A Voyage To The Pacific Ocean

Undertaken, By The Command Of His Majesty, For Making Discoveries in the Northern Hemisphere. To Determine The Position and Extent of the West Side of North America; its Distance from Asia; and the Practicability of a Northern Passage to Europe. Performed Under The Direction Of Captians Cook, ...

Cook, James

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Chap. III.

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CHAP. III.

Departure from Teneriffe.—Danger of the Ship near Bonaviſta.—Iſle of Mayo.—Port Praya.—Precautions againſt the Rain and ſultry Weather in the Neighbourhood of the Equator.—Poſition of the Coaſt of Brazil.—Arrival at the Cape of Good Hope.—Tranſactions there.—Junction of the Diſcovery.—Mr. Anderſon's Journey up the Country.—Aſtronomical Obſervations.—Nautical Remarks on the Paſſage from England to the Cape, with regard to the Currents and the Variation.

HAVING completed our water, and got on board every other thing we wanted at Teneriffe, we weighed anchor on the 4th of Auguſt, and proceeded on our voyage, with a fine gale at North Eaſt. 1776. Auguſt. Sunday 4.

At nine o'clock in the evening on the 10th *, we ſaw the iſland of Bonaviſta bearing South, diſtant little more than a league; though, at this time, we thought ourſelves much farther off; but this proved a miſtake. For, after hauling to the Eaſtward till twelve o'clock, to clear the ſunken rocks that lie about a league from the South Eaſt point of the iſland, we found ourſelves, at that time, cloſe upon them, Saturday 10.

* As a proof of Captain Cook's attention, both to the diſcipline and to the health of his ſhip's company, it may be worth while to obſerve here, that it appears from his log-book, *he exerciſed them at great guns and ſmall arms, and cleared and ſmoked the ſhip below decks*, twice in the interval between the 4th and the 10th of Auguſt.

and

1776. August. and did but juſt weather the breakers. Our ſituation, for a few minutes, was very alarming. I did not chuſe to ſound, as that might have heightened the danger, without any poſſibility of leſſening it. I make the North end of the iſland of Bonaviſta to lie in the latitude of 16° 17′ North, and in the longitude of 22° 59′ Weſt.

Sunday 11. As ſoon as we were clear of the rocks, we ſteered South South Weſt, till day-break next morning, and then hauled to the Weſtward, to go between Bonaviſta and the iſle of Mayo, intending to look into Port Praya for the Diſcovery, as I had told Captain Clerke that I ſhould touch there, and did not know how ſoon he might ſail after me. At one in the afternoon, we ſaw the rocks that lie on the South Weſt ſide of Bonaviſta, bearing South Eaſt, diſtant three or four leagues.

Monday 12. Next morning, at ſix o'clock, the iſle of Mayo bore South South Eaſt, diſtant about five leagues. In this ſituation we ſounded, and found ground at ſixty fathoms. At the ſame time the variation, by the mean of ſeveral azimuths taken with three different compaſſes, was 9° 32½′ Weſt. At eleven o'clock, one extreme of Mayo bore Eaſt by North, and the other South Eaſt by South. In this poſition, two roundiſh hills appeared near its North Eaſt part; farther on, a large and higher hill; and, at about two-thirds of its length, a ſingle one that is peaked. At the diſtance we now ſaw this iſland, which was three or four miles, there was not the leaſt appearance of vegetation, nor any relief to the eye from that lifeleſs brown which prevails in countries under the Torrid Zone that are unwooded.

Here I cannot help remarking that Mr. Nichelſon, in his Preface to *Sundry Remarks and Obſervations made in a Voyage to the*

the Eaſt Indies *, tells us, that " with eight degrees Weſt va- 1776. Auguſt.
" riation, or any thing above that, you may venture to ſail
" by the Cape de Verde Iſlands night or day, being well
" aſſured, with that variation, that you are to the Eaſtward
" of them." Such an aſſertion might prove of dangerous conſequence, were there any that would implicitly truſt to it. We alſo tried the current, and found one ſetting South Weſt by Weſt, ſomething more than half a mile an hour. We had reaſon to expect this, from the differences between the longitude given by the watch and dead reckoning, which, ſince our leaving Teneriffe, amounted to one degree.

While we were amongſt theſe iſlands we had light breezes of wind, varying from the South Eaſt to Eaſt, and ſome calms. This ſhews that the Cape de Verde Iſlands are either extenſive enough to break the current of the trade wind, or that they are ſituated juſt beyond its verge, in that ſpace where the variable winds, found on getting near the line, begin. The firſt ſuppoſition, however, is the moſt probable, as Dampier † found the wind weſterly here in the month of February; at which time the trade wind is ſuppoſed to extend fartheſt towards the equinoctial. The weather was hot and ſultry, with ſome rain; and, for the moſt part, a dull whiteneſs prevailed in the ſky, that ſeems a medium between fog and clouds. In general, the tropical regions ſeldom enjoy that clear atmoſphere obſervable where variable winds blow; nor does the ſun ſhine with ſuch brightneſs. This circumſtance, however, ſeems an advantage; for otherwiſe, perhaps, the rays of the ſun, being uninterrupted, would render the heat quite unſup-

* On board his Majeſty's ſhip Elizabeth, from 1758 to 1764; by William Nicholſon, Maſter of the ſaid Ship. London, 1773.

† Dampier's Voyages, Vol. iii. p. 10.

portable.

1776. August. portable. The nights are, nevertheleſs, often clear and ſerene.

Tueſday 13. At nine o'clock in the morning of the 13th, we arrived before Port Praya, in the iſland of St. Jago, where we ſaw two Dutch Eaſt India ſhips, and a ſmall brigantine at anchor. As the Diſcovery was not there, and we had expended but little water in our paſſage from Teneriffe, I did not think proper to go in, but ſtood to the Southward. Some altitudes of the Sun were now taken, to aſcertain the true time. The longitude by the watch, deduced therefrom, was 23° 48′ Weſt; the little iſland in the bay bore Weſt North Weſt, diſtant near three miles, which will make its longitude 23° 51′. The ſame watch, on my late voyage, made the longitude to be 23° 30′ Weſt; and we obſerved the latitude to be 14° 53′ 30″ North.

