VOYAGE
IN SEARCH OF
LA PÉROUSE.
PERFORMED BY ORDER OF
THE CONSTITUENT ASSEMBLY,
DURING THE
YEARS 1791, 1792, 1793, AND 1794,
AND DRAWN UP
BY M. LABILLARDIERE,
CORRESPONDENT OF THE ACADEMY OF SCIENCES AT
PARIS, MEMBER OF THE SOCIETY OF NATURAL
HISTORY, AND ONE OF THE NATURALISTS
ATTACHED TO THE EXPEDITION.

TRANSLATED FROM THE FRENCH.

ILLUSTRATED WITH FORTY-SIX PLATES.

IN TWO VOLUMES.
VOL. I.

London:
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1800.
TO

ROBERT PEEL, ESQ.

Member of Parliament for the Borough of Tamworth, &c. &c. &c.

Who, by his Ingenuity, Abilities, and Industry, has honourably acquired a princely Fortune, and in so doing had the Satisfaction of keeping several thousand Persons in constant Employment:

Who, in the Time of Danger and National Difficulty, handsomely appropriated the munificent Sum of TEN THOUSAND POUNDS,

TO THE EXIGENCIES OF HIS COUNTRY:

And whose Conduct,

In promoting AN UNION WITH IRELAND,

has shone so nobly disinterested:

THIS WORK,

AS A SMALL MARK OF RESPECT AND ESTEEM,

IS HUMBLY DEDICATED,

By his ever obliged, obedient,

And faithful Friend and Servant,

John Stockdale.

London 6th May, 1800.
TRANSLATOR's PREFACE.

THE laudable taste for Voyages and Travels, which prevails in the present age, has been gratified with many excellent productions, which render that species of literature highly interesting to readers of almost every description. Modern voyages of discovery have embraced so many objects, that in them the Navigator sees the progress of his important art, the Geographer observes the improvement of his kindred science, the Naturalist is gratified with curious and useful objects of research, the Merchant discovers new scenes of commercial enterprise, and the General Reader finds a fund of rational entertainment.

The Moral Philosopher, too, who loves to trace the advances of his species through its various gradations from savage to civilized life, draws from voyages and travels, the facts from which he is to deduce his conclusions respecting the social, intellectual, and moral progress of Man. He
savage life every where diversified with a variety, which, if he reason fairly, must lead him to conclude, that what is called the state of nature, is, in truth, the state of a rational being placed in various physical circumstances, which have contracted or expanded his faculties in various degrees; but that "men always appear among animals a distinct and a superior race; that neither the possession of similar organs, "nor the use of the hand," which nature has "given to some species of apes, nor the continued "intercourse with this sovereign artist, have en- "abled any other species to blend their nature "with his; that in his rudest state he is found "to be above them, and in his greatest degene- "racy never descends to their level; that he is, "in short, a man in every condition; and that "we can learn nothing of his nature from the "analogy of other animals."* Every where adapting means to ends, and variously altering and combining those means, according to his views and wants, Man, even when pursuing the gratification of animal instincts, too often miser- ably depraved, shows himself to be possessed of nobler faculties, of liberty to chuse among differ- ent objects and expedients, and of reason to

* Ferguson on Civil Society.
direct him in that choice. There is sufficient va-
riety in human actions to show that, though Man
acts from motives, he acts not mechanically, but
freely; yet sufficient similarity of conduct, in
similar circumstances, to prove the unity of his
nature. Hence there appears no ground what-
ever for supposing, that any one tribe of mankind
is naturally of an order superior to the rest, or
has any shadow of right to infringe, far less to
abrogate, the common claims of humanity. Phi-
losophers should not forget, and the most respect-
able modern philosophers have not forgotten,
that the savage state of the most civilized nations
now in Europe, is a subject within the pale of
authentic history, and that the privation of iron
alone, would soon reduce them nearly to the bar-
barous state, from which, by a train of favourable
events, their forefathers emerged some centuries
ago. If the limits of a preface would allow us
to pursue the reflections suggested by the different
views of savage life, presented by this and various
other scientific voyages, it would be easy to show,
that the boasted refinement of Europe entirely
depends on a few happy discoveries, which are
become so familiar to us, that we are apt to sup-
pose the inhabitants of these parts of the world
to have been always possessed of them; discover-
ries so unaccountable, and so remote from any experiments which uncivilized tribes can be supposed to have made, that we cannot do better than acknowledge them among the many precious gifts of an indulgent Providence.

Having mentioned Providence, a word not very common in some of our modern voyages, we are tempted to add a consideration which has often occurred to our minds, in contemplating the probable issue of that zeal for discovering and corresponding with distant regions, which has long animated the maritime powers of Europe. Without obtruding our own sentiments on the reader, we may be permitted to ask, Whether appearances do not justify a conjecture, that the Great Arbiter of the destinies of nations may render that zeal subservient to the moral and intellectual, not to say the religious, improvement, and the consequent happiness, of our whole species? or, Whether, as has hitherto generally happened, the advantages of civilization may not, in the progress of events, be transferred from the Europeans, who have but too little prized them, to those remote countries which they have been so diligently exploring? If so, the period may arrive, when New Zealand may produce her Lockes, her Newtons, and her Montesquieus; and
and when great nations in the immense region of New Holland, may send their navigators, philosophers, and antiquaries, to contemplate the ruins of ancient London and Paris, and to trace the languid remains of the arts and sciences in this quarter of the globe. Who can tell, whether the rudiments of some great future empire may not already exist at Botany Bay?

But, not to detain the reader with such general reflections, which, however, open interesting views to contemplative minds, we proceed to say a few words of the work now presented to the Public. And here we need to do little more than refer to the learned and ingenious Author's introduction to his own work. The reader will immediately perceive that, if it has been tolerably executed, it must form a valuable Supplement to the Voyage* of the unfortunate La Pérouse—so valuable indeed, that it may fairly be questioned, whether that work can be considered as perfect without it.

Of the execution of the work, the reader must

* Printed for Stockdale, London, in two large vols. 8vo. with fifty-one fine Plates. It must be observed, that this is the only edition to which are annexed the interesting Travels of De Lërreps, over the Continent, from Kamt-schatka, with Pérouse's dispatches.
form his own judgment. He will perhaps agree with us, that the Author writes with the modesty and perspicuity which become a philosopher, who all along recollects that he is composing a narrative, and not a declamation. He has, in our opinion, with great taste and judgment, generally abstained from those rhetorical flourishes, which give an air of bombast to too many of the works of his countrymen, even when treating of subjects which demand accuracy rather than ornament. Most of his reflections are pertinent and just, and not so far pursued as to deprive the reader of an opportunity of exercising his ingenuity by extending them farther.

This chaste and unaffected manner of writing may be considered as an internal mark of the fidelity of his narrative. He had no weak or deformed parts to conceal with flowery verbiage, and therefore he rejected its meretricious aid. As another, and a still stronger proof of our Author's fidelity, we may mention his occasional censure of the conduct of Officers, not excepting the Commander in Chief himself, when their conduct happened not to appear quite deserving of that general approbation, which he seems willing to bestow. A man must be very conscious of having honestly executed his own mission, and of faithfully
faithfully describing the objects of it, when he scruples not to express publicly his disapprobation of the conduct of Officers of talents and distinction, engaged in the higher departments of the same great undertaking.

In translating the work, the object aimed at was to render it so literally as never to depart from the meaning of the Author; yet so freely as not merely to clothe his French idiom with English words. The translation of such a work should, in our opinion, be free without licence, and literal without servility.

Some readers would, no doubt, have willingly dispensed with a great number of the nautical remarks, and with all the bearings and distances; but those particulars were plainly so important to navigators, that they could not, on any account, be omitted. Nor, indeed, has a single sentence of the original, been retrenched in the translation, except two passages, which would have been justly considered as indecent by most English readers; and, for the same reason, the two engravings referred to in the exceptionable passages, have been altered.

The whole of the plates are given in a style generally not inferior to the original, which, with the
the French work in quarto, are sold for six guineas, being thrice the price of the present translation.

** In the original, the distances are all expressed in the new French denominations of *mètres, décamètres, &c.* and the Author has given a table for reducing them to toifes. But, in the translation, the reader has been spared that trouble, by every where inserting the equivalent toifes, or French fathoms. A toife is equal to six French feet, or nearly to six feet five inches, English measure: 2,853 toifes make a geographical or nautical league, twenty of which make a degree of a great circle of the earth. Hence, to reduce toifes to nautical leagues, divide them by 2,853; the quotient will be the leagues, and the remainder the odd toifes.
INTRODUCTION.

No intelligence had been received for three years respecting the ships Bouffole and Astrolabe, commanded by M. de la Pérouse, when, early in the year 1791, the Parisian Society of Natural History called the attention of the Constituent Assembly to the fate of that navigator, and his unfortunate companions.

The hope of recovering at least some wreck of an expedition undertaken to promote the sciences, induced the Assembly to send two other ships to steer the same course which those navigators must have pursued, after their departure from Botany Bay. Some of them, it was thought, might have escaped from the wreck, and might be confined in a desert island, or thrown upon some coast inhabited by savages. Perhaps they might be dragging out life in a distant clime, with their longing eyes continually fixed upon the sea, anxiously looking for that relief which they had a right to expect from their country.

On the 9th of February 1791, the following decree was passed upon this subject:

"The National Assembly having heard the report
"report of its joint Committees of Agriculture, Commerce, and the Marine, decrees,

"That the King be petitioned to issue orders to all the ambassadors, residents, consuls, and agents of the nation, to apply, in the name of humanity, and of the arts and sciences, to the different Sovereigns at whose courts they reside, requesting them to charge all their navigators and agents whatsoever, and in what places soever, but particularly in the most southerly parts of the South Sea, to search diligently for the two French frigates, the Bouffole and the Astrolabe, commanded by M. de la Pérouse, as also for their ships' companies, and to make every inquiry which has a tendency to ascertain their existence or their shipwreck; in order that, if M. de la Pérouse and his companions should be found or met with, in any place whatsoever, they may give them every assistance, and procure them all the means necessary for their return into their own country, and for bringing with them all the property of which they may be possessed; and the National Assembly engages to indemnify, and even to reimburse, in proportion to the importance of the service, any person or persons who shall give assistance to those navigators, shall procure intelligence concerning them, or shall be instrumental
mental in restoring to France any papers or effects whatsoever, which may belong, or may have belonged, to their expedition:

"Decrees, farther, that the King be petitioned to give orders for the fitting out of one or more ships, having on board men of science, naturalists, and draughtsmen, and to charge the commanders of the expedition with the two-fold mission of searching for M. de la Pérouse, agreeable to the documents, instructions, and orders which shall be delivered to them, and of making inquiries relative to the sciences and to commerce, taking every measure to render this expedition useful and advantageous to navigation, geography, commerce, and the arts and sciences, independently of their search for M. de la Pérouse, and even after having found him, or obtained intelligence concerning him."

