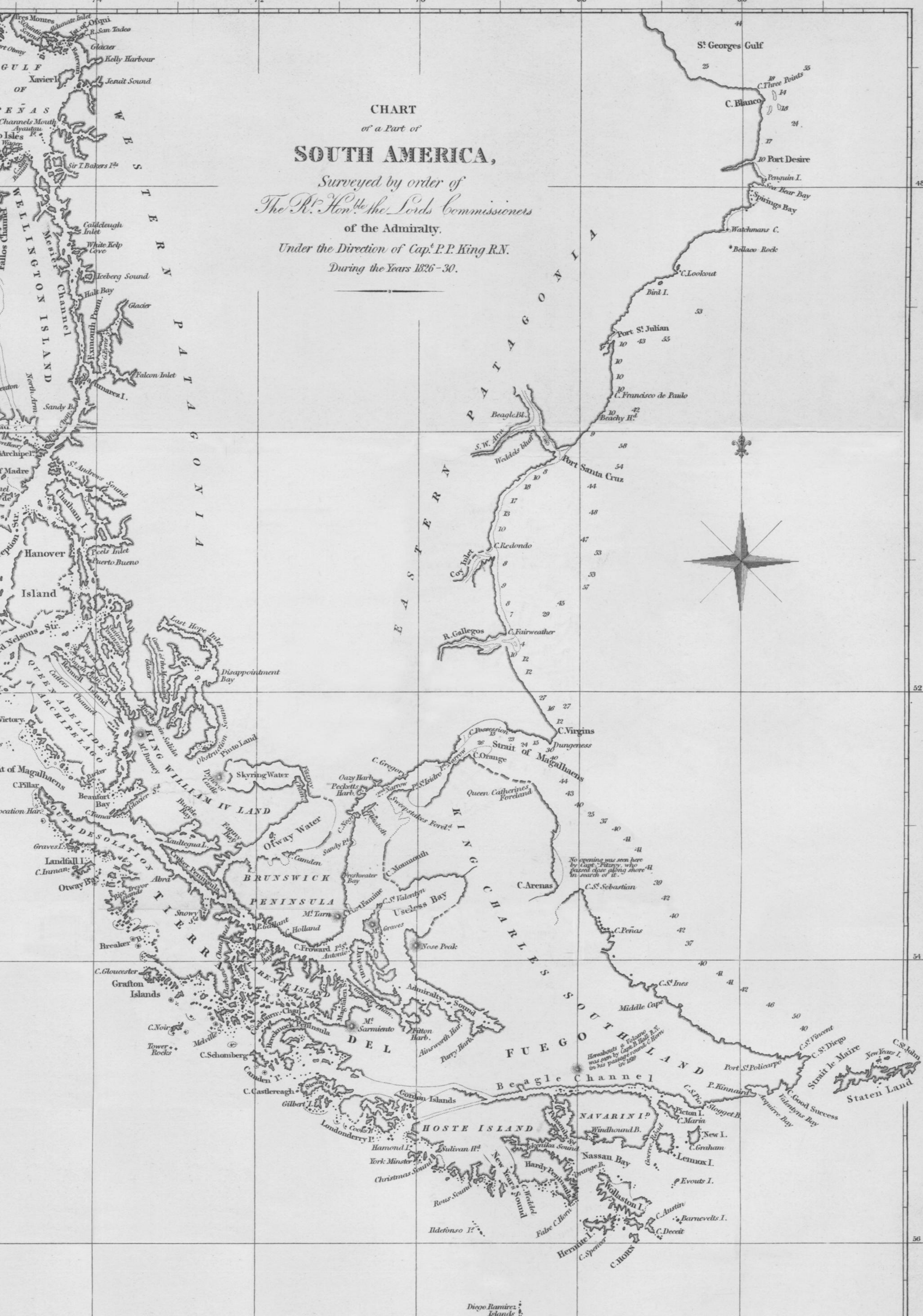
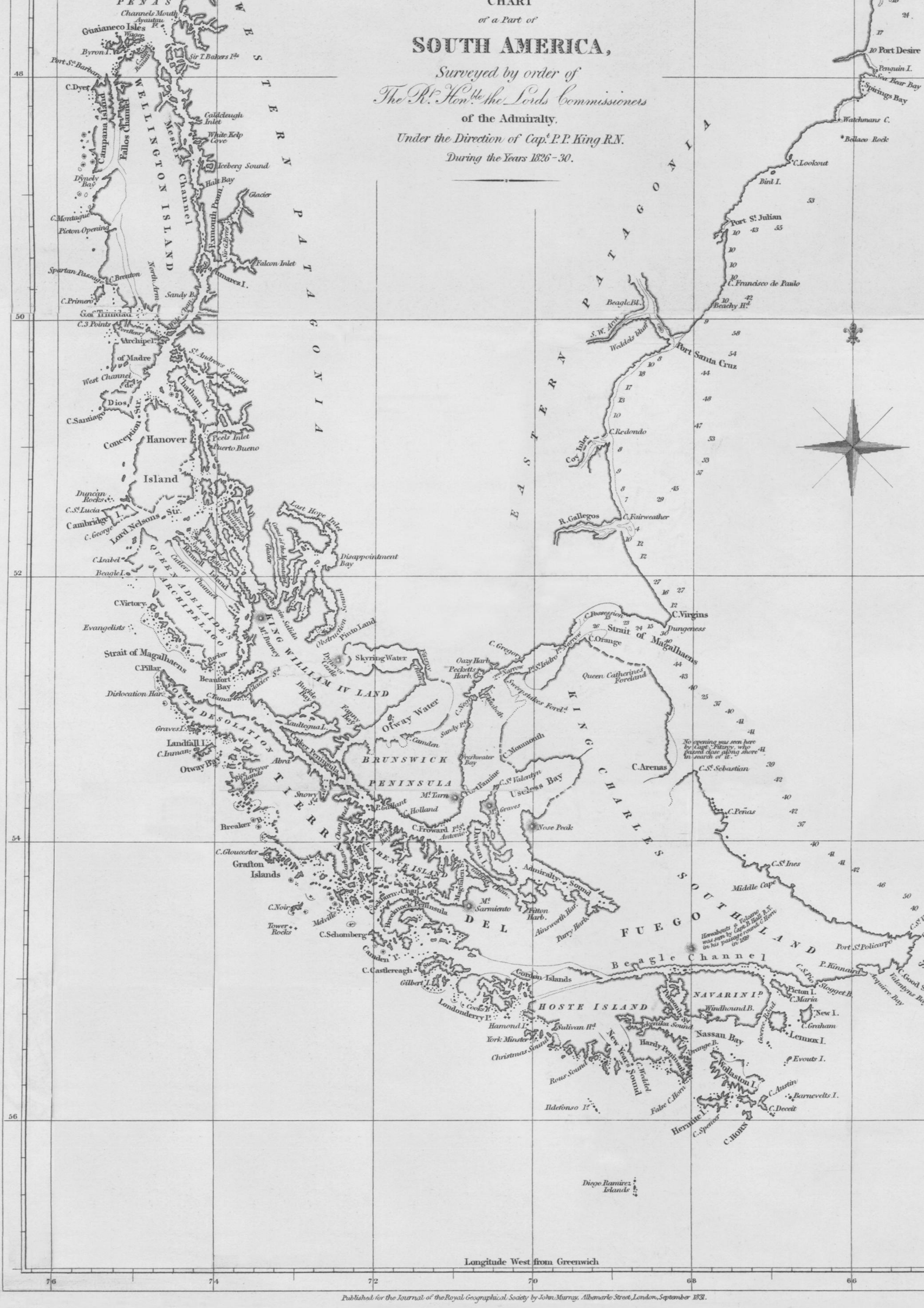
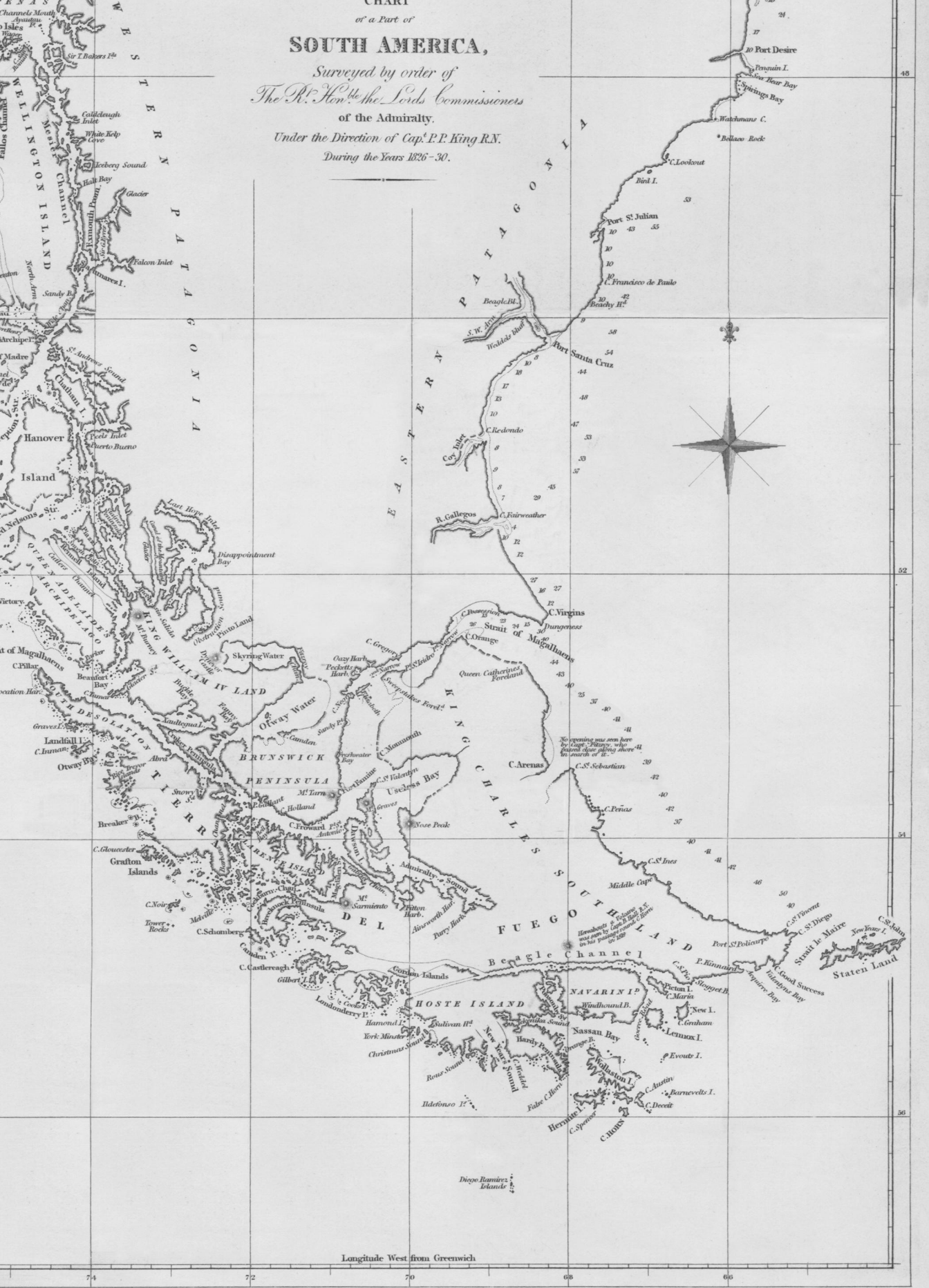