Wedneſ. 14. The day after we left the Cape de Verde Iſlands, we loſt the North Eaſt trade wind; but did not get that which blows
Friday 30. from the South Eaſt till the 30th, when we were in the latitude of 2° North, and in the twenty-fifth degree of Weſt longitude.

During this interval *, the wind was moſtly in the South Weſt quarter. Sometimes it blew freſh, and in ſqualls; but for the moſt part a gentle breeze. The calms were few, and of ſhort duration. Between the latitude of 12° and of 7° North, the weather was generally dark and gloomy,

* On the 18th, I ſunk a bucket with a thermometer ſeventy fathoms below the ſurface of the ſea, where it remained two minutes; and it took three minutes more to haul it up. The mercury in the thermometer was at 66, which before, in the air, ſtood at 78, and in the ſurface of the ſea at 79. The water which came up in the bucket contained, by Mr. Cavendiſh's table, $\frac{1}{35}$, 7 part ſalt; and that at the ſurface of the ſea $\frac{1}{29}$, 4. As this laſt was taken up after a ſmart ſhower of rain, it might be lighter on that account. *Captain Cook's log-book.*

with frequent rains, which enabled us to ſave as much water as filled moſt of our empty caſks. 1776. Auguſt.

Theſe rains, and the cloſe ſultry weather accompanying them, too often bring on ſickneſs in this paſſage. Every bad conſequence, at leaſt, is to be apprehended from them; and commanders of ſhips cannot be too much upon their guard, by purifying the air between decks with fires and ſmoke, and by obliging the people to dry their clothes at every opportunity. Theſe precautions were conſtantly obſerved on board the Reſolution * and Diſcovery; and we certainly profited by them, for we had now fewer ſick than on either of my former voyages. We had, however, the mortification to find our ſhip exceedingly leaky in all her upper works. The hot and ſultry weather we had juſt paſſed through, had opened her ſeams, which had been badly caulked at firſt, ſo wide, that they admitted the rain water through as it fell. There was hardly a man that could lie dry in his bed; and the officers in the gun-room were all driven out of their cabbins, by the water that came through the ſides. The ſails in the ſail-room got wet; and before we had weather to dry them, many of them were much damaged, and a great expence of canvas and of time became neceſſary to make them in ſome degree ſerviceable. Having experienced the ſame defect in our ſail-rooms on my late voyage, it had been repreſented to the yard officers, who undertook to remove it. But it did not appear to me that any thing had been done to remedy the complaint.

* The particulars are mentioned in his log-book. On the 14th of Auguſt, a fire was made in the well, to air the ſhip below. On the 15th, the ſpare ſails were aired upon deck, and a fire made to air the ſail-room. On the 17th, cleaned and ſmoked betwixt decks, and the bread-room aired with fires. On the 21ſt, cleaned and ſmoked betwixt decks; and on the 22d, the men's bedding was ſpread on deck to air.

1776. August. To repair theſe defects the caulkers were ſet to work, as ſoon as we got into fair ſettled weather, to caulk the decks and inſide weather-works of the ſhip; for I would not truſt them over the ſides while we were at ſea.

September. Sunday 1. On the firſt of September * we croſſed the Equator, in the longitude of 27° 38′ Weſt, with a fine gale at South Eaſt by South; and notwithſtanding my apprehenſions of falling in with the coaſt of Brazil in ſtretching to the South Weſt, I kept the ſhip a full point from the wind. However, I found my fears were ill-grounded; for on drawing near that coaſt, we met with the wind more and more eaſterly; ſo that, by the time we were in the latitude of 10° South, we could make a South Eaſterly courſe good.

Sunday 8. On the 8th, we were in the latitude of 8° 57′ South; which is a little to the Southward of Cape St. Auguſtine, on the coaſt of Braſil. Our longitude, deduced from a very great number of lunar obſervations, was 34° 16′ Weſt; and by the

* The afternoon, as appears from Mr. Anderſon's Journal, was ſpent in performing the old and ridiculous ceremony of ducking thoſe who had not croſſed the Equator before. Though Captain Cook did not ſuppreſs the cuſtom, he thought it too trifling to deſerve the leaſt mention of it in his Journal, or even in his log-book. Pernetty, the Writer of Bougainville's Voyage to the Falkland Iſlands, in 1763 and 1764, thought differently; for his account of the celebration of this childiſh feſtival on board his ſhip, is extended through ſeventeen pages, and makes the ſubject of an entire chapter, under the title of *Baptême de la Ligne*.

It may be worth while to tranſcribe his introduction to the deſcription of it. "Ce'ſt "un uſage qui ne remonte pas plus haut que ce voyage célébre de Gama, qui a fourni "au Camoens le ſujet de la Luſiade. L'Idée qu'on ne ſçauroit être un bon marin, "ſans avoir traverſé l'Equateur, l'ennui inſéparable d'une longue navigation, un cer- "tain eſprit republicain qui regne dans toutes les petites ſocietés, peut-être toutes ces "cauſes reunies, on pu donner naiſſance à ces eſpeces de ſaturnales. Quoiqu'il en ſoit, "elles furent adoptées, en un inſtant, dans toutes les nations, & les hommes les plus "eclairés furent obligés de ſe ſoumettre à une coutume dont ils reconnoiſſoient l'ab- "ſurdité. Car, partout, dès que le peuple parle, it faut que le ſage ſe mette à l'uniſon." *Hiſtoire d'un Voyage aux Iſles Malouines*, p. 107, 108.