Compared with the original, by us the President and Secretaries of the National Assembly, at Paris, this 24th day of Feb. 1791.

(Signed) Duport, President.

Lioe, Boussion, Secretaries.

From my earliest years, I had devoted myself to the science of natural history; and, being persuaded,
tuated, that it is in the great book of Nature, that we ought to study her productions, and form a just idea of her phenomena, when I had finished my medical course, I took a journey into England, which was immediately followed by another into the Alps, where the different temperatures of a mountainous region present us with a prodigious variety of objects.

I next visited a part of Asia Minor, where I resided two years, in order that I might examine those plants, of which the Greek and Arabian physicians have left us very imperfect descriptions; and I had the satisfaction of bringing from that country very important collections.

Soon after my return from this last tour, the National Assembly decreed the equipment of two ships, in order to attempt to recover at least a part of the wreck of the ships commanded by La Pérouse.

It was an honourable distinction to be of the number of those, whose duty it was to make every possible search, which could contribute to restore to their country, men who had rendered her such services.

That voyage was, in other respects, very tempting to a naturalist. Countries newly discovered might be expected to increase our knowledge with new
new productions, which might contribute to the advancement of the arts and sciences.

My passion for voyages had hitherto increased, and three months spent in navigating the Mediterranean, when I went to Asia Minor, had given me some experience of a long voyage. Hence I seized with avidity this opportunity of traversing the South Seas.

If the gratification of this passion for study costs us trouble, the varied products of a newly discovered region amply compensate us for all the sufferings unavoidable in long voyages.

I was appointed by the Government to make, in the capacity of naturalist, the voyage of which I am about to give an account.

My Journal, which was kept with care during the whole course of the voyage, contained many nautical observations; but I ought to observe, that that part of my work would have been very incomplete, without the auxiliary labour bestowed upon it by Citizen Legrand, one of the best officers of our expedition.

I take this opportunity of testifying my grateful remembrance of that skilful mariner, whose loss in the present war is a subject of regret.

When I was leaving Batavia, in order to proceed to the Isle of France, Citizen Piron, draughtsman to the expedition, begged my acceptance of Vol. I.
duplicates of his drawings of the dresses of the natives, which he had made in the course of the voyage. I do not hesitate to assure my readers, that those works of his pencil are striking likeness.

I have endeavoured to report, in the most exact manner, the facts which I witnessed during this painful voyage, across seas abounding with rocks, and among savages, against whom it was necessary to exert continual vigilance.

General Dentrecasteaux received the command of the expedition. That officer requested from the Government two ships of about five hundred tons burden. Their bottoms were sheathed with wood, and then filled with copper nails. It was not apprehended that this mode would diminish their velocity, and it was thought that it would add to the solidity of their construction. It is, however, acknowledged that ships sheathed and bottomed with copper may be constructed with equal solidity, and that they have greatly the advantage in point of failing. Those ships received names analogous to the object of the enterprise. That in which General Dentrecasteaux embarked, was called the Recherche (Research), and the other, commanded by Captain Huon Kermadec, received the name of the Esperance (the Hope).
The Recherche had on board one hundred and thirteen men at the time of her departure: the Esperance only one hundred and six.

ON BOARD OF THE RECHERCHE.*

Principal Officers.

Bruny Dentrecasteaux, Commander of the Expedition,
Doribeu, Lieutenant,
Rossel, ditto,
Cretin, ditto,
Saint Aignan, ditto,
Singler Dewelle ditto,
Willaumez senior, Ensign,
Longuerue, Elevé,
Achard Bonvouloir, ditto,
Dumerite, Volunteer,
Renard, Surgeon,
Hiacinthe Boideliot, Surgeon's Mate.

Letrand, Astronomer,
Labillardiere, Naturalist,
Deschamps, ditto,
Louis Ventenat, ditto, acting as Chaplain,
Beautems Beaupré, Geographical Engineer,
Piron, Draughtsman,

Lahaie, Gardener.

Warrant and Petty Officers - - 8
Gunners and Soldiers - - 18
Carpenters - - 3
Caulkers - - 2

* The name of every individual on board both the ships is inserted in the original; but it seems unnecessary to retain any names in this translation but those of the officers and men of science, who, if we may use the expression, are the chief dramatis personæ, and several of them come forward, in their respective capacities, in the course of the work.—Translator.
INTRODUCTION.

ON BOARD THE ESPERANCE.

Principal Officers.

Huon Kermadec, Captain,
Trobiante, Lieutenent,
Laffeny, ditto,
Lagrandiere, ditto,
Lufançay, ditto,
Lamotte Dupertail, ditto,
Legrand, Ensign,
Laignel, ditto,
Jurieu, Volunteer,
Boyne, Eleve,
Jouanet, Surgeon,
Gauffre, Surgeon's Mate.
Pierfon, Astronomer, acting as Chaplain,
Riche, Naturalist,
Blavier, ditto,
Jouveney, Geographical Engineer,
Ely, Draughtsman.

Warrant and Petty Officers

Armourers
Gunners and Marines
Carpenters
Blacksmith
Caulkers
Sail-makers
Pilots

Sailors
Sailors - - - - - - 36
Boys - - - - - - 5
Cook, Baker, &c. - - - - - - 5
Domeftics - - - - - - 8

It is melancholy to add, that of two hundred and nineteen people, ninety-nine had died before my arrival in the Isle of France. But it must be observed, that we lost but few people in the course of our voyage, and that the dreadful mortality which we experienced was owing to our long stay in the island of Java.
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VOYAGE
IN SEARCH OF
LA PÉROUSE.

CHAP. I.
Departure from Brest—Arrival at St. Croix, in the Island of Teneriffe—Journey to the Peak of Teneriffe—Resuscitation of a Sailor who had been drowned—Some daring Robbers carry off his Clothes—Two of our Naturalists are attacked with a Spitting of Blood, which obliges them to give up their Design of Proceeding to the Summit of the Peak—English Vessels in the Road of St. Croix—Different Results from the Observations made in Order to determine the Variations of the Needle—New Eruption of a Volcano to the South-east of the Peak.

AUGUST, 1791.

The equipment of the two vessels appointed for the voyage which we were about to undertake being already in a state of great forwardness, towards the close of the month of August, we received orders from General Dentrecausteaux to repair to Brest. I had the pleasure of travelling thither in the company of three persons engaged
in the same expedition, namely, the Citizens Riche, Beaupré, and Pierson.

We arrived at Brest on the 10th of September. Some of the finest ships in the French navy, such as the Majestueux, the États de Bourgogne, the America, &c. were then in the harbour.

While our astronomers were engaged in making the observations necessary for determining the movements of our time-keepers, those who designed to make Natural History the principal object of their attention were employed in furnishing themselves with all the requisites for preparing the collections, which they purposed to make in the unknown countries we were about to visit.

As it was my intention to devote myself chiefly to the observation of the vegetable kingdom, I stood in need of a great quantity of paper, and wished to provide myself with some of a very large size. It was, however, not without great difficulty that I was able to procure twenty-two reams; almost all that remained in the warehouses having been lately appropriated to the service of the artillery.

I employed a part of the time that I had at my own disposal in examining the botanical garden, which is kept in very good order. There is also, in this place, a small cabinet of natural history, which
which contains several anatomical preparations presented to it by Citizen Joannet, surgeon of the Esperance.

The muster of our crews took place in the harbour on the 21st of September.

The vessels went into the road-stead on the 25th. There were then no foreign ships there, and very few French.

We were very heavily laden, so that when we set sail our draught was thirteen feet nine inches at the stern, and twelve feet ten inches at the head.

There were on board the Recherche: 6 eight pounders; 2 caronades of thirty-six; 6 pedereroes of half a pound; 12 pedereroes of six ounces; 45 muskets; 35 pistols; 50 sabres: 30 battle-axes, and 10 espingoles.

The Esperance was provided with nearly the same means of defence, which were sufficient to secure us against any violence that might be attempted by savages.

Both vessels were furnished with a great store of commodities intended to be distributed amongst the natives of the South-seas. Iron tools, and stuffs of different colours, especially red, formed the basis of our bartering stock.

Each of the vessels was stored with provisions sufficient for the consumption of eighteen months.
We now only waited for a favourable wind to set sail. A pretty fresh breeze springing up from the east, enabled us to get under way about one o'clock in the afternoon of the 28th of September. Soon after we had left the roads, we discovered two sailors and a cabin-boy, who being very desirous of going on this expedition, and having been disappointed in their wish to be included in our crew, had concealed themselves in the ship. As we had scarcely room sufficient for the men already on board, our Commander gave orders to tack about and make for the roads of Bertheaume, where our three unbidden guests were set on shore.

The Esperance, having met with no such interruption, had got considerably a-head of us, but we came up with her before night, as our vessel was a much better sailer.

At taking our departure at six in the evening, we found our place to be 48° 13' N. lat. 7° 15' E. long.

We set the ouestant at N. 2° W. of the compass.
The bec de la chevre at S. E. 4° E.
The bec du raz at S. 2° E.
Point Mathieu was then at the distance of 2,565 toises.

We now steered our course E. N. E. till towards midnight, when we directed it right east.

On
On the 29th, our Commander Dentrecausteaux was informed, by dispatches which he had orders not to open before we were in the main sea, that Major Huon Kermadec, Commander of the Esperance, was advanced to the rank of post-captain (capitaine de vaisseau), and himself to that of rear-admiral (contre-amiral). This intelligence was immediately conveyed by the speaking-trumpet to the Esperance, and our flags were hoisted with the distinctive ensigns of the rank conferred upon the Commander.

We again discovered two marines, and a cabin-boy, who were not inrolled among our crew, and had kept themselves till now concealed in the ship. As we were already too far from the land to set them on shore, the Commander permitted them to accompany us on our expedition.

Having made several sea-voyages before the present, I had flattered myself that I was too seasoned a sailor to be any more incommoded by the motion of the vessel; but I found that I had already entirely lost this qualification, for I was sea-sick during the first three days after our failing from Brest. I have had frequent opportunities in the course of this voyage of remarking, that a very short stay upon shore is sufficient to render me anew susceptible of sickness from the motion.
tion of the vessel; for whenever we have put out
to sea, after having lain a short time at anchor,
I have always been disordered for two or three
days as much as I was after our departure from
Brest. The sailors advise one, in these cases, to
endeavour to eat, notwithstanding the loathing of
food that always accompanies this disorder. But
this piece of advice it is very difficult to follow;
for besides the pain produced by the action of
swallowing, the presence of food in the stomach
increases the nausea, and the vomiting that su-
pervenes is still more distressing.