CHART
of a Part of
SOUTH AMERICA,
Surveyed by order of
The Rt. Honble. the Lords Commissioners
of the Admiralty.
Under the Direction of Capt. P. P. King R.N.
During the Years 1826-30.
74
72
70
68
66
48
52
54
56
St. Georges Gulf
C. Three Points
C. Blanco
Port Desire
Penguin I.
Sea Bear Bay
Spirings Bay
Watchmans C.
Bellaco Rock
C. Lookout
Bird I.
Port St. Julian
C. Francisco de Paulo
Beachy Hd.
Beagle Bl.
S. W. Arm
Weddels bluff
Port Santa Cruz
C. Redondo
Coy Inlet
R. Gallegos
C. Fairweather
C. Virgins
Dungeness
C. Possession
C. Orange
Strait of Magalhaens
Queen Catherines Foreland
No opening was seen here by Captn. Fitzroy, who passed close along shore in search of it.
C. Arenas
C. St. Sebastian
C. Peñas
C. St. Ines
Middle Cape
Port St. Policarpo
C. St. Vincent
C. St. Diego
Strait le Maire
New Years I.
C. St. John
Staten Land
C. Good Success
Valentyns Bay
Acquirre Bay
P. Kinnaird
Slogget B.
C. S. Pio
Picton I.
C. Maria
New I.
C. Graham
Lennox I.
Goeree Road
Evouts I.
Barnevelts I.
C. Austin
C. Deceit
C. HORN
C. Spencer
Hermite I.
False C. Horn
Wollaston I.
Orange B.
Nassau Bay
Hardy Peninsula
C. Weddel
New Years Sound
Rous Sound
Ildefonso Is.
Diego Ramirez Islands
NAVARIN I.
Windhound B.
Ponsonby Sd.
Tekenika Sound
HOSTE ISLAND
Beagle Channel
Hereabouts a Volcano was seen by Capt. B. Hall R.N. in his passage round C. Horn in 1819
FUEGO
SOUTH LAND
KING CHARLES
EASTERN PATAGONIA
WESTERN PATAGONIA
TIERRA DEL
Gordon Islands
Sulivan Hd.
Christmas Sound
York Minster
Hamond I.
Londonderry Is.
Cooks B.
Gilbert I.
C. Castlereagh
Stewarts
Camden Is.
C. Schomberg
Brecknock Peninsula
Cockburn Chan.
Mt. Sarmiento
Fitton Harb.
Ainsworth Har.
Parry Harb.
Admiralty Sound
Gabriel Chan.
Magdalen Sd.
Dawson I.
Nose Peak
Mt. Graves
Useless Bay
C. St. Valentyn
Port Famine
Mt. Tarn
C. Holland
P. Gallant
C. Froward
Pt. St. Antonio
CLARENCE ISLAND
Bell Bay
Barbara Channel
Melville Sd.
Tower Rocks
C. Noir
Grafton Islands
C. Gloucester
Breaker B.
Snowy Sd.
Rice Trevor Islands
Abra
Otway Bay
C. Inman
Landfall I.
Graves I.
SOUTH DESOLATION
C. Pillar
Strait of Magalhaens
Beaufort Bay
C. Tamar
Glacier Sd.
Xaultegua I.
Croker Peninsula
BRUNSWICK PENINSULA
Freshwater Bay
C. Monmouth
Sandy Pt.
C. Camden
Otway Water
Fanny Bay
Buckle Bay
KING WILLIAM IV LAND
Skyring Water
Fitzroy Chan.
Dynevor Castle
C. Negro
Elizabeth
Sweepstakes Foreland
Oazy Harb.
Pecketts Harb.
C. Gregory
2nd Narrow
Pt. St. Isidro
1st Narrow
Mt. Burney
Pinto Land
Obstruction Sound
Disappointment Bay
Last Hope Inlet
Canal of the Mountains
Glacier
ADELAIDE'S ARCHIPELAGO
QUEEN
Cutlers Channel
Rennell Island
Smyth Chan.
Piazzi
Staines Peninsula
Victory
Nelsons Str.
Hanover Island
Peels Inlet
Puerto Bueno
Chatham I.
St. Andrews Sound
Archipel.
Madre
Sandy B.
Wide Chan.
North Arm
WELLINGTON ISLAND
Mesier Channel
Falcon Inlet
Saumarez I.
Exmouth Prom.
Sir G. Eyres
Glacier
Halt Bay
Iceberg Sound
White Kelp Cove
Calldeleugh Inlet
Sir T. Bakers Ids.
Wager
Ayautau Is.
Channels Mouth
GULF OF PEÑAS
Xavier I.
Jesuit Sound
Kelly Harbour
Glacier
R. San Tadeo
Ist. of Ofqui
Aldunate Inlet
Tres Montes
S. Quintin Sound
Port Otway



Published for the Journal of the Royal Geographical Society by John Murray, Albemarle Street, London, September 1831.