watch,

watch, 34° 47′. The former is 1° 43′, and the latter 2° 14′ more Weſterly than the iſland of Fernando de Noronha, the ſituation of which was pretty well determined during my late voyage *. Hence I concluded that we could not now be farther from the continent than twenty or thirty leagues at moſt; and perhaps not much leſs, as we neither had ſoundings, nor any other ſigns of land. Dr. Halley, however, in his voyage, publiſhed by Mr. Dalrymple, tells us †, that *he made no more than one hundred and two miles, meridian diſtance, from the iſland* [Fernando de Noronha] *to the coaſt of Braſil*; and ſeems to think that *currents could not be the whole cauſe* of his making ſo little. But I rather think that he was miſtaken, and that the currents had hurried him far to the Weſtward of his intended courſe. This was, in ſome meaſure, confirmed by our own obſervations; for we had found, during three or four days preceding the 8th, that the currents ſet to the Weſtward; and, during the laſt twenty-four hours, it had ſet ſtrong to the Northward, as we experienced a difference of twenty-nine miles between our obſerved latitude and that by dead reckoning. Upon the whole, till ſome better aſtronomical obſervations are made on ſhore on the Eaſtern coaſt of Braſil, I ſhall conclude that its longitude is thirty-five degrees and a half, or thirty-ſix degrees Weſt, at moſt. 1776. September.

We proceeded on our voyage, without meeting with any thing of note, till the 6th of October. Being then in the latitude of 35° 15′ South, longitude 7° 45′ Weſt, we met with light airs and calms by turns, for three days ſucceſſively. We had, for ſome days before, ſeen albatroſſes, pintadoes, and other petrels; and here we ſaw three penguins, which October. Sunday 6.

* See Cook's Voyage, Vol. II. p. 278. † P. 11.

 occaſioned

1776. October. occaſioned us to ſound; but we found no ground with a line of one hundred and fifty fathoms. We put a boat in the water, and ſhot a few birds; one of which was a black petrel, about the ſize of a crow, and, except as to the bill and feet, very like one. It had a few white feathers under the throat; and the under-ſide of the quill-feathers were of an aſh-colour. All the other feathers were jet black, as alſo the bill and legs.

Tueſday 8. On the 8th, in the evening, one of thoſe birds which ſailors call noddies, ſettled on our rigging, and was caught. It was ſomething larger than an Engliſh black-bird, and nearly as black, except the upper part of the head, which was white, looking as if it were powdered; the whiteſt feathers growing out from the baſe of the upper bill, from which they gradually aſſumed a darker colour, to about the middle of the upper part of the neck, where the white ſhade was loſt in the black, without being divided by any line. It was web-footed; had black legs and a black bill, which was long, and not unlike that of a curlew. It is ſaid theſe birds never fly far from land. We knew of none nearer the ſtation we were in, than Gough's or Richmond Iſland, from which our diſtance could not be leſs than one hundred leagues. But it muſt be obſerved that the Atlantic Ocean, to the Southward of this latitude, has been but little frequented; ſo that there may be more iſlands there than we are acquainted with.

We frequently, in the night, ſaw thoſe luminous marine animals mentioned and deſcribed in my firſt voyage *. Some of them ſeemed to be conſiderably larger than any I

* See Hawkeſworth's Collection of Voyages, Vol. II. p. 15.

had

had before met with; and ſometimes they were ſo numerous, that hundreds were viſible at the ſame moment. 1776. October.

This calm weather was ſucceeded by a freſh gale from the North Weſt, which laſted two days. Then we had again variable light airs for about twenty-four hours; when the North Weſt wind returned, and blew with ſuch ſtrength, that on the 17th we had ſight of the Cape of Good Hope; Thurſday 17. and the next day anchored in Table Bay, in four fathoms Friday 18. water, with the church bearing South Weſt ¼ South, and Green Point North Weſt ¼ Weſt.

As ſoon as we had received the uſual viſit from the Maſter Attendant and the Surgeon, I ſent an officer to wait on Baron Plettenberg, the Governor; and, on his return, ſaluted the garriſon with thirteen guns, which compliment was returned with the ſame number.

We found in the bay two French Eaſt India Ships; the one outward, and the other homeward bound. And two or three days before our arrival, another homeward bound ſhip of the ſame nation had parted from her cable, and been driven on ſhore at the head of the bay, where ſhe was loſt. The crew were ſaved; but the greateſt part of the cargo ſhared the ſame fate with the ſhip, or (which amounted to the ſame) was plundered and ſtolen by the inhabitants, either out of the ſhip, or as it was driven or carried on ſhore. This is the account the French officers gave to me; and the Dutch themſelves could not deny the fact. But, by way of excuſing themſelves from being guilty of a crime diſgraceful to every civilized ſtate, they endeavoured to lay the whole blame on the French Captain, for not applying in time for a guard.

As

1776. October. As ſoon as we had ſaluted, I went on ſhore, accompanied by ſome of my officers, and waited on the Governor, the Lieutenant Governor, the Fiſcal, and the Commander of the troops. Theſe gentlemen received me with the greateſt civility; and the Governor, in particular, promiſed me every aſſiſtance that the place afforded. At the ſame time I obtained his leave to ſet up our obſervatory on any ſpot I ſhould think moſt convenient; to pitch tents for the ſailmakers and coopers; and to bring the cattle on ſhore, to graze near our encampment. Before I returned on board, I ordered ſoft bread, freſh meat, and greens, to be provided, every day, for the ſhip's company.

Tueſday 22. On the 22d, we ſet up the tents and obſervatory, and began to ſend the ſeveral articles out of the ſhip which I wanted on ſhore. This could not be done ſooner, as the militia of the place were exerciſing on, or near, the ground which we were to occupy.