Diluting liquors, taken in small quantities at a
time, so as not to burden the stomach, have always
afforded me the most relief. Lukewarm water,
slightly sweetened with sugar, is the drink which
I have generally used, as it is the easiest to be
procured at sea.

We had, however, several persons on board,
who, though they had never been at sea before,
experienced not the smallest inconvenience from
the tossing of the ship. Such a constitution is
very desirable for those who undertake long voy-
ages; for it is impossible to describe the disagree-
able sensations that attend this spasmodic affec-
tion, which, as it operates upon every part of the
frame, produces such a general depression of its
powers,
powers, that life would be insupportable, were it not for the hope of a speedy termination of the disorder.

From the day of our setting sail, to the 5th of October, we had slight breezes, that varied between the north and east points of the compass. From that time to our arrival at Teneriffe, they blew pretty fresh, varying between the north and north-east. This alteration in the state of the wind gave us no small uneasiness, as in our situation it might become productive of the most fatal consequences. Lumbered as we were in every part of the vessel, and drawing considerably above the load-water line, we ran the risk of being overset by a sudden squall: besides, the stowage had been very negligently performed. In this disorderly state we had failed from France, although the expedition had been decreed by the National Assembly almost eight months before it took place.

On the 11th of October, about fifty-five minutes after ten o'clock, we observed an eclipse of the moon. The observations that can be taken at sea, lead to no very accurate results. Citizen Willaumez, however, concluded, from one which he took, that we were now in the longitude of $18^\circ 19' 45"$ W. On the 12th, about eight in the morning,
morning, the Esperance intimated to us by a signal, that land was espied.

Towards noon we reckoned ourselves to be at the distance of about 71,800 toises from the peak of Teneriffe, which bore S. E. S. raising its head majestically above the clouds.

At the close of the evening we were not more than about 10,260 toises distant from the north-east point of the island. We shifted with the fore and main top-sails every three hours, whilst we expected the dawn. As soon as it appeared, we made towards the island, coasting along at the distance of 500 toises.

About half an hour after nine in the morning, we cast anchor in the road of St. Croix, in a muddy bottom of black sand, about fifteen toises in depth.

The French Consul, Citizen Fontpertuis, waited immediately upon our Commander, with an offer of his services in furnishing us with whatever we might want for the prosecution of our expedition.

I went on shore in the afternoon, to take a view of the environs of the town. Although the season was considerably advanced, the reflection of the rays of the sun from the volcanic stones, produced a degree of heat that was the more oppressive as the air was perfectly calm.
I observed among the plants that grow in the neighbourhood of St. Croix, a woody species of balm, known by botanists under the name of melissa fruticosa, also the saccharum teneriffae, the cacalia kleinia, the datura metel, the chrysanthemum frutescens, &c. Some of the gardens were ornamented with the beautiful tree termed poinciana pulcherrima.

In the evening, Citizen Ely, being struck with the grotesque appearance of some of the women in the town, who, even during the greatest heat of the season, wear long cloaks of very coarse woollen stuffs, was employed in drawing a sketch of one of them, when he was suddenly interrupted by a sentinel, who imagined him to be taking a plan of the harbour. It was in vain that he attempted to explain to him what his draught was intended to represent: the soldier would not suffer him to finish it.

As we had anchored too close to another small vessel, we cast an anchor in the afternoon nearer to the shore, by which we kept ourselves at a convenient distance.

The bearings we took at this place gave us the following results:

The redoubt on the north side of the town, N. N. E. 4° E.
The great tower situated about the middle of the town, E. S. E.

At sun-rise each of the forts returned our salute of nine guns with an equal number. On the noon of the preceding day, we had saluted the town with fifteen, as it returned us gun for gun.

A packet-boat from Spain cast anchor to-day in the road-stead.

We had agreed to take a journey to the peak on the morrow, and subsequently to visit the other high mountains of the island in succession. The French Consul very obligingly did all that was in his power, to facilitate the execution of our design, and gave us letters of recommendation to M. de Cologant, a very respectable merchant, resident at Orotava.

About four o'clock the next morning, our party assembled upon the Mole to the number of eight; namely, Develle, one of the officers of our ship, Piron, Deschamps, Lahaye, and myself, with three servants, one of whom understood the Spanish language, and served as our interpreter. We found the mules that were to carry us at the sea-side; but it was more than an hour before we could set out upon our journey, it being no easy matter to assemble our guides, some of whom, knowing that we could not set off without them, made
made no scruple of letting us wait till they chose to make their appearance. When they had arrived we thought we should be able immediately to proceed, but we were obliged to expostulate with them a long time, before they could be induced to carry the small stock of necessaries that we took with us upon our expedition.

The reader will recollect that our ships were so plentifully stored with provisions, that one might have thought we were going to fail to some desert country. Rosfel, who had the charge of the officers' table, had given orders to the cook to send us an excellent salmon-pie for our journey. I should not have mentioned so trivial a circumstance, had it not been for the sake of the contrast which it affords with the worm-eaten biscuits and cheese, that were our usual regale whilst we remained on shore, in the subsequent part of our expedition.

Monse. de Cologant having been informed by the French Consul of our intended journey, invited us to come to his house at the harbour of Orotava. This port, which is not more than about 15,390 toises distant from St. Croix, is a very convenient baiting-place for those who visit the peak; it being situated at the foot of the nearest mountains of the chain to which it belongs.
We were three hours before we arrived at Laguna. This town is only 5,130 toises distant from St. Croix; but the road thither is very fatiguing, as it ascends for the greater part of the way. The place is meanly built, and very thinly inhabited. We were informed that at least one half of its inhabitants consists of monks.

On our way to Laguna we passed over some barren mountains, which were covered with a variety of plants of a luxurious growth. Amongst others we noticed the *euphorbia canariensis*, the *euphorbia dendroides*, the *eacalia kleinia*, the *cachis opuntia*, &c. These plants, as they derive their nourishment almost entirely from the atmosphere, thrive very well in spite of the sterility of the abrupt precipices on which they grow. When we descended into the small plain on which the town stands, we remarked that the mould produced from the corruption of the vegetables, and washed down from the surrounding mountains by the rain, answers a very useful purpose in fertilizing this little spot of ground, so that it yields abundance of corn, Indian wheat, millet, and other esculent plants.

I here observed a species of the *periploca*, which I had formerly discovered during my travels in the Levant. I have given an account of it in the second decade of my description of the plants of
of Syria, under the appellation of *periploca angustifolia*. Citizen Desfontaines has likewise collected some of the same species upon the coasts of Barbary.

All the stones that we had hitherto seen in these regions appeared to have undergone the action of fire. As the mountains of this chain that are of the mean elevation consist of large masses, that after being fused must have retained a great degree of heat for a considerable length of time; I expected to find the lavas very compact in their texture. My conjecture was confirmed. Their grain is very fine, and their colour for the most part a deep brown.

Surrounded with these volcanic remains, we found the heat very oppressive, which appeared to incommode our guides much more than ourselves; so that they exerted all their powers of persuasion in order to prevail upon us to make halt during the day, and only travel in the night-time. They probably imagined that our sole aim was to see the summit of the peak, and several of our company would have had no very great objections against our journey being conducted upon that plan. But it is easy to suppose that such a nocturnal ramble could not promise much advantage to those whose object of pursuit was the study of natural history.
The inhabitants of the island are beset with religious prejudices from their earliest infancy. The children came running out of their habitations to enquire if we were of their religion; and we contented ourselves with commiserating the unfortunate beings, upon whom monkish bigotry and intolerance exert with unbounded rigour their pernicious sway.

Most of the garden-walls in the country beyond Laguna, are ornamented with the beautiful plant called *trichomanes canariense*.

As we approached Orotava, our road led us down a very gentle declivity. We saw no more such barren mountains as in the vicinity of St. Croix, where the luxuriance of the vegetable kingdom is only an indication of the sterility of the soil; but verdant banks covered with vineyards, the produce of which constitutes the chief wealth of the island. The shrub termed *bouea yervamora* grows here in low situations.

At five o'clock in the evening we arrived at Orotava, where we were received by M. de Cologant, in the most hospitable manner.

Two vessels, an English and a Dutch, were then at anchor in the road-stead, in order to take in a cargo of wine. The landing-place here is much more difficult of access than that at St. Croix,
Croix, on which account this harbour is less frequented.

M. de Cologant's wine-vaults were an object well worthy of our attention; as the wines of the island are the principal commodity in which this opulent merchant trades.

Amongst the different kinds of wine which they contain, there are two sorts that have qualities very distinct from each other; namely, the sack, or dry wine, and that which is commonly known by the name of malmscy. In the preparation of the latter, care is taken to concentrate its saccharine principle as much as possible.

The price of the best wine was then 120 piastré per pipe, and that of the inferior fort 60 piastrés. It is necessary however to remark, that I here speak only of the price at which it is sold to strangers; for the same wine which they buy at 60 piastré the pipe, is sold to the inhabitants of the island for six and thirty.

When the fermentation of these wines has proceeded to a certain length, it is the custom to mix with them a considerable quantity of brandy, which renders them so heady, that many persons are unable to drink them, even in very moderate quantity, without feeling disagreeable effects upon the nervous system from this admixture.

We were assured that the island generally yields thirty
thirty thousand pipes of wine in a year. As it does not produce a sufficient quantity of corn for the consumption of the inhabitants, a part of the produce of the wines, which are sold to strangers as Madeira wine (and indeed they differ very little from it in quality), is expended in the purchase of this indispensably necessary article of sustenance.

Although the olive thrives very well in this island, it is very little cultivated. The different species of the palm-tree that are to be met with in some of the gardens, are cultivated only for curiosity.

We had been assured, before our departure from St. Croix, that we should find the summit of the peak already covered with snow. I had not thought it necessary to take a barometer with me at setting out; but I found at Orotava that I had been led into a mistake; and there I was unable to procure this instrument of observation.*

We purposed to proceed very early the next morning on our journey. But that happened to

* We read, in the account of the Voyage of La Pérouse, that when the ship lay at anchor in the road of St. Croix, the mercury, in the barometer that Lamanon had taken with him, fell at the peak of Teneriffe to 18 inches 4 lines, whilst the thermometer indicated $97\frac{9}{10}$° above 0, though, at the same moment of time, the barometer stood, at St. Croix, at 28 inches 3 lines, and the thermometer at $24\frac{1}{2}$°.
be a festival day, and our guides could not be persuaded to set out before they had heard mass; some of them had even heard three already: as for us, we waited for them with the most impatient solicitude, when our uneasiness was redoubled by being informed that we ought to consider it as a very great indulgence if they would agree to travel at all on so high a festival. They were, however, at length ready to accompany us, about nine o'clock in the forenoon.