Printed by J. Shury



Published for the Journal of the Royal Geographical Society by John Murray, Albemarle Street, London, September 1832.

Engraved by J. Gardiner.

between the River Plate and the Strait of Magalhaens* is known, as well as the north-eastern side of Tierra del Fuego, were coasted by Malespina; and the charts resulting therefrom not only vie with any contemporaneous production for accuracy and detail, but are even now quite sufficient for the general purposes of navigation.

The Strait of Magalhaens has been explored by several navigators; but, among the numerous plans of it that are extant, those of Sir John Narborough and Cordova are the most correct. The first is particularly noticed in the late Admiral Burney's very useful work, and the result of the last has been published in the Spanish language, and is entitled '*Ultimo Viage al Estrecho de Magallanes.*' A second voyage was also made by Cordova to the Strait, the proceedings of which form an appendix to the above work. It is furnished with a good general chart of the coast, another of the Strait, and many plans of the anchorages within it. Byron, Wallis, Carteret, and Bougainville had already made considerable additions to Narborough's plan, from which a chart had been compiled that answered all the purposes of general geographical information, and might even have been sufficient for its navigation: for the latter purpose, however, Cordova's chart was much superior, but being published in Spain only, and its existence little known in England, I found great difficulty in procuring a copy before I sailed for my own use.

The southern coast of Tierra del Fuego between Cape Good Success, the southern limit of the Strait le Maire, and Cape Pillar at the Strait of Magalhaens's western end, were very little known. Captain Cook's voyage affords several useful notices of the coast between Cape Deseado and Christmas Sound, and the Dutch fleet under Hermite partially explored the neighbourhood of Cape Horn: a confused chart of this coast, however, was the best that could be put together; and although Weddel has more recently published a good account of the harbours and anchorages near Cape Horn and New Year's Sound, yet little available benefit was derived from it, because these different navigators having confined their examinations to small portions of the coast, it was difficult to connect their respective plans, even on so small a scale as that of the general chart.

The western coast of South America, which is very intricate, extending from Cape Victory (the north-west entrance of the

* There has existed much difference of opinion as to the correct mode of spelling this name. The French and English usually write it Magellan, and the Spaniards Magallànes; but by the Portuguese, and he was a native of Portugal, it is universally written Magalhães. Admiral Burney and Mr. Dalrymple spell it Magalhanes, which mode I have elsewhere adopted, but I have convinced myself of the propriety of following the Portuguese orthography for a name which to this day is very common both in Portugal and Brazil.

Strait of Magalhaens) to the island of Chiloe, may be said to have been wholly unknown; for since the time of Sarmiento de Gamboa nothing but the brief notices of two missionary voyages in piraguas, from Chiloe to the Guiateca and Guaianeco islands, had been published in the least descriptive of it.

Every person conversant with South American geography must be acquainted with the voyage of Sarmiento. From the determined perseverance through difficulties of no ordinary nature shown by this excellent and skilful navigator, we are possessed of the details of a voyage down the western coast and through the Strait of Magalhaens that has never been surpassed. His journal has furnished us with the description of a coast more difficult and dangerous to explore than any that could readily be selected; for it was at that time perfectly unknown, and is exposed to a climate of perpetual storms and rain: yet the account is written with such minute care and correctness, that we have been enabled to detect upon our charts almost every place that is described in the Gulf of Trinidad, and the channels to the south of it, particularly their termination at his *Ancon sin Salida.*

It would be irrelevant to enter here into the history of Sarmiento's voyage, or indeed of any other connected with the coasts I am about to describe. Modern surveys are made so much more in detail than what was formerly practised or considered necessary, that little use can be derived from the charts and plans that have been hitherto formed; but the accounts of the voyages connected with them are replete with interesting and useful matter, and much amusement as well as information may be derived from their perusal, particularly Sir John Narborough's journal, and Byron's romantic and pathetic narrative of the loss of the Wager.

The Cordillera of the Andes, which is known to extend from the northern part of the continent almost to its southern extremity without a break, gradually decreases in elevation as it reaches the higher southern latitudes. In the neighbourhood of Quito, Chimborazo, and Pinchincha rear their summits to the height nearly of twenty-two thousand feet above the level of the sea: near Santiago de Chile the highest land is fourteen thousand feet; farther south, at Concepcion, it is still lower; and at Chiloe there are few parts of the range exceeding six thousand feet. Between Chiloe and the Strait of Magalhaens the average height may be taken at three thousand feet; but there are some mountains which may be between five and six thousand feet high.

By a reference to the chart it will be seen that about the parallel of 40° the coast begins to assume, and retains to its furthest extremity, a very different appearance from that which it exhibits to the northward, where the sea, which is kept at a distance from the Cordillera by a belt of comparatively low land for

continuous intervals of some hundred miles, washes a long unbroken shore, affording neither shelter for vessels nor landing for boats; but to the southward of that parallel its waters reach to the very base of the great chain of the Andes, and, flowing as it were into the deep ravines that wind through its ramifications, form numerous channels, sounds, and gulfs, and, in many instances, insulate large portions of land. In fact the whole of this space is fronted by large islands and extensive archipelagos, of which the most conspicuous are the great island of Chiloe, Wellington Island, the Archipelago of Madre de Dios, Hanover Island, and Queen Adelaide's Archipelago. The last forms the western entrance of the strait on its north side. The land of Tres Montes, however, is an exception: it is a peninsula, and is the only part of the continent within the above limits that is exposed to the ocean's swell. It forms the northern part of the Gulf of Penas, and is joined to the main by the narrow isthmus of Ofqui, over which the Indians, in travelling along the coast, carry their canoes to avoid the risk of passing round the peninsula, a route of extreme danger. It was here that Byron and his shipwrecked companions crossed over with their Indian guides; but it is a route that is not much frequented; for this part of the coast is very thinly inhabited, and the trouble of pulling to pieces and reconstructing their canoes *, an operation absolutely necessary for them to adopt from the difficulty of the ascent and descent of the mountain over which they must pass, so great that I imagine it is only performed on occasions of great importance. In this way the piraguas which conveyed the missionary voyagers to the Guaianeco islands were transported over the isthmus; the particulars of which are fully detailed in their journals†.

The river San Tadeo, although of small size, being navigable only for eleven miles, is the largest of any of the rivers of the coast to the south of the archipelago of Chiloe, and therefore merits a particular description. At seven miles from the mouth it is fed by two streams or torrents, the currents of which are so strong that a fast pulling boat can hardly make way against it. One of these streams takes its rise in a mountainous range over which it is probable the communicating road passes; and the other is the drain of an extensive glacier or plain of ice of fifteen miles in extent. The river falls into the Gulf of St. Estevan over a shallow bar upon which there is scarcely two feet water, and at low tide is probably dry.

* During our examination of this part, our boats ascended the river San Tadeo and endeavoured in vain to find any traces of the road; an almost impenetrable jungle of reeds and underwood lined the banks of the river, and time was too valuable to admit of further delay in search of an object comparatively of minor importance.

† Agueros, Descripcion Historial de la Provincia y Archipielago de Chiloe. 1791, p. 229.