Wedneſ. 23. The next day, we began to obſerve equal altitudes of the Sun, in order to aſcertain the rate of the watch, or, which is the ſame thing, to find whether it had altered its rate. Theſe obſervations were continued every day, whenever the weather would permit, till the time of our departure drew near. But before this, the caulkers had been ſet to work to caulk the ſhip; and I had concerted meaſures with Meſſrs. Brandt and Chiron, for ſupplying both ſhips with ſuch proviſions as I ſhould want. Bakers, likewiſe, had been ordered, immediately after our arrival, to bake ſuch a quantity of bread as I thought would be requiſite. As faſt as the ſeveral articles deſtined for the Reſolution were got ready, they were carried on board.

On the 26th, the French ſhip ſailed for Europe, and by her, we ſent letters to England. The next day, the Hampſhire Eaſt India ſhip, from Bencoolen, anchored in the bay, and ſaluted us with thirteen guns, which we returned with eleven. 1776. October. Saturday 26. Sunday 27.

Nothing remarkable happened till the evening of the 31ſt, when it came on to blow exceſſively hard at South Eaſt, and continued for three days; during which time there was no communication between the ſhip and the ſhore. The Reſolution was the only ſhip in the bay that rode out the gale without dragging her anchors. We felt its effects as ſenſibly on ſhore. Our tents and obſervatory were torn to pieces; and our aſtronomical quadrant narrowly eſcaped irreparable damage. On the 3d of November the ſtorm ceaſed, and the next day we reſumed our different employments. Thurſday 31. November. Sunday 3.

On the 6th, the Hampſhire India ſhip ſailed for England. In her I ſent home an invalid, whom Captain Trimble was ſo obliging as to receive on board. I was afterwards ſorry that I had not availed myſelf of this opportunity to part with two or three more of my crew, who were troubled with different complaints; but, at this time, there was ſome hope of their health being re-eſtabliſhed. Wedneſ. 6.

In the morning of the 10th, the Diſcovery arrived in the bay. Captain Clerke informed me that he had ſailed from Plymouth on the 1ſt of Auguſt, and ſhould have been with us here a week ſooner, if the late gale of wind had not blown him off the coaſt. Upon the whole, he was ſeven days longer in his paſſage from England than we had been. He had the misfortune to loſe one of his marines, by falling over-board; but there had been no other mortality amongſt his people, and they now arrived well and healthy. Sunday 10.

Captain

1776. November. Monday 11. Captain Clerke having repreſented to me that his ſhip was in want of caulking; that no time might be loſt in repairing this defect, next day I ſent all my workmen on board her, having already completed this ſervice on board the Reſolution. I lent every other aſſiſtance to the Captain to expedite his ſupply of proviſions and water, having given him an order to receive on board as much of both articles as he could conveniently ſtow. I now found that the bakers had failed in baking the bread I had ordered for the Diſcovery. They pretended a want of flour; but the truth was, they were doubtful of her coming, and did not care to begin, till they ſaw her at anchor in the bay.

I have before made mention of our getting our cattle on ſhore. The bull and two cows, with their calves, were ſent to graze along with ſome other cattle; but I was adviſed to keep our ſheep, ſixteen in number, cloſe to our tents, where they were penned up every night. During the night preceding the 14th, ſome dogs having got in amongſt them, forced them out of the pen, killing four, and diſperſing the reſt. Six of them were recovered the next day; but the two rams, and two of the fineſt ewes in the whole flock, were amongſt thoſe miſſing. Baron Plettenberg being now in the country, I applied to the Lieutenant Governor, Mr. Hemmy, and to the Fiſcal. Both theſe Gentlemen promiſed to uſe their endeavours for the recovery of the loſt ſheep. The Dutch, we know, boaſt that the police at the Cape is ſo carefully executed, that it is hardly poſſible for a ſlave, with all his cunning and knowledge of the country, to effectuate his eſcape. Yet my ſheep evaded all the vigilance of the Fiſcal's officers and people. However, after much trouble and expence, by employing ſome of the meaneſt and loweſt ſcoundrels in the place (who, to uſe the phraſe of the perſon who

Thurſday 14.

recommended this method to me, would, for a ducatoon, cut their maſter's throat, burn the houſe over his head, and bury him and the whole family in the aſhes), I recovered them all but the two ewes. Of theſe I never could hear the leaſt tidings; and I gave over all enquiry after them, when I was told, that ſince I had got the two rams, I might think myſelf very well off. One of theſe, however, was ſo much hurt by the dogs, that there was reaſon to believe he would never recover. 1776. November.

Mr. Hemmy very obligingly offered to make up this loſs, by giving me a Spaniſh ram, out of ſome that he had ſent for from Liſbon. But I declined the offer, under a perſuaſion that it would anſwer my purpoſe full as well, to take with me ſome of the Cape rams: the event proved, that I was under a miſtake. This Gentleman has taken ſome pains to introduce European ſheep at the Cape; but his endeavours, as he told me, have been fruſtrated by the obſtinacy of the country people, who hold their own breed in greater eſtimation, on account of their large tails, of the fat of which they ſometimes make more money than of the whole carcaſs beſides *; and think that the wool of European ſheep will, by no means, make up for their deficiency in this reſpect. Indeed, I have heard ſome ſenſible men here make the ſame obſervation. And there ſeems to be foundation for it. For, admitting that European ſheep were

* "The moſt remarkable thing in the Cape ſheep, is the length and thickneſs of their tails, which weigh from fifteen to twenty pounds. The fat is not ſo tallowiſh as that of European mutton, and the poorer ſort uſe it for butter." *Kolben's Cape of Good Hope* [Engliſh tranſlation], Vol. II. p. 65. De la Caille, who finds every thing wrong in Kolben, ſays, the weight of the tails of the Cape ſheep is not above five or ſix pounds. *Voyage de la Caille*, p. 343. If the information given to Captain Cook may be depended upon, it will prove that, in this inſtance at leaſt, Kolben is unjuſtly accuſed of exaggeration.