Having left the town, we pursued a track that often led us up very steep ascents, from whence we observed enormous masses of mountains piled one upon the other, and forming a sort of amphitheatre round the base of the peak. On their brows we frequently met with level spots that served us for resting-places, where, after having fatigued ourselves with climbing up the rugged paths, we stopped for a short time to take breath, and acquire fresh courage for ascending the higher mountains.

Our guides were astonished to observe that some of us chose to go on foot, contrary to the custom of the greater part of those who make the tour of the peak; and incessantly admonished us to ride upon the mules which they led along with them.

After having passed through some fine planta-
tions of vines, we found ourselves surrounded with chestnut-trees, which cover the most elevated regions of these mountains.

In the clefts between the mountains, I observed the *polipodium virginicum*, and several species of the laurel that were new to me, amongst the rest the *laura indica* of Linnaeus.

Although we purposed to perform our journey within a space of not many days, we ought to have provided ourselves with a larger stock of shoes; for even the strongest soles were soon ground to pieces by the lava on which we walked.

It was near noon when we arrived at the height of the clouds, which spread a thick dew over the brush-wood through which our road led us.

One should think that the abundance of rain which falls upon these heights, in consequence of the natural propensity of the atmosphere,* must give

*We may here remark, that when high mountains become much heated by the rays of the sun, they act as a kind of stove, by which the superincumbent atmosphere is elevated in consequence of the dilatation which it undergoes. Hence arises the moisture of the more distant part of the atmosphere, which, rushing in to supply the place of that which has been sent into higher regions by the action of the heat, carries with it the clouds suspended in it; as I have had frequent opportunities of observing at Mount Libanon, where this phenomenon never fails to take place about five o'clock in the afternoon during the heats of the month*
Oct.] OF LA PERouse. 51
give rise to a great number of springs. They are, nevertheless, very rare; as the earth is not sufficiently attenuated to retain the water, which filtrating through the volcanic soil, discharges itself, for the greater part, into the ocean, without collecting into regular streams.

As soon as we had surmounted these thick clouds, we enjoyed a spectacle beautiful beyond conception. The clouds heaped up below us appeared blended with the distant ocean, and concealed the island from our sight. The sky above us formed a vault of the most transparent azure, whilst the peak appeared like an insulated mountain placed in the midst of a vast expanse of waters.

Soon after we had left the clouds beneath us, I observed a phenomenon, which I had formerly had occasion to remark, during my stay amongst the high mountains of Kesroan in Natolia. It was with new surprize that I saw the outlines of my figure, delineated in all the beautiful tints of the rainbow, upon the clouds below me, situated opposite to the sun.

The decomposition of the rays of the sun, by of September, unless some violent current of the atmosphere should happen to counteract its natural disposition. Perhaps this may be the sole reason of the attraction that appears to exist between mountains and clouds.
contact with the surfaces of bodies, affords a very satisfactory explanation of this splendid phenomenon. It exemplifies, upon a large scale, a fact well known to natural philosophers; namely, that when the rays of the sun are made to pass through a small hole in the window-shutter of a darkened chamber, so as to fall upon any object within it, they represent the outlines of the object in all the various colours of the rainbow, by being collected with a prism and thrown upon a white sheet of paper.

We now had to cross a prodigious heap of pumice-stones, amongst which we observed very few vegetables, and those in a very languishing condition. The spartium was the only shrub that could support itself in these elevated regions. It was very troublesome walking upon this volcanic soil, as we funk into it up to the middle of the leg. We found some blocks of pozzolana sparingly scattered among the pumice-earth.

At nine o'clock in the evening we took up our abode for the night in the midst of the lava. Some large fragments that we found, were our only shelter against the east wind, which blew with considerable violence. The cold was very intense at this height, where nature has not consulted the convenience of travellers, as very little wood is found here; so that the scanty fuel that
we were able to collect, was not sufficient to prevent us from passing a very unpleasant night.

The day at length began to dawn. We left some of our guides with their mules at the place where we had spent the night, and proceeded on our journey to the peak, which we were now in haste to accomplish.

We continued, for the space of an hour, to travel over large heaps of fragments of a greyish coloured lava, amongst which some blocks of pozzolana were scattered, as also huge masses of a very compact blackish glass, which bore a great resemblance to the coarse glass of bottles. This glass, though formed in the vast crucibles of the mountains at the time of their combustion, might become very useful in the arts; for being already completely manufactured by the hand of nature, it would only require to be exposed to the action of the fire in order to fuse it anew, and render it susceptible of being moulded into all the forms that the hand of man is able to give to it.

We arrived at the mouth of a cavern called la queue del anu, the orifice of which is full four feet and a half in diameter. As its cavity runs for a length of more than six feet in an almost horizontal direction, we were not able to reach the bottom otherwise than by descending into it with the help of a rope. We found that it contained water,
water, the surface of which, as was to have been expected at this height, was covered with ice about an inch and a half thick. We immediately made a hole in the ice, and regaled ourselves with some excellent water. I did not feel any of those disagreeable sensations in the throat, which I have often experienced on the French Alps, from drinking the water which issues from the foot of the Glaciers; although the cold of the water in this cavern was one degree lower than that generally indicated by the water of the Glaciers, for upon plunging a thermometer into it, it fell to the freezing point. It seems that the disagreeable prickling sensation occasioned by the water of the Glaciers in the internal fauces, arises from its being deprived of its atmospheric air.

The roof of the cavern was covered with crystals of saltpetre.

Piron, who had been indisposed for several days, found himself so overcome with fatigue as to be unable to proceed any further. Deschamps also chose to remain with him at the cavern: as for the rest of us, we set forward on our ascent to the summit of the peak.

Having reached its base, we saw it elevate itself before us in the shape of a cone, to a prodigious height, forming the crown of the highest of these mountains. From this spot our view extended
extended over all the rest of the mountains, which seemed to form so many gradations, that must first be surmounted before we can arrive at this commanding eminence.

At the place called La Ramblette, situated on the north-east side of the peak, our curiosity was excited by some clefts made in the rock, a few of which were three inches wide; the rest were merely cracks, from which issued an aqueous vapour that had no smell, although the sides of the chinks were covered with crystals of sulphur, shooting out from a very white earth, which appeared to be of an argiliaceous nature.

A mercurial thermometer being introduced into one of the clefts, the quicksilver rose, in the space of a minute, to $43^\circ$ above $0$ of Reaumur's scale. In several of the others it did not rise higher than $30^\circ$.

We were now engaged in the most toilsome part of our journey, the acclivity of the peak being exceedingly steep. When we had surmounted about a third part of the ascent, I made a hole about three inches deep into the earth, from whence an aqueous inodorous vapour issued, and though the heat of the surface of the earth was not greater than it usually is at an equal elevation, upon plunging a thermometer into it the mercury rose to $51^\circ$ above $0$. 

D 4 The
The *Spartium supra nubium* was the last shrub that I noticed before we arrived at the foot of the cone; but there is an herbaceous plant which, notwithstanding its apparent delicacy, vegetates even in still higher situations. I mean a species of violet with leaves somewhat elongated, and slightly indented at the edges; its flowering time was already past. We observed it to grow quite near to the summit of the peak.

The vapours of the atmosphere not being able to rise to this height, the sky presents itself in the purest azure, which is more bright and dazzling than what we can see in the clearest weather of our climates. Though some scattered clouds hung in the atmosphere far below our feet, we had still a very perfect view of the neighbouring islands.

The cone is terminated by a crater, the greatest elevation of which is on the north-east side. Its south-west side has a deep depression, which seems to have been produced by the sinking of the ground.

Near to the top are several orifices about three inches in diameter, from which a very hot vapour issues, that made Reaumur's thermometer rise to 67° above 0, emitting a sound very like that of the humming of bees. When the snow begins to fall on the summit of the peak in the latter part
part of the year, that which falls upon these orifices is soon melted by the heat. The sides of these holes are adorned with beautiful crystals of sulphur, mostly of the form of needles, and some of them arranged into very regular figures. The action of the sulphuric acid combined with the water, effects such a change upon the volcanic products of this place, that at first sight one might mistake them for very white argillaceous earth, that has acquired a high degree of ductility from the moisture constantly issuing from the above-mentioned apertures. It is in this kind of earth that the sulphuric crystals which I have spoken of are found.

The decomposition of the sulphur, and the volcanic products, form an aluminous salt that covers the ground in needles, which have very little cohesion with each other.

The thermometer, when placed in the shade at the height of about three feet from the surface of the ground at the summit of the peak, rose in a quarter of an hour to $15^\circ$ above 0. No sensible variation was observed upon changing its distance from the earth, even by six or eight feet, which gives us reason to believe, that the internal heat of the ground in this place, though so very great, has little influence upon the temperature of the atmosphere. Besides, the air of the atmosphere might
might easily be heated at this height by the rays of
the sun to 15°, as a higher temperature is often
experienced at the foot of the Glaciers. I have
often known the thermometer to stand at 20°
above 0 upon mount Libanon, though placed
quite close to the snow.

The declivity of the mountain facilitated our
return, and we descended much quicker than we
had ascended. It was already evening before we
reached the place where we had passed the pre-
ceding night. The almost total want of sleep,
which we had experienced in consequence of the
intense cold, gave us little courage to spend an-
other night at the same place. We therefore
wished to proceed immediately farther, in order
to seek a better shelter upon some of the neigh-
bouring mountains; but as our guides would not
move a step before the moon rose, we were com-
pelled to remain there till near midnight, waiting
for its appearance. With the assistance of its
feeble light, we descended over the pumice-stones,
following pretty closely the track which we had
made for ourselves in our ascent.

After a march of four hours, the brush-wood,
which grew very thick, obstructed our way so
much, that we were obliged to halt till day-break.
We had here abundance of fuel, and made our-
elves amends for the cold of the preceding night,
by immediately kindling a very large fire. Most of our company were so very much fatigued with their toilsome journey, that they had no other wish left than to make the best of their way back to St. Croix; although we had agreed at setting out from Orotava, that we would return by the opposite side of the mountains. But as we were no longer all of the same mind, it was settled that those who had already satisfied their curiosity, should return to the ships; whilst the gardener and myself alone resolved to complete our first design. All our guides wished to accompany those who were returning to the ships, so that it was with great difficulty that I could persuade one of them to attend us.

I was gratified with finding among the plants that grew on the sides of the rocks, the campanula aurea, the prenanthespininula, the adiantum reniforme, and a species of the ceterac, remarkable on account of its leaves, which are much larger than those of the European species.