At the head of St. Estevan's Gulf is St. Quentin's Sound; both were examined and found to afford excellent anchorage, and they are both of easy access should a ship, passing up the coast, find herself upon a lee shore and not able to weather the land, as was the case with the ill-fated Wager*.

The Guaianeco islands form the southern head of the Gulf of Peñas; then follows Wellington Island, separated from the main by the Mesier Channel, which had not been previously explored, its mouth only being laid down in the charts compiled from the information of Machado, a pilot who was sent in 1769 by the viceroy of Peru to examine the coast from Chiloe to the Strait of Magalhaens†. This channel is also noticed in one of the two missionary voyages above mentioned; but the object of these expeditions being for the purpose of converting the Indians to Christianity‡, and not for the extension of geographical knowledge, little information of that nature could be obtained from their journal: the entrance of the Mesier, however, is described by them; and on one occasion they were obliged to take refuge in it for fifteen days‖. With this exception I cannot find that it has ever been entered before our visit.

The length of the channel is one hundred and sixty miles, and it joins the Concepcion Strait behind the Madre de Dios archipelago, at the Brazo Ancho of Sarmiento. Lieutenant Skyring, who superintended this particular part of the survey, called the land which it insulates, Wellington Island; the seaward coast of which, bearing on the old chart the name of Campaña, is probably fronted by one or more islands. Fallos Channel, which separates the Campaña and Wellington Islands, was examined, from its northern entrance, for thirty-three miles, and was conjectured, after communicating with the sea at Dynely Sound, to extend to the southward, and fall into the Gulf of Trinidad by one of the deep sounds which were noticed on the north shore.

About thirty miles within the Mesier Channel, from the northern extremity, the west side appears to be formed by a succession of large islands, many of which are separated by wide channels lead-

* The precise situation of the wreck of this vessel had hitherto been very vaguely marked on our charts: a careful perusal, however, of Byron's narrative, and of Agueros's account of the Missionary Voyages in 1779, sufficiently point out the place within a few miles. It is on the north side, near the west end of the easternmost of the Guaianeco islands, which we named in consequence Wager Island. At Port Santa Barbara, seventeen miles to the southward of this group, a very old worm-eaten beam of a vessel was found, which there is reason to think may be a relic of that unfortunate ship. It was of English oak, and was found thrown up above the high-water mark upon the rocks at the entrance of the port. No other vestige was detected by us;—the missionaries, however, found broken glass bottles and other evident traces of the wreck. At Chiloe I saw a man who had formed one of this enterprising party, and obtained from him a curious and interesting account of those voyages.

† Agueros, p. 205, et seq. ‡ Ibid. p. 181, et seq. ‖ Ibid. p. 237.

ing to the south-west, and probably communicating with the Fallos Channel. On the eastern shore the openings were found to be either narrow inlets or abruptly terminating sounds.

On both sides of the channel the coast is hilly, but not very high, and in many places there is much low and generally thickly wooded land. This character distinguishes the Mesier from all other channels.

The trees here are nearly of the same description as those which are found in all parts between Cape Tres Montes and the Strait of Magalhaens. Of these the most common are an evergreen beech (*Fagus betuloides*), a birch-like beech (*Fagus antarctica*), the Winter's bark (*Winterana aromatica**), and a tree with all the appearance and habit of a cypress, of which the Indians make their spears; and among others there is one, the wood of which being extremely hard and weighty, answers better than the rest for fuel: the sealers call it 'the red wood,' from its colour. From the great quantity of timber which grows here it would be naturally supposed probable that spars for masts could be easily obtained, or at least woods useful for less important purposes; but, although many trees were found that were sufficiently large at the base, they grew to no great height; and, in consequence of the moisture of the climate, and the crowded state of the forests preventing the admission of the sun's rays, the wood generally proved to be decayed in the heart; besides being very subject, even after a long seasoning, to warp and split when exposed to a dry air.

Ten miles beyond White-Kelp Cove, which is fifty miles within the entrance, the character of the Mesier Channel changes entirely; the shore on either side being formed of mountainous and precipitous ridges rising abruptly from the water. After this, at Halt Bay, twenty-three miles beyond White-Kelp Cove, the channel narrows for a considerable distance, and in three particular places is not more than four hundred yards wide. This part of the channel is called in the chart the English Narrows. It is long and intricate, with many islands strewed throughout; and preserves its tortuous and frequently narrow course to its junction with the 'Wide Channel,' in which the breadth increases to two miles and a half; and then, running thirty-four miles with a direct and unimpeded course, falls into the Concepcion Strait as above stated.

At the point where the Mesier and the Wide Channels unite, a deep sound extends to the N. N. E. for forty-six miles. It was named Sir George Eyre's Sound. An extensive glacier sloping into the sea from the summit of a range of high snowy mountains, that are visible from many parts of the Mesier Channel, terminates

* Living plants of the above trees, and other vegetable productions from the Strait of Magalhaens, were introduced into England upon the return of the expedition, and have since thriven exceedingly well.

this sound; and near the head of it several large icebergs, containing no inconsiderable blocks of granite, were found aground*.

Of the archipelago of Madre de Dios we know very little. It has probably many deep openings on its seaward face, and is fronted by islands and rocks. Its character is rocky and mountainous, and by no means agreeable. The wide and safe channel of Concepcion Strait separates it from the main land, which in this part is much intersected by deep sounds, the principal of which, the Canal of St. Andrew, extends to the base of the snowy range of the Cordillera, and there Lieutenant Skyring describes it to be 'suddenly and boldly closed by tremendous and astonishing glaciers.'

Sarmiento's 'Puerto Bueno' was found to be, as the name describes it, an excellent harbour. The depth of water all over is not more than nine fathoms, an advantage which few harbours hereabout possess: a ship is in perfect security in any part, but this is the only peculiar advantage the port offers; for wood and water are equally abundant; fish are as easily to be caught; and the steamer or racehorse duck, geese, wild ducks, and other smaller birds, are as numerous in all other places. But of any other useful productions, or good soil, the country is quite destitute: 'for if,' says Lieutenant Skyring, 'we force a passage through the woods, it is over fallen trees and moss; if we walk over open, flat ground, we find the place a swamp; and if we climb the hills, we travel over a continuous rock, generally covered by a spongy moss, and entirely destitute of soil of any description.'

Behind Hanover Island, which is separated from Madre de Dios by the Concepcion Strait, the main is very much intersected by extensive sounds trending deeply into the land, like the St. Andrew Channel, to the base of the Andes.

South of Hanover Island is Queen Adelaide's Archipelago, through which are several channels that communicate with the Strait of Magalhaens; of which the principal, Smyth's Channel, falls into the strait at Cape Tamar.

Of the whole of the outer or sea-coast, from the Guaianeco Islands to the strait, we know little, our operations having been confined to the exploration of the interior channels and sounds, the examination of which is even yet far from being complete.