1775. November. to produce wool of the ſame quality here as in Europe, which experience has ſhewn not to be the caſe, the Dutch have not hands, at the Cape of Good Hope, to ſpare for the manufacturing even their own clothing. It is certain that, were it not for the continual importation of ſlaves, this ſettlement would be thinner of people than any other inhabited part of the world.

While the ſhips were getting ready for the proſecution of our voyage, ſome of our officers made an excurſion to take a view of the neighbouring country. Mr. Anderſon, my Surgeon, who was one of the party, gave me the following relation of their proceedings *:

Saturday 16. "On the 16th, in the forenoon, I ſet out in a waggon, with five more, to take a view of ſome part of the country. We croſſed the large plain that lies to the Eaſtward of the town, which is entirely a white ſand, like that commonly found on beaches, and produces only heath, and other ſmall plants of various ſorts. At five in the afternoon we paſſed a large farm-houſe, with ſome corn-fields, and pretty conſiderable vineyards, ſituated beyond the plain, near the foot of ſome low hills, where the ſoil becomes worth cultivating. Between ſix and ſeven we arrived at Stellenboſh, the colony next to that of the Cape for its importance.

The village does not conſiſt of more than thirty houſes, and ſtands at the foot of the range of lofty mountains,

* In the Philoſophical Tranſactions, Vol. lxvi. p. 268 to 319, is an *Account of Three Journies from the Cape Town into the Southern Parts of Africa*, in 1772, 1773, and 1774; by Mr. Francis Maſſon, who had been ſent from England for the diſcovery of new plants, towards the improvement of the Royal Botanical Garden at Kew. Much curious information is contained in Mr. Maſſon's account of theſe journies. M. de Pagés, who was at the Cape in 1773, gives ſome remarks on the ſtate of that ſettlement, and alſo the particulars of his journey from Falſe Bay to the Cape Town. *Voyage vers le Pole du Sud*, p. 17 to 32.

above

above twenty miles to the Eaſtward of the Cape Town. The houſes are neat; and, with the advantage of a rivulet which runs near, and the ſhelter of ſome large oaks, planted at its firſt ſettling, forms what may be called a rural proſpect in this deſert country. There are ſome vineyards and orchards about the place, which, from their thriving appearance, ſeem to indicate an excellent ſoil; though, perhaps, they owe much to climate, as the air here has an uncommon ſerenity. 1776. November.

I employed the next day in ſearching for plants and inſects about Stellenboſh, but had little ſucceſs. Few plants are in flower here at this ſeaſon, and inſects but ſcarce. I examined the ſoil in ſeveral places, and found it to conſiſt of yellowiſh clay, mixed with a good deal of ſand. The ſides of the low hills, which appear brown, ſeem to be conſtituted of a ſort of ſtone marle. Sunday 17.

We left Stellenboſh next morning, and ſoon arrived at the houſe we had paſſed on Saturday; the owner of which, Mr. Cloeder, had ſent us an invitation, the evening before, to viſit him. This Gentleman entertained us with the greateſt hoſpitality, and in a manner very different from what we expected. He received us with muſic; and a band alſo played while we were at dinner; which, conſidering the ſituation of the place, might be reckoned elegant. He ſhewed us his wine-cellars, his orchards, and vineyards; all which, I muſt own, inſpired me with a wiſh to know in what manner theſe induſtrious people could create ſuch plenty, in a ſpot where, I believe, no other European nation would have attempted to ſettle. Monday 18.

In the afternoon we croſſed the country, and paſſed a few plantations, one of which ſeemed very conſiderable, and was

1776. November. laid out in a taſte ſomewhat different from any other we ſaw. In the evening we arrived at a farm-houſe, which is the firſt in the cultivated tract called the *Pearl*. We had, at the ſame time, a view of Drakenſtein, the third colony of this country, which lies along by the foot of the lofty hills already mentioned, and contains ſeveral farms or plantations, not very extenſive.

Tueſday 19. I went, on the 19th in the forenoon, in queſt of plants and inſects, which I found almoſt as ſcarce as at Stellenboſh; but I met with more ſhrubs or ſmall trees, naturally produced, in the valleys, than in any part of the country I had hitherto ſeen.

In the afternoon, we went to ſee a ſtone of a remarkable ſize, called by the inhabitants the Tower of Babylon, or the Pearl Diamond *. It lies, or ſtands, upon the top of ſome low hills, at the foot of which our farm-houſe was ſituated; and though the road to it is neither very ſteep nor rugged, we were above an hour and a half in walking to it. It is of an oblong ſhape, rounded on the top, and lies nearly South and North. The Eaſt and Weſt ſides are ſteep, and al-

* In the Philoſophical Tranſactions, Vol. lxviii. Part I. p. 102. we have a Letter from Mr. Anderſon to Sir John Pringle, deſcribing this remarkable ſtone. The account ſent home from the Cape, and read before the Royal Society, is much the ſame with that now publiſhed, but rather fuller. In particular, he tells Sir John, that he went to ſee it *at Mr. Maſſon's deſire*, who, probably, had not had an opportunity of ſufficiently examining it himſelf. In the account of his journies, above referred to, p. 270, he only ſays, "*there are two large ſolid rocks on the Perel Berg, each of which (he believes) is more than a mile in circumference at the baſe, and upwards of two hundred feet high. Their ſurfaces are nearly ſmooth, without chink or fiſſures; and they are found to be a ſpecies of granite, different from that which compoſes the neighbouring mountains.*"

Mr. Anderſon having, with his Letter to Sir John Pringle, alſo ſent home a ſpecimen of the rock, it was examined by Sir William Hamilton, whoſe opinion is, that "*this ſingular, immenſe fragment of granite, moſt probably has been raiſed by a volcanic exploſion, or ſome ſuch cauſe.*" See his Letter to Sir John Pringle, annexed to Mr. Anderſon's, in the Philoſophical Tranſactions.

moſt perpendicular. The South end is likewiſe ſteep, and its greateſt height is there; from whence it declines gently to the North part, by which we aſcended to its top, and had an extenſive view of the whole country. 1776. November.