As these mountains afford very little water, we directed our course towards a small habitation, where we presumed we should find ourselves near to some stream of water. We were not disappointed, for we came to a very fine spring of delicious limpid water, which lost itself again un-
under the ground, after having but just appeared above its surface.

Apple-trees loaded with fruit adorned the garden of these peaceable cottagers. This fruit tasted so delicious to the servant, who accompanied us, that he took it into his head, whilst we were employed in viewing the premises, to make an exchange that gave us a very poor idea of his foresight. He had given away our whole store of flesh-meat for some of these apples, without taking a moment's consideration whether or not they would be an equally good provision for us in travelling the mountains. We swore to ourselves that we would never on a future expedition leave our stores in the charge of such an oeconomist. In general it may be remarked, that the servants employed at sea are almost wholly unfit for service on shore.

At the close of the evening we were far from any habitation of men. About nine o'clock we reached a village, the inhabitants of which can certainly not be accused of carrying the virtue of hospitality to a blameable excess. It was not without the greatest difficulty that we were able to procure shelter among them. As we did not understand the Spanish language, we were obliged to make use of signs to express our meaning, a language
language that, in the night time at least, is a very imperfect means of communication; but our guide, who was no less desirous of going to bed than we were, went knocking in vain at one door after the other, till having gone round almost the whole village, we at length found two charitable souls who agreed to harbour us.

We were immediately served with a frugal repast, during which the house was lighted in the manner that is practised by some of the inhabitants of the Alps. They set fire to small splinters of very resinous wood, stuck into the wall, which afford plenty of light, but throw out a great deal of smoke. One of our hosts took the charge upon himself of lighting new splinters of wood as fast as the former were consumed.

We stood much more in need of sleep than of meat, and hastened to enjoy a repose, which proved the more delectable, as we were here no more incommoded with the cold we had experienced on the high mountains.

On the following day, the 19th, I went on board with my collection of volcanic products and some very fine specimens of plants, such as the teucrium betonicum, the eschium frutescens, &c.

The birds known by the name of Canary-birds are very common in the lower regions of these mountains; their colour is a brown mixed with various
various other hues, and their plumage is not so beautiful in their wild state, as it becomes when they are domesticated. Some travellers have asserted, that an indigenous species of the parrot is found in these islands; but I have never seen any in my excursions, and several credible persons among the inhabitants have assured me that this assertion is destitute of foundation.

A very stiff gale, which sprung up to-day, caused the sea to swell to such a height, as to drive on shore the pinnace of the Esperance, after having overthrown it upon one of the sailors, who could not be extricated in less than a space of several minutes. He was already suffocated to a great degree; but the means usually employed in these cases proved successful in restoring him to animation.

Whilst I here express my gratitude to the garrison of St. Croix, for the alacrity with which they hastened to the relief of this unfortunate sailor; I cannot pass over in silence a piece of knavery committed upon this occasion by some of the natives.

Whilst we were administering our assistance to this man, we had hung up his clothes to dry, little suspecting what should happen. Some of the inhabitants of the town, perhaps conceiving him already dead, thought fit to appropriate his clothes
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clothes to the use of the living: they were accordingly carried off, and all pursuit after the robbers was in vain.

Citizens Riche and Blavier, engaged in the study of natural history, had undertaken a journey to the peak the day after we had set out upon ours; but they did not succeed in reaching the summit; for whilst they were still at a considerable distance from it, their lungs being unable to accommodate themselves to the rarefied atmosphere, they were seized with a spitting of blood, which obliged them to relinquish their enterprise.

The following days were employed by us in visiting the environs of St. Croix, where the country is in general very barren.

The town is very thinly peopled, even in proportion to the smallness of its extent; though the harbour here is more frequented than any other in the island. The Spaniards have introduced here their own manner of building. The distribution of the internal part of the houses is the same with that which they practise in Europe, without any of those modifications which the difference of the climate requires.

The Governor-general of the Canary-islands usually resides at St. Croix. There are several convents of monks and nuns in this place. One of
of the parochial churches here is equally remarkable for the tasteless profusion with which the gilding is lavished upon it, and the bad choice of its paintings.

In the market-place there is a fine fountain, the water of which is conveyed from a great distance by wooden pipes through the mountains. The streets are ill-paved; most of the windows are without glass-panes, lattices being used instead of them, which the women very frequently open, when curiosity, or any other motive, prompts them to let themselves be seen.

Women of condition dress after the French fashion; those of the lower ranks cover their shoulders with a piece of coarse woollen stuff, which forms a sort of cloak very inconvenient in this hot climate; broad-brimmed hats of felt shelter their faces from the rays of the sun; intermarriages with the natives render their complexions darker than those of their countrywomen; and their features are upon the whole rather disagreeable.

The multiplicity of religious observances practised by the inhabitants were not sufficient to prevent the women from going, with their chaplets in their hands, to meet our sailors, whenever they came on shore, some of whom have had to repent
pented for a long time their having been seduced by such a superabundance of attractions.

The wine of Teneriffe, which, as I have already observed, is very heady, was likely to have been the cause of very fatal consequences to one of our sailors, who, in a fit of intoxication, committed a very heinous offence upon a sentinel. The French Consul, however, made use of his interest with the officer who had the command during the absence of the Governor-general, so as to prevent any cognizance being taken of the matter. The discipline observed on board the English ships effectually secures them from any of these disagreeable occurrences.

The Scorpion sloop of war, of sixteen guns and one hundred men, commanded by captain Benjamin Hallowell, had cast anchor in the roads on the 18th, consoled by a small cutter. They had sailed from Madeira five days before, where they had left a vessel of fifty guns, which was expected soon to arrive at Teneriffe. Commodore Englefield who commanded it, had also the general command of this small armament, which was destined for the coast of Africa. These officers, aware of the danger to which sailors are exposed whilst they remain on shore, kept them as much as possible on board; and
never suffered them to quit the ship but when the exigences of the armament required it. The Commodore was resolved to keep strictly to this regulation, during the whole time that he should be stationed on the coast of Africa.

The variation of the needle was found by an average of sixteen observations taken on board, fourteen of the azimuth and two of the ortive amplitude, to be $8^\circ 7' 7''$ E.

The result of two observations taken by Citizen Bertrand, one of the astronomers to the expedition, on the terrace of a house in the town, gave $21^\circ 33' E$.

The observations taken on board appeared more to be confided in than the others, as they agreed with the progressive diminution of the variation which we had observed since our departure from Brest, and with the observations that had been taken long since by different other navigators.

The dip of the needle was now at $62^\circ 25'$. The same needle had pointed $71^\circ 30'$ at Brest, and $72^\circ 50'$ at Paris.

The place where we lay at anchor in the road of Teneriffe was $28^\circ 29' 35''$ N. lat. $18' 86' E$ long.

The thermometer and barometer, observed on board towards noon, varied very little during our stay
stay in this place. The former never rose above 20° two tenths, nor the latter above 28 inches two lines.

The station of St. Croix is a very excellent one, on account of the plentiful supply which it affords of all sorts of European kitchen-vegetables, cabbages excepted, which, though very small, are sold at an exorbitantly high price. Most of the orchard-fruits of Europe are likewise to be met with here, and the same domestic animals as in the ports of France.

Experience had taught us that the sheep of this island do not bear confinement on board so well as ours. The pure air which they have been accustomed to breathe on the mountains where they feed, renders them the more susceptible of injury from the impure air between-decks.

Teneriffe also affords great abundance of dried fish. They particularly carry on an extensive traffic with the species termed bonite.

Those parts of the island upon which the labour of cultivation has been bestowed, are very fertile, as is generally the case in volcanic islands. The internal heat of the earth which forms their basis, exhales towards the surface of the ground a portion of the rain-water which they have imbibed, which produces a remarkably luxuriant vegetation.
On the other hand the too slow decomposition of some of these volcanic stones, and the extreme dryness of some of the mountains, render many parts of the island unfit for cultivation. The action of the fire to which they have been exposed at different periods after long intervals, as is attested by historical records, together with the shelter which they receive from the plants peculiar to those situations, retarding in many places that gradual decomposition which would otherwise have taken place, had they been left entirely bare.

No volcanic eruption had been known in this island, since that which broke out ninety-two years ago, till in the month of May, 1796, a new eruption took place on the south-east side of the peak, as I was informed by Citizen Gicquel, officer of marines, who spent some time at St. Croix on his return in the frigate La Régénérée from the Isle de France.

I shall insert the account which I received of this event from Citizen le Gros, Consul of the French Republic.

"On the 21st day of May, 1796, the inhabitants of St. Croix heard some hollow reiterated sounds, very like the distant report of cannon; in the night-time they felt a slight trembling of the earth,
earth, and on the following morning a volcano was observed to have broken out on the south-east side of the peak. During the first days after its eruption, it appeared to have fifteen mouths, their number was soon reduced to twelve, and at the end of a month only two were to be seen, which threw out with their lava large masses of rock, that often preserved their line of projection for a space of fifteen seconds before they fell to the ground.”

Before our arrival at Teneriffe our vessels had been so encumbered with their stores, that we scarcely knew how to dispose of our crew.
CHAP. II.

We depart from Teneriffe, and set sail for the Cape of Good Hope—Observations—Splendid Appearance of the Surface of the Sea, produced by phosphoric Light—The most general Cause of the Phosphorescence of the Sea-water ascertained—Four of our Sheep which we had brought from Teneriffe are thrown into the Sea—Moderate Temperature of the Atmosphere near the Line—The Variation of the Compass greater on the South than on the North Side of the Equator—Easy Method of rendering stagnated Water fresh—Thick Fog, which causes the Mercury in the Barometer to rise—Lunar Rainbow—Arrival at the Cape of Good Hope.

A very high swell of the sea had prevented us almost two days from getting our provisions on board. We were not ready to set sail till the 23d of October.

We endeavoured at the first dawn to get under way. All our boats had been taken on board the preceding day as soon as we had unmoored; as we wished to take advantage of the land-wind, which blows here almost every morning. It was likewise
likewise necessary that we should put out to sea before the flood-tide, which was expected to set in about half an hour after five.

We held by a cable to the English corvette. I cannot omit this opportunity of commending the polite behaviour of the English captain, who gave us, in the most obliging manner, every assistance that we stood in need of to enable us to get under way. Our Commander on his part had likewise done him every service in his power, when he came to anchor in the roads a few days after our arrival. One of the anchors of the English frigot helped us to heave down, and having spread our sails, we steered off from the coast under a slight breeze, which did not continue long enough for the Esperance to take advantage of it, although she had unfurled her sails a few minutes after our vessel. Carried away by the flood, the force of which had not at first been perceived, she was obliged to cast a small anchor, by which she hauled, in order to keep off from the coast while she endeavoured to stand clear of the vessels about her.

At half after nine o'clock she stood towards us. We then directed our course S. S. E.