In the winter of 1829, my colleague, Captain Robert Fitzroy, the commander of the Beagle, in examining the Jerome Channel,

* Near Falcon Inlet, seven miles up the eastern side of Sir George Eyre's Sound, are some large 'rookeries,' or breeding-haunts, of fur-seal. Many thousands of these animals were congregated together, which had been probably driven from the sea-coast by the activity of the seal-fishers; and perhaps, for many years, if not ages, have been breeding undisturbed in this hitherto unknown, and therefore safe and quiet recess. Two seals that were killed appeared to be of the same description as the species which frequents the sea-coasts.

which communicates with the strait in that part called Crooked Reach, discovered 'Otway Water,' a large inland sea fifty miles long, trending to the N. E., and separated from the eastern entrance of the strait by a narrow isthmus; the actual width of which was not ascertained, for in the attempt the boats were nearly lost. The south-eastern shore is high and rocky, and generally precipitous, but the northern is formed by low undulating grassy plains, free from trees, and precisely like the country about the entrance of the strait. At the north-west corner of the water, Captain Fitzroy found the mouth of a channel which carried him in a north-west direction for twelve miles, when it opened into another inland salt-water lake, about thirty-four miles long and twenty wide. This was called the Skyring Water. The southern and western sides of the Water are bounded by mountainous land, but the northern shore is low, apparently formed of undulating downs and grassy plains, and in some places watered by rivulets. At the western extremity of the water, Captain Fitzroy observed two openings, separated by a remarkable castellated mountain which he called Dynevor Castle. Beyond the southernmost opening there was no land visible, not even a distant mountain, which induced Captain Fitzroy to suppose that it was a channel communicating with the western coast; but from what we now know, it is not probable that it can lead to anything of consequence. It is perhaps backed by low marshy land reaching to the hills at the bottom of Glacier Bay, which, from the distance being seventy miles, were not visible above the horizon. The northern opening probably winds under Dynevor Castle, and perhaps very nearly reaches the bottom of Obstruction Sound. The Skyring Water was not further explored; partly from want of a sufficient quantity of provisions to undertake it with any prospect of succeeding, and partly from a strong south-westerly gale, from which there was no shelter for the open boats in which this examination was performed. The remainder, therefore, of Captain Fitzroy's time was spent in perfecting what he had commenced; and, after an absence of thirty-two days, he rejoined his ship at Port Gallant.

At the western end of the Fitzroy Channel, which unites the waters, the shore is well clothed on the north side with luxuriant grass and trefoil, with here and there a sprinkling of brushwood, but is entirely destitute of trees. The soil, although dry, is light and tolerably good; but the ground is perforated everywhere by some burrowing animal, probably skunks, or *cavias*. The tracks of horses were noticed in many places, and the bones of guanacoes were scattered about. Water was not very plentiful, but several small brooks and springs in the sides of the hills were observed, sufficient for all useful purposes.

On the south side of the channel the land is low but wooded:

the banks are from five to forty feet high, sloping to the water, and covered with grass. In the entrance the tide ran five or six knots at the neaps, but inside with only half that rapidity. On the north side, at the distance of a mile and a half, there is a ridge of hills, at the summit of which Captain Fitzroy made an excursion, which he thus describes:

'Our way led through a scattered wood, the only one I saw on 'the north bank of the channel. Most of the trees appeared to 'have been either burned or blown down by the wind, and then 'blackened by decay. We reached the foot of the hills at eleven 'o'clock, having commenced our journey at eight, and attained 'the summit at twelve o'clock, whence the view we obtained 'amply repaid us for our trouble. It is a central spot; and, 'although not more than six hundred feet above the level 'of the sea, offers as extensive a view as any spot near it. 'We could see the hills near Cape Gregory, the Sweepstakes 'Foreland, Elizabeth Island, Cape Monmouth, the high peaks 'near Cape Froward, and the range of mountains between 'it and Jerome Channel, some of the mountainous land be-'tween Capes Phillip and Parker, and the whole extent of the 'Otway and Skyring waters. The latter seemed to be bounded 'to the north-east by down-like hills, about three or four hundred 'feet high. To the north of the station extends a range of similar 'downs, and to the east a succession of lagoons completely inter-'sect the flat country between it and Peckett's Harbour. No 'opening was observed in the eastern side of Otway Water, and 'the neck of land separating it from the strait near Elizabeth 'Island, did not seem to be more than three or four miles wide.'

In consequence of the supposed communication of the Skyring Water with some part of the western coast, a careful examination was made of every opening trending into the interior behind the islands and archipelagos that line the western coast; the result of which has proved that the hypothesis so naturally formed by Captain Fitzroy was not confirmed by fact. A reference to the chart will show how carefully the search was carried on, and with what want of success it was concluded. The deep opening discovered by Sarmiento, and named by him 'Ancon sin salida,' was found upon examination to extend so far into the interior, and in the direction of the Skyring Water, that the most minute investigation of the numerous sounds and canals was made in the perfect conviction of finding the desired communication. But after a patient, laborious, and minute investigation, particularly of those openings which led to the southward, among which Obstruction Sound held the most flattering appearance, Lieutenant Skyring, who performed this service, was obliged to give up the search and return. At one part, near the south-eastern end of the sound, he

entered an opening which at first had an appearance that was favourable to the desired communication, but it terminated in low woody land. There was, however, a wooded hill near the shore, which he ascended with the hope of obtaining a view of the country; but the sides and summit of the hill were so thickly clothed as to obstruct his view, and with the exception of some distant high land in the south-east quarter, and a sheet of water about six miles off in the same bearing, nothing was discerned to repay him for the fatigue and trouble of the ascent. Whether the water is a lagoon, or a part of the Skyring Water, or whether it communicates with the opening trending round the north side of Dynevor Castle, remains yet to be ascertained.

After being foiled in this attempt, Lieutenant Skyring proceeded onward in a S.S.W. direction, and after a pull of ten miles came to the bottom of the sound. It was terminated by high precipitous land encircling every part. 'Throughout the examination of 'this sound,' he writes, 'we never distinguished any strength of 'tide, and the rise and fall never appeared to have exceeded a 'foot; that there was a slight ebb and flow was evident from the 'streams of foam which extended from the water courses, and 'also from the fallen leaves borne off the shore of the bays in long 'lines; but signs like these, I believe, will be considered indica-'tive of there being no strength of tide. I have frequently noticed 'such appearances in large ports and inlets, but never in any 'channel.' Neither wigwams, nor traces of Indians, were seen in this sound, another proof, were one required, of the sound not communicating with the Skyring Water; for the Indians very rarely visit these deep inlets, but are always to be found in narrow straits or communicating channels, where, from the strength of the tide, seals and porpoises, which constitute the principal food of the Fuegian Indians, abound. Sarmiento's name, therefore, of 'Ancon sin salida' (a cove or inlet without a thoroughfare), a name, which we had hoped to have expunged from the chart, must now remain a lasting memorial of his enterprising character, and of a voyage deservedly one of the most celebrated as well as most useful of the age in which it was performed.

The termination of Obstruction Sound is one of the most remarkable features in the geography of this part of South America.

In this examination the southern extremity of the Cordillera was ascertained. The eastern shores of the interior channels were found to be low plains, with no hills nor mountains visible in the distance, and such being the feature also of the northern shores of the Otway and Skyring Waters, it is probable that all the country to the east of the sounds is a continued *pampa* or plain.

Recent traces of Indians were seen in some places, but at the time our party was there they were either absent or had concealed

themselves. I should not think that these interior sounds are much frequented by them; a family was, however, met in the Fitzroy Channel (which separates the Otway from the Skyring), clothed with guanaco skins, like the Patagonian tribes, but in manners and disposition resembling the wandering inhabitants of the Strait and Tierra del Fuego; and they had canoes, which the Patagonians do not use. They had probably come thus far for the purpose of communicating with the latter tribes, with whom they frequently have friendly intercourse. No guanacoes were seen either on the shores of the inland waters or of the sounds within the 'Ancon sin salida,' although the country, being open and covered with luxuriant grass, was peculiarly suited to their habits; but as several large herds of deer were observed feeding near the sea shore of Obstruction Sound, and the neighbouring country, the presence of these latter animals may probably be the cause; for on the eastern coast, where the guanacoes are every where abundant, the deer do not make their appearance. Sea-otters were the only other animals that we met with, and they were only occasionally noticed swimming about the kelp. The shores of the sounds were in many places crowded with the black necked swan (*Anas nigricollis*, Linn.), and there were a few seen, but only one captured, whose plumage, excepting the tips of the wings, which were black, was of a dazzling white colour. I have described it in the first part of the Proceedings of the Zoological Society as a new species (*Cygnus anatoïdes.*)

The Strait of Magalhaens, being a transverse section of the continent, exhibits a very good view of its geological structure. The strait may be divided into three portions; the western, central, and the eastern. The western end and centre are of primitive character, rugged and very mountainous; whilst the eastern portion is of recent formation and low. The western tract is composed of a succession of stratified rocks, a difference at once distinguishable by the form and nature of the ranges and the direction of the shores; the hills are irregularly heaped together; the sounds are intricate and tortuous in their course, and the shores are formed by deep sinuosities and prominently projecting headlands: the channels, also, are studded with innumerable islands and rocks extremely dangerous for navigation. In this portion the rock is, for the most part, granite and greenstone.