Its circumference, I think, muſt be at leaſt half a mile; as it took us above half an hour to walk round it, including every allowance for the bad road, and ſtopping a little. At its higheſt part, which is the South end, comparing it with a known object, it ſeems to equal the dome of St. Paul's church. It is one uninterrupted maſs or ſtone, if we except ſome fiſſures, or rather impreſſions, not above three or four feet deep, and a vein which runs acroſs near its North end. It is of that ſort of ſtone called, by Mineralogiſts, *Saxum conglutinatum*, and conſiſts chiefly of pieces of coarſe *quartz* and *glimmer*, held together by a clayey cement. But the vein which croſſes it, though of the ſame materials, is much compacter. This vein is not above a foot broad or thick; and its ſurface is cut into little ſquares or oblongs, diſpoſed obliquely, which makes it look like the remains of ſome artificial work. But I could not obſerve whether it penetrated far into the large rock, or was only ſuperficial. In deſcending, we found at its foot a very rich black mould; and on the ſides of the hills, ſome trees of a conſiderable ſize, natives of the place, which are a ſpecies of *olea* *.

In

* It is ſtrange that neither Kolben nor de la Caille ſhould have thought the *Tower of Babylon* worthy of a particular deſcription. The former [Vol. II. p. 52, 53, Engliſh Tranſlation] only mentions it as a *high mountain*. The latter contents himſelf with telling us, that it is a very low hillock, *un très bas monticule*. *Voyage de la Caille*, p. 341. We are much obliged to Mr. Anderſon for his very accurate account of this remarkable rock, which agrees with Mr. Sonnerat's, who was at the Cape of Good Hope ſo late as 1781. His words are, "La Montagne de la *Perle*, merite d'être obſervée. C'eſt unedes plus hautes des environs du Cap. Elle n'eſt compoſée que d'un

1776. November. Wedneſ. 20. In the morning on the 20th, we ſet out from the *Pearl*; and going a different road from that by which we came, paſſed through a country wholly uncultivated, till we got to the *Tyger* hills, when ſome tolerable corn-fields appeared. At noon, we ſtopped in a hollow for refreſhment; but, in walking about here, were plagued with a vaſt number of muſquitoes or ſand flies, which were the firſt I ſaw in the country. In the afternoon we ſet out again, and in the evening arrived at the Cape Town, tired with the jolting waggon."

Saturday 23. On the 23d, we got on board the obſervatory, clock, &c. By a mean of the ſeveral reſults of the equal altitudes of the Sun, taken with the aſtronomical quadrant, the aſtronomical clock was found to loſe on ſidereal time, $1'\ 8'',368$ each day. The pendulum was kept at the ſame length as at Greenwich, where the daily loſs of the clock on ſidereal time, was $4''$.

The watch, by the mean of the reſults of fifteen days obſervations, was found to be loſing $2'',261$, on mean time, each day; which is $1'',052$ more than at Greenwich: and on the 21ſt, at noon, ſhe was too ſlow for mean time by $1^h.\ 20'\ 57'',66$. From this, $6'\ 48'',956$, is to be ſubſtracted, for what ſhe was too ſlow on the 11th of June at Greenwich, and her daily rate ſince; and the remainder, *viz.* $1^h.\ 14'.\ 08'',704$, or $18°\ 32'\ 10''$, will be the longitude of the Cape Town by the watch. Its true longitude, as found by Meſſrs. Maſon and Dixon, is

" d'un ſeul bloc de granit crevaſſé dans pluſieurs endroits." *Voyage aux Indes*, Tom. II. p. 91.

Mr. Sonnerat tells us, that Mr. Gordon, Commander of the troops at the Cape, had lately made three journies up the country, from which, when he publiſhes his Journal, we may expect much curious information.

8 18°

1776. November.

18° 23′ 15″. As our obſervations were made about half a mile to the Eaſt of theirs, the error of the watch, in longitude, is no more than 8′ 25″. Hence we have reaſon to conclude, that ſhe had gone well all the way from England, and that the longitude, thus given, may be nearer the truth than any other.

If this be admitted, it will, in a great meaſure, enable me to find the direction and ſtrength of the currents we met with on this paſſage from England. For, by comparing the latitude and longitude by dead reckoning, with thoſe by obſervation and the watch, we ſhall, from time to time, have, very accurately, the error of the ſhip's reckoning, be the cauſe what it will. But as all imaginable care was taken in heaving and keeping the log, and every neceſſary allowance made for lee-way, heave of the ſea, and other ſuch circumſtances, I cannot attribute thoſe errors that did happen, to any other cauſe but currents; but more particularly when the error was conſtantly the ſame way, for ſeveral days ſucceſſively.

On the contrary, if we find the ſhip a-head of the reckoning on one day, and a-ſtern of it on another, we have reaſon to believe that ſuch errors are owing to accidental cauſes, and not to currents. This ſeems to have been the caſe in our paſſage between England and Teneriffe. But, from the time of our leaving that iſland, till the 15th of Auguſt, being then in the latitude of 12° North, and longitude 24° Weſt, the ſhip was carried 1° 20′ of longitude to the Weſtward of her reckoning. At this ſtation, the currents took a contrary direction, and ſet to Eaſt South Eaſt, at the rate of twelve or fourteen miles a day, or twenty-four hours, till we arrived into the latitude of 5° North, and longitude of 20° Weſt; which was our moſt Eaſterly ſituation

1776. November. tion after leaving the Cape de Verde Iſlands, till we got to the Southward. For in this ſituation the wind came Southerly, and we tacked and ſtretched to the Weſtward; and, for two or three days, could not find that our reckoning was affected by any current. So that, I judged, we were between the current that generally, if not conſtantly, ſets to the Eaſt upon the coaſt of Guinea, and that which ſets to the Weſt towards the coaſt of Braſil.