At noon we were in 28° 5' 40" N. lat. 18° 39' 40" E. long. At this spot we set the peak of Teneriffe
Teneriffe E. 28° N. and the eastern point of the island of Canary E. 24° S.

We then steered, about one o'clock in the afternoon, S. E. S. with a view to pass between the Cape Verd islands and the main land. We had a pretty fresh east breeze.

About six in the evening the island Gomere bore N. 38° E.

On the 26th, the Esperance told us her longitude, after having enquired to know ours. The great difference between the longitude of our reckoning, and that taken by observation, threw us into some uncertainty, which induced us to bear down two rhomb-lines starboard from our former S. E. S. course; but subsequent observations determined us to resume our first direction. The weather was very fine, and we had nothing to fear from approaching the African coast: besides, we knew from our soundings that it was many leagues distant.

On the following morning we were out of sight of land, which convinced us that the observations taken on board the Esperance were erroneous.

We crossed the Tropic of Cancer about one o'clock in the afternoon, in 20° E. long. The barometer indicated 28 inches 2 4-5ths lines.

The first fish that would bite at the hook of our
our fishermen, was a very fine dorado (coryphaena hyppurus). This was sufficient to put the whole crew in motion; but the fisherman had the mortification of finding only a part of its gills upon his hook, as he had drawn the line too hastily.

Since our departure from Teneriffe the wind had blown pretty steadily from the N. E. point.

A swallow of the common species (hirundo rustica), undoubtedly lately come from Europe, followed us for some time, without lighting upon the vessel; but soon directed its flight right towards the African coast, where it was sure of finding the insects on which it feeds. We were now about 28° N. lat. 22° 30' E. long.

As there was very little wind, we observed a great number of the medusa caravela floating upon the surface of the water. This plant should not be touched unguardedly, as, like many other kinds of sea-nettles, it raises blisters upon the hand, that afterwards become very painful.

The species of remora, known by the name of echineis remora, generally follows the shark, as it finds sufficient nourishment in the excrements of that voracious fish. It does not, however, attach itself so exclusively to the shark as not to follow other large fishes also, and even vessels, to which it fixes itself when it is fatigued with swimming.
In the night we observed that our vessel was followed by a large shoal of dorados. As they swam much faster than we sailed, they often moved in a circular course round our vessel with incredible swiftness. Although the night was very dark, it was easy to follow them with the eye, as they leave a luminous track behind them. This phosphoric light, produced in the agitated water of the sea, appears the more brilliant in proportion to the darkness of the night, and the velocity with which the fishes move; so that we were able to discern their track very distinctly, although they swam several feet below the surface of the water.

30th. We were now in those seas that abound with voracious fishes, such as the bonito, the tunny, and others of the same class, which find plenty of food amongst the different species of fish on which they prey; the principal of which is the flying-fish (*exocetus volitans*, Linn.). The bonitos that followed us were easily caught by our fishermen, though they used no other bait than a bunch of feathers, bound up so as to resemble a flying-fish, within which the hook was concealed.

We had been almost becalmed for some time, but the regular winds began to recover their force. They were again interrupted on the 3d of November by a storm, which continued during the whole
whole night; the next morning they blew as on
the preceding days. On the 6th they left us at
9° 6' N. lat. 21° E. long.

The heat was now excessive, though the ther-
mometer was only 23° above 0 of Reaumur's
scale.

A bird, called by Buffon *goeland noir* (*larus
marinus*, Linn.), having lighted upon one of the
yards, escaped from a sailor, who had climbed up
the mast, in the very instant when he was about
to seize it.

A prodigious number of bonitos followed us
day and night; and it was a matter of great asto-
nishment to us, that they were able to keep up
with us so long without taking any rest.

The *motteux* of Buffon (*motacilla amanthe,
Linn.*), fatigued with its long flight over the sea,
lighted upon our vessel, and suffered itself to be
taken.

We were becalmed for seventeen days in lat.
5° N. We afterwards had storms, followed by
squalls, that varied from E. N. E. to S. S. W.
having veered round by south.

The tempeff-bird (*praeellaria pelagica*, Linn.)
is not so sure an indication of a storm, but that
its appearance is often followed by a calm of se-
veral days duration. It was a pleasing sight to
observe these little birds flying close to the stern
of
of our vessel, in quest of their food, which they find upon the surface of the ocean.

We were mortified to find that the vegetables and fruits, which we had bought at Teneriffe, did not keep, as their corruption was greatly accelerated by the heat and moisture that prevails during the calms of this zone. We had reason to believe that as they had been gathered in a very hot and dry climate, they would have kept much better than those of Europe.

A small shark (*Squalus carcharias*, Linn.) fell a victim to his voraciousness. As soon as they had hauled him on deck, he was immediately cut in pieces, and every one had his share. The shark however is very poor food; for besides the natural abhorrence which the flesh of an animal that devours human bodies must excite, it is very difficult of digestion: but at sea we cannot choose our dishes, and fresh provisions are always preferable to salted.

I found attached to the higher orifice of his stomach a number of worms of the genus *doris* of Linnaeus. They were about an inch and a half in length, and did not easily let go their hold, although the shark was dead. I observed them now and then shoot out the two *tentacula* that belong to the characteristics of this genus.

The situation of the mouth of the shark, under
his long upper jaw, obliges him to turn himself almost round upon his back in order to seize any object above him; so that his white belly, which the transparency of the sea-water renders distinguishable even at a great depth below the surface, points out to the fisherman the exact moment when he ought to draw his line, in order to fasten this voracious fish to his hook.

Nature has amply provided it with the means of securing its prey; for besides several rows of teeth formed in the manner most adapted for penetrating the hardest bodies, the internal part of the mouth is likewise furnished with various asperities that serve to prevent the egress of any substance that it has laid hold of.

Had we been trading to India, we should not have failed to collect a quantity of the fins of this fish, as they are in great request amongst the Chinese, who believe them to be a very powerful aphrodisiac.

When the air was calm the heat was extremely oppressive: the thermometer however stood no higher than 23°; although we were not more than 9° north of the equator. Our longitude was 20° 50' east. It appears that in these parts the thermometer affords a very inadequate standard of the sensible heat of the atmosphere; for though it indicated several degrees lower than what
what we frequently experience in the warm summer weather of Europe, the heat threw us into a most profuse perspiration, which gave rise to very troublesome effervescences of the blood.

Between the tropics, the mercury in the barometer stands at a very uniform height. We never observed it to vary more than an inch and a half, more or less. It generally stood at 28 inches 2 lines, although the atmosphere was often agitated by violent storms, which being generated in the interior of Africa, from the coast of which we were not more than about 300,000 toises distant, were brought over to us by winds from N. E. and E. N. E.

12th. We here caught the fish known among the ichthyologists by the name of ballistes verrucosus. A great number of a small species of whales (souffleurs) swam about our ships, followed in their tardy course by sharks which fed upon their excrements.

A squall from the S. E. gave us intimation of the gales from the same quarter, that prevailed in the distant regions under the equator; though they blow there generally from the N. E. during this season, when the sun remains almost two months within the Tropic of Capricorn.

14th. A shark that had been preceded by a number of the fishes called pilots (gasterosteus duclor, Linn.)
Linn.), was caught by our sailors. Some remoras, that thought themselves in safety as long as they remained fixed to the body of the shark, kept their hold still for a considerable time after the fish had been brought upon deck.

As the weather was excessively hot, and the sea very tranquil, Piron and Saint-Agnan, unable to resist their desire of cooling themselves by bathing, plunged themselves a few hours afterwards into the sea, at the hazard of becoming the prey of another shark.

It had remained calm almost the whole day; but about eight in the evening the skies were covered to the south-east with thick clouds, that portended a violent storm. The night was very dark; and soon a luminous column of immense height was seen to descend from these clouds, and illumine the surface of the water. The scintillation of the sea was for some time interrupted by several intervals, during which it was quite dark; when all of a sudden the whole surface of the sea appeared covered with a sheet of fire, extending in our direction. This sheet was pushed along by a very high gale, which raised the waves to a great pitch; and we saw ourselves surrounded with a sea of flames, which afforded one of the most brilliant spectacles in nature. This phenomenon very soon disappeared; but the
Sea appeared during the whole night much more luminous than usual wherever it was agitated, particularly at the wake of the ship and the top of the waves.

The force of the gale had obliged us to strike our top-sails, and even to bear down, for fear of being taken a-back.

The heat had been very oppressive during the whole day: We were now sailing off the immense gulph formed by the coasts of upper Guinea, the shores of which extend almost 1,500,000 toises to the eastward.

The sea is much more phosphoric in the vicinity of the coasts situated between the tropics, than any where else, because those animals, upon which its phosphorescence depends, abound there much more than in any other part of the ocean: a fact, which I have had opportunity of remarking in parts of the ocean very distant from each other. I shall enter into some investigation of this phenomenon.

As we had this gulph under our lee, the currents had carried over to us many of the luminous substances with which it abounds; but it required the concurrence of another circumstance in order to produce so vivid a light as we witnessed. The clouds that hung over the quarter from whence the wind arose, had imparted to the atmosphere
atmosphere a superabundance of electricity, which was one of the principal agents in producing the luminosity of the water.

The electric state of the atmosphere was proved to me by the unusual repulsion between the two balls of my electrometer.

15th. A slight breeze from the south-east led us to hope that we should soon be delivered from the calms, that prevail to a greater extent in these situations than in any other part of the ocean. These differences are particularly observable upon a voyage to India, and appear to depend chiefly upon the vicinity of the African coast, to which ships, failing from Europe to the Cape, approach much nearer, than those which fail from the Cape to Europe: thus the former voyages generally require a longer space of time to be accomplished than the latter.

Many able seamen think it advisable to cross the Line much further to the eastward than is commonly done.

The calms which prevail northward of the equator depend upon the configuration of the African coast, which projects, at the distance of a few degrees from the Line, nearly 1,500,000 toises eastward; whilst the great distance at which one fails from the coast, after having crossed the equator, prevents the winds, generally prevalent...
in this part of the ocean, from being modified by the land breezes.

I had kept some bottles of the sea-water, which I had collected the night before, during its phosphorescence, for the purpose of examining the small luminous substances which occasion this phenomenon. Having inclosed some of this water in a vial, I agitated it in the dark, and presently observed luminous globules arising within it, which appeared perfectly similar to those that are seen in the agitated water of the ocean. I tried the simple experiment of separating these particles from the water, in order to learn whether it would still retain its phosphorescent quality. Upon filtrating it, by means of a piece of blotting-paper, a number of minute transparent particles, gelatinous in their consistence, and of a globular form, were left upon the filter. The water had now entirely lost its phosphorescent quality, which I again restored to it by mixing it with those particles. If these small animalcules be exposed for any considerable time to the air, they lose their phosphorescent properties.