Near the centre of the strait, the rock being clay-slate, the mountains are higher, and more precipitous and rugged in their outline; and consequently not easily to be ascended. They are in general three thousand feet, but some are found to be four thousand feet, in height; and one, Mount Sarmiento, is upwards of six thousand feet high, and is covered throughout the year with snow. The line of perpetual snow in the strait seems to be about

three thousand five hundred or four thousand feet above the sea; for the mountains, whose height does not exceed three thousand, are, during the summer, frequently free from any, excepting in holes, where a large quantity is accumulated by drifting, and protected from the sun. The strait here is quite free from islands, and it is a remarkable fact, that where the greenstone formation terminates there the islands cease to appear.

The slate formation continues as far as Freshwater Bay, where the stratified rocks leave the coast and extend backwards in a north-west direction. The soil then becomes apparently a mixture of decomposed slate and clay; the slate gradually disappearing on approaching to Cape Negro, where the rock partakes of the character of the east coast. Here again we observe, along with the change of geological character, the reappearance of islands, the soil of which is clayey, but with masses of granite, hornblende rock and clay slate protruding in many places through the superficial soil, which, although it yields a poor grass, is entirely destitute of trees.

In that portion of the strait to the eastward of Cape Negro the hills are remarkable for the regularity and parallelism of their direction, and their general resemblance to each other. On the north shore, near Cape Gregory, a range of hills commences suddenly, with rather a precipitous ascent, and extends for forty miles to the north-east, where it terminates in detached rocky hills. The south-western end of the range is a ridge of flat-topped land covered with soil, but with here and there a protruding mass of primitive rock: one of these appeared to be of sienite or granite. The north-eastern end of this range is perhaps more bare of soil, and, therefore, exposes the rock, which shows itself in detached hills. Precisely similar in appearance and direction is a range on the south shore, about fifty miles in length, commencing at Cape Monmouth and terminating in detached hills in the vicinity of the south side of the First Narrow. The courses, also, of both the First and Second Narrows, which are just within the eastern entrance of the strait, are nearly parallel with these hills; and the smaller ranges of eminences, Elizabeth Island and the cliffy land of Cape Negro, where the clay formation commences, all trend to the N.N.E., preserving a general resemblance of form and character to the two ranges above mentioned.

The irregularity of the topographic features of the more western portion of the strait, combined with its confused assemblage and immense number of islands and rocks—the regularity of the strata, —the coinciding parallelism of all the bays, channels, and sounds, —and the total absence of islands in the central portion or slate formation, together with the remarkable similarity of the direction of the hills and coast line and the stratification of the north-

eastern tract, which is very different from that of the centre,—are very striking facts, and, geologically considered, are of great interest.

No less remarkable, however, and equally interesting, is the character of the vegetation ; not so much in the variety of plants, as in their stunted growth to the westward, their luxuriance in the centre, and the total absence of trees to the eastward. For this modification the following reasons seem to me to account sufficiently : —to the westward the decomposition of granite, and the other primitive rocks which are found there, forms but a poor, unproductive soil ; so that, although the land is thickly covered with shrubs, they are all small and stunted : the torrents of water also that pour down the steep sides of the hills, wash away the partial accumulations of soil that are occasionally deposited ; consequently, few trees are to be found, excepting in clefts and recesses of the rock where decomposed vegetable matter collects and nourishes their growth ; but even there they are low and stunted, for the most luxuriant seldom attain a larger diameter than nine or ten inches.

From the regularity of the direction of the strata in the slate districts the vallies are very extensive, and, being bounded on either side by precipitous mountains much intersected by deep ravines, receive large streams of water, which, uniting together in their course to the sea, form no inconsiderable rivers. During the winter months these rivers become swollen and overflow their banks, and deposit a quantity of alluvium, which, blending with the fallen leaves and other putrescent substances, produces a good superficial soil, in which trees grow to a large size, and the shrubs and smaller plants become particularly luxuriant and productive.

At Port Famine, and in its neighbourhood, the evergreen beech (*Fagus betuloides*) grows in the greatest abundance, and reaches a very large size. Trees of this species, of three feet in diameter, are abundant ; of four feet there are many ; and there is one tree (perhaps the very same noticed by Commodore Byron*), which measures seven feet in diameter for seventeen feet above the roots, and then divides into three large branches, each of which is three feet through. This venerable tree seemed to be sound, but from our experience of several others that were cut down, might be expected to prove rotten in the centre. This tendency to decaying in the heart may be attributed to the coldness of the schistose sub-soil upon which the trees are rooted, as well as to the perpetual moisture of the climate above alluded to.

The slate formation ceases at Port St. Mary, but there is no decided change in the vegetation until we come to Cape Negro, where the clay commences ; and from thence onwards there is not a tree to be found. The nature of the soil is not favourable to

* Hawkesworth, Voyages, i., 38.

plants which take a deep root, and, therefore, only shrubs and grasses are found: the former are thinly scattered over the extensive plans which characterise this country; but the grasses are abundant, and although of a harsh and dry appearance, must be nourishing, for they form the chosen food of numerous and large herds of guanacoes.

Besides the evergreen beech above-mentioned, there are but few other trees in the Strait that can be considered as timber trees. Such an appellation only belongs to two other species of beech and the Winter's bark. The last, which is also an evergreen, is to be found mixed with the first, in all parts of the Strait; so that the country and hills from the height of two thousand feet above the sea, to the very verge of the high water mark, are covered with a perpetual verdure which is remarkably striking, particularly in those places where the glaciers descend into the sea; the sudden contrast in such cases presenting to the view a scene as agreeable as it seems to be anomalous. I have myself seen vegetation thriving most luxuriantly, and large woody stemmed trees of *Fuchsia* and *Veronica**, in England considered and treated as tender plants, in full flower, within a very short distance of the base of a mountain, covered for two-thirds down with snow, and with the temperature at 36°. The *Fuchsia* certainly was rarely found but in sheltered spots, but not so the *Veronica;* for the beaches of the bays on the west side of St. John's Island at Port San Antonio are lined with trees of the latter, growing even in the very wash of the sea. There is no part of the Strait more exposed to the wind than this, for it faces the reach to the west of Cape Froward, down which the wind constantly blows, and brings with it a succession of rain, sleet, or snow; and in the winter months, from April to August, the ground is covered with a layer of snow, from six inches to two or three feet in depth.

There must be, therefore, some peculiar quality in the atmosphere of this otherwise rigorous climate which favours vegetation; for if not, these comparatively delicate plants could not live and flourish through the long and severe winters of this region.

In the summer, the temperature at night was frequently as low as 29° of Fahrenheit, and yet I never noticed the following morning any blight or injury sustained by these plants, even in the slightest degree.

One circumstance, however, deserves to be mentioned, which may in some measure account for the innocuous effect of so low a temperature. I have occasionally, during the summer, been up the greater part of the night at my observatory, with the internal as well as the external thermometers as low as freezing point,

* The stems of both from six to seven inches in diameter.

without being particularly warmly clad, and yet not feeling the least cold; and in the winter, the thermometer, on similar occasions, has been at 24° and 26°, without my suffering the slightest inconvenience. This I attributed at the time to the peculiar stillness of the air, although, within a short distance in the offing and overhead, the wind was high.