This Weſterly current was not conſiderable till we got into 2° North, and 25° Weſt. From this ſtation, to 3° South and 30° Weſt, the ſhip, in the ſpace of four days, was carried one hundred and fifteen miles in the direction of South Weſt by Weſt, beyond her reckoning; an error by far too great to have any other cauſe but a ſtrong current running in the ſame direction. Nor did its ſtrength abate here; but its courſe was, afterward, more Weſterly, and to the North of Weſt; and off Cape Auguſtine, North, as I have already mentioned. But this Northerly current did not exiſt at twenty or thirty leagues to the Southward of that Cape; nor any other, that I could perceive, in the remaining part of the paſſage. The little difference we afterward found between the reckoning and obſervations, might very well happen without the aſſiſtance of currents; as will appear by the Table of Days Works.

In the account of my laſt voyage *, I remarked, that the currents one meets with in this paſſage generally balance each other. It happened ſo then; becauſe we croſſed the line about 20° more to the Eaſtward than we did now; ſo that we were, of conſequence, longer under the influence of the Eaſterly current, which made up for the Weſterly one.

* Captain Cook's Voyage, Vol. I. p. 14.

And

And this, I apprehend, will generally be the caſe, if you croſs the line 10° or 15° to the Eaſt of the meridian of St. Jago. 1776. November.

From theſe remarks I ſhall draw the following concluſion, That, after paſſing the Cape de Verde Iſland, if you do not make above 4° or 5° Eaſting, and croſs the line in, or to the Weſtward of, the meridian of St. Jago, you may expect to find your ſhip 3° or 4° to the Weſtward of her reckoning, by the time you get into the latitude of 10° South. If, on the other hand, you keep well to the Eaſt, and croſs the line 15° or 20° to the Eaſt of St. Jago, you will be then as much to the Eaſt of your reckoning; and the more you keep to the Eaſtward, the greater will be your error; as has been experienced by ſome India ſhips, whoſe people have found themſelves cloſe upon the coaſt of Angola, when they thought its diſtance was above two hundred leagues..

During the whole of our paſſage from England, no opportunity was omitted of obſerving, with all the attention and accuracy that circumſtances would permit, the variation of the compaſs, which I have inſerted in a Table, with the latitude and longitude of the ſhip at the time of obſervation. As the longitude may be depended upon, to a quarter or half a degree at moſt, this Table will be of uſe to thoſe navigators who correct their reckoning by the variation. It will alſo enable Mr. Dun to correct his new Variation Chart, a thing very much wanted.

It ſeems ſtrange to me, that the advocates for the variation ſhould not agree amongſt themſelves. We find one * of them telling us, as I have already obſerved, *that with 8° Weſt variation, or any thing above that, you may venture to ſail by the*

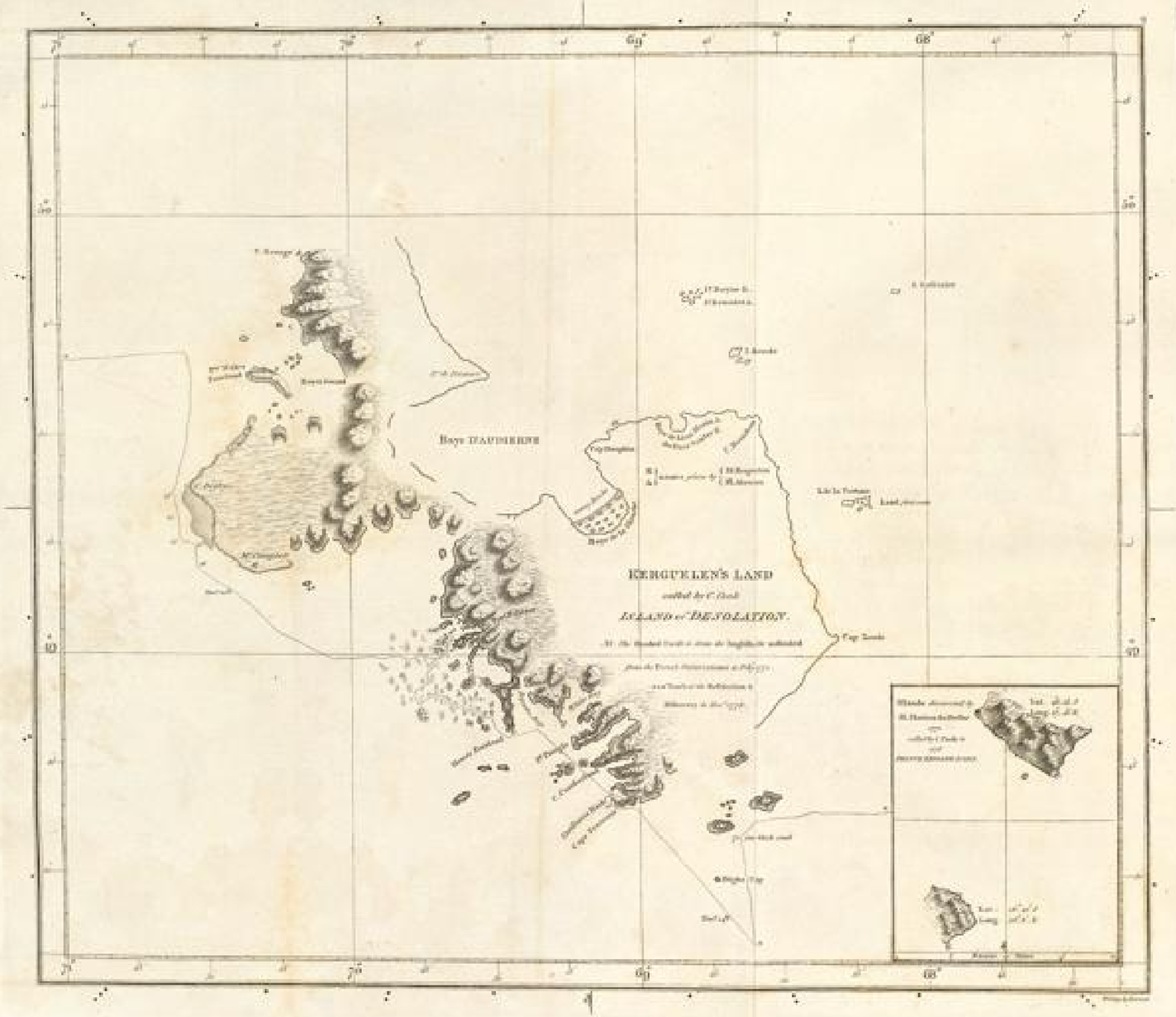
* Nicholſon.