I have frequently repeated the same experiment upon water collected in different parts of the ocean, and have uniformly found it to contain the same sort of animalcule, which I therefore consider to be the principal cause of the phosphorescence.
phorescence of the sea. Other substances, however, possess likewise the property of giving this appearance to the sea; for many species of the crab, and other marine insects of considerable bulk, sometimes ascend from its bottom, and give a luminous appearance to the surface. I have seen some of these phosphoric animals of more than half a foot in length, but they were always accompanied by the small animalcula above mentioned.

We were informed to-day that they had thrown into the sea, from on board the Esperance, four of the sheep they had brought with them from Teneriffe, because some persons had imagined that they had observed upon them symptoms of that disease which our nation is accused of having imported into Europe, from America. The monks of the island from whence they had brought the sheep, had to suffer many severe sarcasms upon this occasion; though I believe them to have been destitute of foundation; for I have little doubt, that if the animals had been subjected to a more accurate examination, the crew would not have been deprived of so considerable a part of their live stock.

Breezes from the S. S. E., which began to blow on the 21st of November, we being in lat. 4° 31' long. 18° 30' W. at length put an end to the
the calms, which at this period of the year are generally experienced several degrees further to the south, before one arrives at the track of the regular winds.

The bird known among ornithologists by the name of *pelecanus aquilus* excited our admiration. We observed two of them who, whilst they hovered at an immense height, espied their prey in the water, expecting the moment when it should appear near enough to the surface for them to dart down and seize it.

The reason why these birds hover at such a prodigious height above the ocean, is, undoubtedly, that they may take in a more extensive view of its surface; but it is astonishing that they are able at that distance to perceive the small fishes upon which they generally feed. It is a subject well worthy to be investigated by natural philosophers, whether this piercing vision depends more upon the sensibility of the retina, or (as I rather suppose it does), upon the disposition of the humours of their eye.

The pelican is known to be a great destroyer of the flying-fish. As soon as it espies one of these fishes, it descend from the more elevated regions of the atmosphere, and remains hovering about fifty toises above the surface of the water, in order to seize its prey whenever it quits the sea.
All the motions of the pelican are conducted with admirable dexterity: it does not dart head foremost, like most other birds that seek their food in the water; but placing its feet and neck horizontally and level with each other, it strikes the air above it with its pinions, and then laying them crossways upon its back, so as to afford the least possible resistance to the atmosphere, darts down upon its prey, and seizes it almost the instant it has left the water.

We all of us pitied the poor flying-fish when we observed the astonishing skill of its enemy, which very seldom misses its aim. As the flying-fish raises itself but to a very small distance from the surface of the sea, the pelican would run the risk of falling into the water, did it not possess the art of breaking its fall by suddenly expanding its wings, so as to be immediately able to mount again in quest of another victim.

Though nature has given the flying-fish the power of living both in the water and in the air, it is very difficult for them to escape from their numerous enemies. If they evade the pursuit of the bonitos and dorados, by quitting the water, the pelican awaits them in the air. Some of them, reduced to this dilemma, were obliged to light upon our vessel.

I found in the stomachs of several bonitos a number
number of worms, that ought to be classed among the genus *fasciola* of Linnaeus, though their inferior extremity, which is almost cylindrical, has a very distinguishable bulb. They are about four lines in length, and terminate in a tube which composes about half their dimensions.

The winds from the south and south-east continued to blow with such obstinacy, that we were not able to cross the Line till in the night of the 28th, about eleven o'clock, in 26° E. long. though our design had been to cross it about eight or ten degrees farther eastward.

These south and south-east winds are not common in these latitudes at this time of the year; for the sun being already considerably advanced in the Tropic of Capricorn, the regular winds generally veer round to the east. The calms, in consequence of which we had got every day 6 or 8' further northward, and the gales from the south and south-east, were the causes of our being so long detained by these winds.

Near as we were to the Equator, the thermometer, as observed for the last eight days, had not stood higher than 21 or 22°. It was a matter of surprise to us, that being so near the Line, the thermometer did not indicate a higher degree of heat; but besides general causes, such as the absorption of the rays of the sun by the water of the
the ocean, and the comparatively inferior density of the water, together with the evaporation that takes place from it, which prevent an equal degree of heat being communicated to the atmosphere with what it acquires from the land, we had for several days had a slight breeze which contributed not a little to cool the air.

The sailors have a custom of ducking persons who cross the Line for the first time, with the sea-water. This operation is performed by pouring several pails of water over their heads; and is frequently conducted in such a manner, as to afford a great deal of merriment to those who know themselves exempted from being the subjects of it. One of the sailors, who calls himself the Good Man of the Line, lets himself down from the main-top, with a large beard of tow fastened to his chin, and presides at this nautical diversion.

Our Commander, apprehensive that this sort of cold bathing might not agree very well with some of us, forbade its being performed upon any of the passengers.

On the 29th of November, Beaumé's aërometer for salts gave me 3° 4-5ths. We were then half a degree south of the Line.

The currents carried us somewhat eastward of our former course. The principal cause of the
the different currents in the wide ocean is known to arise from the action of the winds. We had every reason to expect a long passage. The Esperance, however, kept her luff much better than our vessel. We were apprehensive lest our want of water might put us under the necessity of steering for the coast of Brazil. This circumstance would have been the more embarrassing to us, as it would have deranged the whole plan of our expedition; for the investigations we intended to make in several of the countries that we were about to visit, were to be determined by the season of the year.

On the 17th of December we crossed the Tropic of Capricorn, in 28° W. long.

On board the Esperance they often caught more than a hundred bonitoes in the course of a day, whilst the most dexterous fishermen in our vessel never took more than ten in the same space of time, and very seldom as many. It was however a matter of great consequence to the health of the crew, that they should be supplied with fresh provisions.

On the 18th of December we were in lat. 25° 20' S. and long. 28° 42' W. when the thermometer observed at noon indicated only 19° above 0, although the sun was very near our zenith: before sun-rise it had been 17½°. In the night-time
time the cold had been so considerable as to oblige our sailors to take to their woollen clothes.

We had thought ourselves sure of meeting with easterly gales as we approached the Brazilian coast: they, however, blew from the east; but having drawn aft, we were enabled to keep our sails pretty full for the space of a fortnight, till we were in 28° S. lat. and 24° W. long.

We might have expected in this latitude to meet with favourable winds for steering towards the Cape of Good Hope; but all the variation that took place was still more to our disadvantage.

On the 28th of December we had still S. E. winds, though we were already beyond 29½° S. lat. The heat of the sun having been for several months at its greatest height in this hemisphere, had changed the direction of the regular winds.

The length of our passage had reduced our allowance of water to one bottle a day.

As soon as the winds had veered from N. E. to N. the currents, which bore till then to the east, became scarcely perceptible.

Though we were at so great a distance from the Cape of Good Hope, we observed a great number of albatrosses (diomedea exulans).

It is a remarkable circumstance, that the variation of the magnetic needle is much greater to the south of the Line, than it is to the north;
for between 14° N. lat. and the Equator, in the
space contained between 23° and 26° W. long.
the difference had not been more than 3°, or
from 14° to 11°; whilst in the same extent of
south-latitude, between 26° and 30° W. long.
the compass varied eight degrees to the east,
or from 11° to 3°. Might not the vicinity of
the coast of Brazil be one of the principal causes
of this difference?

The smallest variation observed was that of 1°
50', in 25° S. lat. and 29° W. long. It cannot
be doubted that the change of situation with
respect to longitude has a much greater influence
upon the variation of the needle, than change of
latitude. The variation increased sensibly in
proportion as we advanced farther eastward.

One of our officers who was taking the dis-
tances between the sun and moon, in a very in-
commodious situation, with a copper sextant
made by Dollond, the radius of which was a foot
in length, discovered a cause productive of error in
the calculations, which one should hardly have
suspected. The radii of this instrument, though
very heavy, were still so slender as to bend when
it was pressed with any degree of force against
the breast, whereby the parallelism of the specula
was deranged. The same effect does not take
place with sextants made of wood, for their radii,
being much stronger than those of copper, do not yield to that degree of pressure which bends the others.

This source of error affords an additional reason why mariners ought to give the preference to the circle of reflexion, invented by Citizen Borda. The facility with which any errors that may arise from the graduation, are rectified by cross observations, in the use of this instrument, gives it a very great superiority over all others.

I regret that this valuable instrument, though so easy in its application, is not more generally in use. Each of our officers possessed one of them, and during the course of the expedition every one learnt to use it with certainty.

With a little practice an observer may take the longitude within 10, or 15,000 toises; and there is reason to believe, that when the lunar tables shall have attained a greater degree of perfection, the observations will approximate still nearer to the truth.

Though the plants which I had collected at Teneriffe were very dry when we failed from that island, they were become much damaged by the moisture which they had imbibed, during the time that we were between the Tropics, particularly at the lower part of the leaves, where the absorbent
absorbent vessels of the plant are known to abound more than in any other of its parts.

The water held in a state of solution by the atmosphere, in consequence of the heat which it acquires from the perpendicular rays of the sun, is so much greater in quantity than what it can retain in situations not exposed to an equal degree of heat, that every thing that is not exposed to the direct rays of the sun, becomes covered with a great degree of moisture; so that it is very difficult to preserve instruments of iron, or even of the most highly polished steel, from the rust.

During the whole period of time that we were sailing round the Tropics, the barometer had not stood higher than 28 inches 4 lines, nor lower than 28 inches 1 1-10th lines.

We knew very well that our provision of water could not retain its freshness in the extreme heat of this climate; but one should hardly have imagined, that whilst we had means on board of restoring its purity, they should not have been put effectually in practice, before distributing to the crew their daily allowance.

Water that is kept for a long time on board, undergoes the same sort of decomposition which takes place in stagnant pools; and this process is considerably accelerated by the influence of a hot
hot climate. A great quantity of inflammable air is then disengaged from it; so that a person who goes into the hold where it is stowed, runs the hazard of being suffocated. This, however, is an accident that very rarely happens, as a part of the noxious vapours are discharged by the passage leading into the hold. Nevertheless, these vapours frequently give rise to nervous fevers amongst the crew, the malignity of which, is in proportion to the heat by which the decomposition of the water is effected.

As this gas, the specific gravity of which was first determined by Priestley, is considerably lighter than atmospheric air, and has likewise very little attraction for the water; it is very easily separated, so as to restore water to its former purity; nothing more being necessary than to agitate the fluid for the space of a quarter of an hour.