Whilst upon this subject, there are two facts which may be mentioned as illustrative of the mildness of the climate, notwithstanding the lowness of the temperature. One is the comparative warmth of the sea near its surface, between which and the air, I have in the month of June, the middle of the winter season, observed a difference of 30°, upon which occasion the sea was covered with a cloud of steam. The other is, that parrots and humming-birds, generally the inhabitants of warm regions, are very numerous in the southern and western parts of the Strait—the former feeding upon the seeds of the Winter's bark, and the latter have been seen by us chirping and sipping the sweets of the *Fuchsia* and other flowers, after two or three days of constant rain, snow, and sleet, during which the thermometer has been at freezing point. We saw them also in the month of May upon the wing, during a snow shower; and they are found in all parts of the south-west and west coasts as far as Valparaiso. I have since been informed that this species is also an inhabitant of Peru; so that it has a range of more than 41° of latitude, the southern limit being 53½° south*.

Tierra del Fuego is divided into three large islands by two channels; one of which is opposite to Cape Froward, and the other fronts Port Gallant. The easternmost, Magdalen Sound, trends in a due south direction for nineteen miles, and separates the clay slate from the more crystalline rocks which seem to predominate in Clarence Island, and are chiefly of greenstone; though, at the eastern end, there is much mica slate. At the bottom of Magdalen Sound the channel turns sharply to the westward; and, after a course of about forty miles, meets the Barbara Channel, which, as abovementioned, communicates with the strait opposite to Port Gallant, and both fall into the sea together. Magdalen Sound and its continuation, Cockburn Channel, are almost quite free from islands and rocks; but the Barbara Channel, which separates the granite from the greenstone and mica slate districts, is throughout thickly strewed with islands, which reduce the

* This bird, although not rare in several English collections, had never been noticed until I forwarded it to England in the early part of the year 1827, when my friend Mr. Vigors described it in the Zoological Journal for the month of November, 1827, (vol. iii. p. 432,) under the name of *Mellisuga Kingii*. Shortly afterwards, M. Lesson published it in his Manuel d'Ornithologie, (vol. ii. p. 80,) as *Ornismya sephaniodes*, as a discovery belonging to the Coquille's voyage, in the illustrations of which it is figured at plate 31.

channel in some places to a mile, and, in one place, to not more than fifty yards in width. Here, of course, the tide sets with great strength. Several vessels, however, have passed through it under sail; and one ship, (a whaler belonging to Messrs. Enderbys,) working through the strait, and finding much difficulty in passing to the westward, bore up, and, the wind being fair and the distance to sea only fifty miles, ran through it without accident. The land to the westward of the Barbara Channel is high and rugged; and although in the vallies, ravines and sheltered nooks there is no want of vegetation, yet, in comparison with the eastern part of the strait, it has a very dismal and uninviting appearance. It was called by Sarmiento, 'Santa Ines Island'*; but Narborough called it, very appropriately, 'South Desolation, it being,' as he says, 'so desolate land to behold†.'

Clarence Island, the extent of which is fifty-two miles long and twenty-three broad, although equally rocky, is much more verdant in appearance. The uniform direction of the headlands of the north shore of this island is remarkable. Upon taking a set of angles with the theodolite placed upon the extremity of the west end of Bell Bay, opposite to Cape Holland, the most prominent points to the south-east, as far as could be seen, were all visible in the field of the telescope at the same bearing. The same thing occurred on the opposite shore of the Strait, where the projections of Cape Gallant, Cape Holland, and Cape Froward, are in the same line of bearing; so that a parallel ruler placed on the map upon the projecting points of the south shore, extended across, will also touch the headlands of the opposite coast.

The eastern island, which had been previously called, and of course retains on our charts the name of *King Charles's South Land*, extends from the entrance of the Strait to the outlet of the Barbara and Cockburn Channels, at Cape Schomberg. The northern part partakes of the geological character of the eastern portion of the Strait. The centre is a continuation of the slate formation, which is evident at a glance, from the uniformity of the direction of the shores of Admiralty Sound, the Gabriel Channel, and all the bays and mountain ranges of Dawson's Island. The south shore, or seaward coast line, is principally of greenstone, excepting the shores of the Beagle Channel, which extends from Christmas Sound to Cape San Pio, a distance of a hundred and twenty miles, with a course so direct that no points of the opposite shores cross and intercept a free view through; although its average breadth, which also is very parallel, is not more than a mile, and in some places only a third of a mile across. The south shores of Hoste and Navarin Islands are of horn-blende rock, which is also the principal component of the islands in the neighbour-

* Sarmiento, p. 180. † Narborough's Voyage, p. 78.

hood, as well as of the island itself of Cape Horn. The easteur part of King Charles's South Land is low, with plains like the Patagonian coast; but the range of high land crossing the Strait at Port Famine extends down the north side of Admiralty Sound, and, perhaps with some few interruptions, continues to the south-east extremity of the land, at Cape Good Success, which is the south cape of the west side of Strait Le Maire, and there terminates in lofty mountains covered with snow, one of which, called in the charts 'The Sugar-loaf,' is probably four thousand feet high.

The eastern shore of King Charles's South Land, towards the south part, is lofty, but near the northern part is very low. The interior is also low, with extensive plains, abounding with guanacoes, some of which were shot by the officers of the Beagle within fifty miles of Cape Horn.

In the year 1828, from the commencement of January to the middle of August, the Adventure (the ship I commanded) was at anchor at Port Famine, in the strait of Magalhaens, in latitude 53° 38¼′ south, and longitude 70° 54′ west of Greenwich; and during the whole of that time a careful meteorological journal was kept. The temperature was registered from a very good thermometer of Fahrenheit's scale, suspended within a copper cylindrical case of nine inches diameter, and perforated above and below with holes, to admit a free current of air. The cylinder was fixed to the roof of a shed, thatched with dried leaves to shelter it from the sun, while the sides were open. The barometer (a mountain barometer made by Newman, with an iron cylinder) was hung up in the observatory, five feet above the high water mark, and both instruments were examined carefully and regularly at the following hours, viz.: six and nine o'clock in the morning, at noon, and at three and six o'clock in the evening. The state of the atmosphere was observed daily, by Daniel's hygrometer, at three o'clock in the afternoon. The maximum and minimum temperatures were also observed twice in twenty-four hours, from a Six's thermometer, viz.: at nine o'clock in the morning, and at nine in the evening. From this journal the following abstract has been drawn up:—

SUMMARY OF METEOROLOGICAL OBSERVATIONS.

Table I.

Mean height of the Barometer, corrected for Neut^{l}. P^{t}. and Capill^{y}. and reduced to the temperature of 32°.

Hour.	AUTUMNAL PERIOD. Feb.	March.	April.	BRUMAL PERIOD. May.	June.	July.	12 Days of August.	MEANS. Autum.	Brumal.	Au. & Br.
	inches.	inches.	inches.	inches.	inches.	inches.	inches.	inches.	inches.	inches.
VI.	29·404	29·631	29·569	+29·322	+29·279	29·581	29·230	29·531	+29·394	29·463
IX.	+·415	+·655	+·581	·311	·277	+·584	·257	+·550	·391	+·470
XII.	·405	−·641	·574	·292	·272	·576	·308	·540	·380	·460
III.	−·399	·647	−·555	−·285	−·271	−·542	·318	−·534	−·366	−·450
VI.	·404	·657	·579	·308	·294	·571	·318	·540	·391	·465
Means	29·405	29·646	29·572	29·304	29.279	29·571	29·286	29·539	29·384	29·462

Table II.

Thermometer—Fahrenheit.