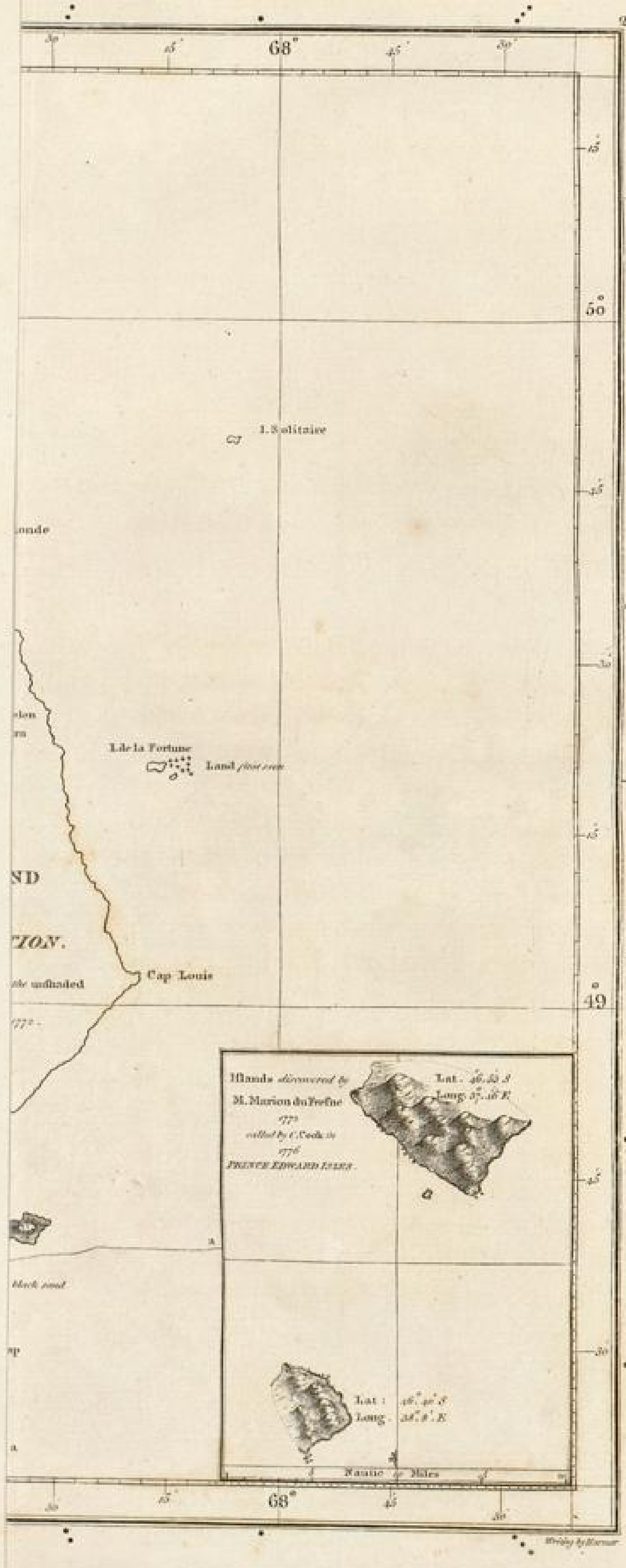
1776. November. *Cape de Verde Iſlands, by night or day, being well aſſured, with that variation, that you are to the Eaſtward of them.* Another, in his Chart *, lays down this variation ninety leagues to the Weſtward of them. Such a diſagreement as this, is a ſtrong proof of the uncertainty of both. However, I have no doubt, the former found here, as well as in other places, the variation he mentions. But he ſhould have conſidered, that at ſea, nay even on land, the reſults of the moſt accurate obſervations will not always be the ſame. Different compaſſes will give different variations; and even the ſame compaſs will differ from itſelf two degrees, without our being able to diſcover, much leſs to remove, the cauſe.

Whoever imagines he can find the variation within a degree, will very often ſee himſelf much deceived. For, beſides the imperfection which may be in the conſtruction of the inſtrument, or in the power of the needle, it is certain that the motion of the ſhip, or attraction of the iron-work, or ſome other cauſe not yet diſcovered, will frequently occaſion far greater errors than this. That the variation may be found, with a ſhare of accuracy more than ſufficient to determine the ſhip's courſe, is allowed; but that it can be found ſo exactly as to fix the longitude within a degree, or ſixty miles, I abſolutely deny.

* Mr. Dun.

CHAP.




68°
50°
I. Solitaire
Lile la Fortune
Land first seen
Cap Louis
the unshaded
49°
Islands discovered by
M. Marion du Fresne
1772
called by C. Cook in
1776
PRINCE EDWARD ISLES.
Nautic Miles
black sand