Hour.	AUTUMNAL PERIOD. Feb.	March.	April.	BRUMAL PERIOD. May.	June.	July.	12 Days of August.	MEANS. Autum.	Brumal.	Au. & Br.
	°	°	°	°	°	°	°	°	°	°
VI.	44·30	44·20	35·82	34·74	30·67	30·53	33·46	41·44	31·98	36·71
IX.	51·38	49·87	40·61	36·36	31·83	31·50	35·11	47·29	33·23	40·26
XII.	54·23	52·53	45·42	40·68	36·02	35·93	37·92	50 73	37·54	44·13
III.	54·44	52·39	44·88	39·62	34·36	34·59	36·24	50·57	36·19	43·38
VI.	51·16	47·84	39·83	35·97	31·98	32·58	33·54	46·13	33·51	39·82
Means	51·10	49·37	41·22	35·47	32·97	33·03	33·25	47·23	34·49	40·86

TABLE III.

DANIEL'S HYGROMETER, observed at 3 P.M., daily, and compared with the mean temperature.

	AUTUMNAL PERIOD.			BRUMAL PERIOD.			12 Days of	MEANS.		
	Feb.	March.	April.	May.	June.	July.	August.	Autum.	Brumal.	Au. & Br.
	°	°	°	°	°	°	°	°	°	°
Monthly mean tem. from Table II.	51·10	49·37	41·22	35·47	32·97	33·03	33·25	47·23	34·49	40·86
Temperature of dew point	41·31	40·75	34·83	34·88	30·28	29·41	30·28	38·96	31·52	35·24
Difference between mean temperat. and dew point	9·79	8·62	6·39	0·59	2·69	3·62	2·97	8·27	2·30	5·28
Dryness (the point of Saturation being 1000)	711·8	736·42	809·9	980·6	903·8	876·3	894·6	752·71	920·23	836·47
Elasticity of vapour	295·7	289·0	238·64	239·04	202·24	196·46	202·2	274·44	212·58	243·51
Weight of a cubit foot of vapour in grains	3·3441	3·2801	2·7550	2·7926	2·3731	2·3048	2·3421	3·1264	2·4902	2·8083

TABLE IV.

Months.	Pressure.			Temperature. Air.			Temperature. Water.			Dew Point, Hygrometer.		
	Max.	Min.	Range.	Max.	Min.	Range	Max.	Min.	Range	Max.	Min.	Range
	inches.	inches.	inches.	°	°	°	°	°	°	°	°	°
February	30·087	28·768	1·319	66	28	38·0	52·5	43·7	8·8	51·2	31	20·2
March	30·099	29·004	1·095	68	30·5	37·5	50·5	41·5	9·0	47	35	12
April	30·055	28·844	1·211	57·5	28	29·5	47·8	40·5	7·3	42	27	15
May	29·850	28·795	1·055	49·5	20·5	29·0	48·2	42·8	5·4	43	21	22
June	30·079	28·274	1·805	48·7	19·2	29·5	47·0	40·3	6·7	41·5	20	21·5
July	30·500	28·942	1·558	44·2	12·6	31·6	45·0	41·8	3·2	39·7	19	20·7
August 12 days	29·782	28·709	1·073	49·2	18·5	30·7	43·1	40·2	2·9	37·2	20·5	16·7

From the preceding tables it will be seen that the mean temperature for the autumnal period (the months of February, March, and April) was 47°·2; the maximum and minimum were respectively 68° and 28°. For the brumal period, the three following months, the mean temperature was 34°·5, and the maximum and minimum 49°·5 and 12°·6. During the former, or autumnal period, the barometer ranged between 30·099 and 28·768 inches, and for the latter it was between 30·5 and 28·274

inches. The range for the first being 1·331 inches, and for the last 2·226 inches.

The eastern coast of Patagonia, from the entrance of the Strait of Magalhaens to the River Plate, is comparatively low. From Cape Virgins to Port St. Julian, where porphyritic clay-stone commences, the coast is formed of clay cliffs, horizontally stratified, and the country is undulating, with extensive plains, or *pampas*, covered with grass, but without trees. At Port St. Julian the country becomes hilly, and continues so as far to the northward as latitude 44°, the rock being porphyritic. The clay formation to the southward has been likened to the appearance of the coast of Kent, and, at a short distance, it bears, certainly, a very great resemblance to it; but the cliffs, instead of being of chalk, are composed of a soft marly clay, without any gravel or impressions of organic remains, excepting at Port St. Julian, where fossil shells, both bivalves and univalves, are found imbedded in clay cliffs; and, on the surface, are lying, strewed about, large oyster shells.

In the clay formation there are three rivers; the Gallegos in latitude 51° 38′; Port Santa Cruz in latitude 50° 7′, and in 49° 12′ is Port San Julian. The first does not extend further into the interior than forty miles from the coast, and to about the same distance Port Santa Cruz penetrates; but Port San Julian is of much smaller size, and Coy Inlet, in latitude 50° 58′, can only be entered by boats. The Gallegos, at high water, may be easily entered, but, at low water, the banks are dry to a great extent; a channel however is left on its south side of sufficient depth for a small vessel: the tide rises here forty-six feet, and the stream is very strong. At Santa Cruz and Port San Julian the tides are neither so strong, nor do they rise and fall so much as at the Gallegos.

Port Desire, about thirty miles to the southward of Cape Blanco, the mouth being in 47° 45′ south latitude, has a narrow entrance with strong tides; but affords in the offing very good anchorage as well as shelter from the prevailing winds, which are off shore or westerly. The river extends up the country nearly in a due-west direction for eighteen miles, but the land is dry and parched, and very unsuitable for the establishment which the Spanish government formed there not many years since, and of which evident traces remain to this day.

St. George's Gulf, called in the old charts 'Bahia sin Fondo,' or Deep-Sea Gulf, was formerly considered to be a deep sinuosity of the coast into which a river emptied its waters after winding through a large tract of country; for, until the Descubierta and Atrevidas voyage of discovery, very vague accounts had been given of this or indeed of any other part of the coast. The Gulf, upon

that examination, was found to possess no river or creek in any part excepting on the north side, where there are several deep bays and coves which are and have been frequented by our sealing vessels. Its northern head is called Cape Two Bays; and, thirty miles to the northward, is Port St. Elena, which is the northern limit of our examination of the eastern coast. The country about is dry and parched, although thickly covered with small shrubs and a tolerable grass, on which large herds of guanacoes feed.

According to Falconer, (the Jesuit missionary who resided many years among the Indian tribes inhabiting the country about Buenos Ayres,) the eastern coast between the latitudes of 41° and 51° is frequented by the natives for the purpose only of burying the dead: they have, however, been occasionally met with travelling along the coast, apparently without any particular object in view. Near Port Desire I have seen the graves of the Indians on the summit of the hills, but the bodies had been removed, probably by the Indians themselves; for we are informed by Falconer, that, after the dead have been interred twelve months, the graves are visited by the tribe, for the purpose of collecting the bones and conveying them to their family sepulchres, where they are set up and adorned with all the beads and ornaments the friends and family of the deceased can collect for the occasion. The ceremony is performed by certain women of the tribe whose peculiar office it is to attend to these rites.

XII.—*General Remarks on the Coast of Arracan;* transmitted by Captain Laws, H.M.S. Satellite; communicated by Captain Beaufort, F.R.S. Read 13th June, 1831.

THE HARBOURS, PRODUCE OF THE COUNTRY, NATIVES, &c.

THE province of Arracan extends from the left bank of the Tiknaaf river, in latitude 20° 46′ N., and longitude 92° 20′ E., to Cape Negrais, in latitude 16° 2′ N., and longitude 94° 14′ E., and is divided from the Burman territory by the Yeomandong mountains, lying parallel to, and in some places approaching very near, the sea-coast, which is fronted by numerous islands, moderately high and thinly inhabited, the largest of which are Cheduba and Ramree, forming part of a group which were almost unknown to Europeans before the Burmese war of 1824. Amongst them are several good harbours, particularly that of Kyouk Phyoo, which takes its name from the small white pebbles that are washed on the beach during the S. W. monsoon, Kyouk Phyoo meaning 'white stones.' Akyab to the northward and Ramree to the southward are also safe harbours, and both have inland water communications with Kyouk Phyoo, as it