We had a machine on board which was perfectly adapted to this purpose. It consisted of a large bucket, about five cubic feet in capacity, which being filled to about two-thirds with water, four large flat pieces of iron were turned round in the middle of the vessel, by means of a handle and balance-wheel. By this operation the water in the bucket was violently agitated, and whilst the inflammable air, with which it had been impregnated, was disengaged, it absorbed a quantity
quantity of pure air from the atmosphere, to supply the place of that which it had lost; so that, putrid as it had been before, it soon recovered its original freshness.

This process, so easy in its execution, affords a satisfactory answer to the many enquiries that have been made concerning the means employed by mariners to render water potable, after it has lost this quality by being kept long in the ship.

It will scarcely be credited, that though we were able to purify the water according to the simple method just described, that which was distributed in the vessel often stunk nearly as much as when it was first brought out of the hold. The cause of this neglect arose from the circumstance, that the officer, who had the charge of inspecting the operation, usually committed it to one of the sailors, who, soon tired with turning the handle, delivered it out before it had become potable. It was very justly observed on board, that it would have been much better had this charge been committed to the surgeon, as the health of the crew depended so much upon its being well performed. It was nevertheless left in the hands of the officer of the watch.

On the 29th of December, the sky being very clear, the thermometer indicated 17° 8-10ths, and the barometer 28 inches 39-10ths lines; when
when a breeze suddenly springing up from N.N.E. brought with it a thick fog, which concealed the sun from our view for the space of a quarter of an hour. It is very remarkable that the mercury in the barometer, instead of falling in consequence of this change of weather, stood a line and a half higher than before, during the whole time that the fog continued. I dare not hazard any conjecture of my own in order to account for this phenomenon, which will appear the more astonishing to persons conversant in natural philosophy, as this circumstance ought to have diminished the elasticity of the air instead of augmenting it: besides, there was no reason to believe that the fog was occasioned by the explosion of any volcano.

On the 3d of January we enjoyed the spectacle of a lunar rainbow. This planet was encompassed, at ten o'clock in the evening, with two concentric circles, that presented all the colours of the solar rainbow in reversed order. The largest of the circles did not occupy more than five degrees in the sky.

As this phenomenon, produced by the decomposition of the rays of the moon, appeared between the planet and us, the prismatical colours naturally presented themselves in an order the reverse of what takes place in the solar rainbow; because
because in the latter case the spectator is situated between the rainbow and the sun. Thus the smaller circle was terminated at its interior margin by the red colour, and at its exterior by the violet; whilst the largest exhibited the red at its exterior, and the violet at its interior.

We were then in lat. 32° 42' S. long. 7° E.

On the 7th of January we passed under the meridian of Paris, in 33° S. lat.

Having plunged the aërometer of Beaumé in the sea-water, in order to determine its specific gravity, it indicated 3° 4-5ths. I had obtained the same result from a similar experiment which I made near the Equator. Hence it appears that the saltness of the sea does not perceptibly vary in different parts of the ocean, though very distant from each other, and heated to very different degrees of temperature by the rays of the sun.

On the 9th, we began to exercise the crews of both ships in shooting at a mark. A prize of small value was the reward of those who hit an object fixed to one of the fore-sail booms. We were pleased to observe that most of our men took very good aim, though they had never been accustomed to the use of fire-arms. It was a matter of consequence, in an expedition like ours, in the course of which we might sometimes be under the necessity of defending ourselves against the
the attempts of the savages, that every one of our company should understand the use of such arms as we had on board.

The captain of the Esperance having ordered an half of a very fine tunny to be tied to a buoy and thrown into the water, as a present to our Commander; it did not float near enough to our vessel to enable us to take it up, when one of the sailors plunged into the sea in order to swim after it, although it was known that a shark had been caught that very morning by the crew of the Esperance, and the calmness of the weather afforded an additional ground of apprehension, lest one of our best seamen might fall a prey to another of these animals.

Notwithstanding we had already reached the thirty-third degree of south lat., being in $5^\circ$ E. long., the bonitos still continued to follow us in as numerous shoals as ever; though they are seldom known to abound at so high a degree of latitude. The north winds were probably the occasion of their leaving their usual haunts.

I must do the crew of our ships the justice to remark, that if they were less skilled in fishing than the crew of the Esperance, they also laboured under certain disadvantages which the others did not. It was the business of the boatswain to furnish the sailors with lines, which ours distri-
buted throughout the whole expedition with so much parsimony, that the sailors lost all their inclination for this occupation. The inspecting officer ought to have apprised him of the pernicious consequences resulting from this mistaken piece of economy; but he neglected to do it.

The animal known by the name of *medusa velella*, was induced, by the tranquil state of the sea, to rise to the surface of the water, where we observed large numbers of this species. They were precisely similar to those which I have often met with in the Mediterranean, where the sailors consider them very delicious eating.

The success of our expedition depended very much upon the ships being such as did not water; we had, however, scarcely left the roads of Brest, when we were obliged to pump the vessels. As our ship made three-fourths of an inch water every hour, we were under the necessity of pumping it twice every day. This precaution was the more indispensable, as the water had already attacked our salt provisions, the preservation of which was an object of the greatest importance on a voyage like ours. Very fortunately, that which got into the hold did not penetrate far.

The space between decks was so much lumbered, that it lasted several months before we could find out the spot where it leaked, which at
last was discovered to be behind one of the knees. Upon lightening the vessel, we found that one of the tree-nails had been forgotten, and the place where it ought to have been inserted smeared over with tar. Having bolted it properly, we were enabled to keep the ship dry.

The albatrosses of the Cape of Good Hope, which began to appear in large flocks, shewed us that we were approaching to the southern extremity of Africa. We descried the land about eight o'clock in the morning of the 16th of January. Table Bay was then about 20,000 toises distant from us.

The currents, which had made us fall off so much from our course whilst we were in the track of the regular winds, having fortunately taken an opposite direction where we met with the variable ones; what we had lost to the west was very nearly made up to us by what we gained to the east, as appeared when we made the land of the Cape of Good Hope. It is evident that the tendency of the seas to preserve the level, some few irregularities proceeding from the variable winds excepted, ought to induce mariners, in the parts where these winds prevail, to bear down to the east in proportion as the general winds determine the currents to the west.

We had another indication of our being near the
the land in the difference of colour of the water, arising from the shallowness of its bottom.

Some seals, of the species called by Linnaeus *phoca pusilla*, approached very near to our vessel in quest of their food amongst the large masses of *fucus pyriformis*, which floated upon the water. These animals often escaped from our sailors by taking several successive leaps over the water: This they perform by placing their hinder paws together, so as to resemble the broad tail of a fish, and act with considerable resistance against the surface of the water, over which they bound like a nimble quadruped over a level plain.

We fell a little to leeward of the mouth of Table Bay, which gave us hopes of coming to anchor in the course of the day. It was not, however, the most favourable weather for making the land; for the day was very rainy, and the coast often concealed by a thick fog from our view.

About seven in the evening we were between 7 and 8,000 toises from the mountain of Hout Bay, which bore E. 3° 45' N. The foreland of the Cape bore N. N. E. The Lion's-head E. 3° N. Our soundings gave us here the depth of water at seventy toises over a bottom of coral.

The sea appeared very phosphorescent throughout the whole night which we spent off the coast: A great number of luminous specks were observable.
able wherever the water was agitated. This phosphorescence differed in no other respect from that usually observed at sea, than in its greater intensity, proceeding from the superabundance of phosphoric globules. Such phosphoric substances abound much more in the vicinity of the land, than in the open sea at the same latitude; as I have remarked upon a former occasion.

A slight S. E. breeze enabled us in the afternoon of the following day to direct our course towards the mouth of Table Bay. As soon as it blew a little fresher, we steered with full sails towards the Pointe des Pendus, ranging very near to the coast, our depth according to the soundings being pretty uniformly about five toises.

About half an hour after five we cast anchor in a bottom of muddy grey sand, at the depth of about twenty-four feet, and distant 5,130 toises from the shore. The principal steeple in the town bore E. 38° S. The flag upon the Croupe de Lion E. 30° N. The flag at the northernmost side of the fort E. 48° N. The Island Robben N. 1° W.

We had not a single sick man on board, although the length of our passage had reduced us to a very scanty daily allowance of water; but we had endeavoured to compensate for the want of it by a copious use of various antiscorbutic re-
medicines. A very wholesome and pleasant kind of punch, made of brandy, vinegar, sugar and water, had been daily distributed amongst our crew towards the latter end of the passage. The ships were fumigated every day, and we were very careful that the sailors should change their clothes whenever they had got wet. It was a satisfaction to us to find that these precautions had not been taken in vain.

CHAP. III.

Abode at the Cape of Good Hope—Depositions of two French Captains, shewing that they had been informed at Batavia by Commodore Hunter of his having seen some Persons at the Admiralty Islands, dressed in the Uniforms of the French Marine—Captain Bligh's Voyage from England in Quest of the Bread-fruit in the Society Islands—Violent Gales from the South East—Local Cause of their Violence—Slave-trade—Excursions amongst the Mountains in the Vicinity of the Town—Journey of the Fiscal—Voyage to Fransche Hoek.

TWO officers of health came on board from the Cape Town, in order to learn whether any of our crew were infected with contagious disorders.
disorders. The small-pox is the disease most dreaded by the inhabitants; for not being endemic, it occasions here, as well as in every part of India, the most dreadful ravages, whenever it is imported amongst them from foreign countries.

The master of a merchant vessel from Bordeaux, which had arrived here a few days before us, immediately came to acquaint us that the Commander of the naval forces at Île de France, having received some information relative to the fate of La Pérouse, had dispatched a frigate to the Cape, in order to communicate his intelligence to the Commander of the expedition sent in search of that unfortunate navigator. The frigate had failed from Île de France a few days before our arrival.

Our Commander Dentrecasteaux dispatched an officer to the Governor of the Cape to arrange the ceremonial of the salute. This officer received from the Chargé d'Affaires of France the dispatches which Citizen Saint-Felix, Commander of our naval forces in the Indian seas, had sent to Dentrecasteaux by the frigate Atalante, Captain Bolle, which had immediately failed back for Île de France.

I shall here insert the letter addressed to our Commander, with the depositions of two masters of merchant vessels, who were at Batavia during the
the stay which Commodore Hunter made at that place, upon his return from Botany Bay in a Dutch vessel, after he had been shipwrecked off Norfolk island.

Letter from Citizen Saint-Felix, Commander of the Naval Forces of France in the Indian Seas, to General De Vintrescaux.

"I learn from private correspondence that you do not purpose to touch at Isle de France till on your return from the important expedition in which you are engaged. Disappointed in the hope, with which I had flattered myself, of having the honour to converse with you, I hasten to dispatch, in order that they may find you at the Cape of Good Hope, two reports relative to the object of your mission, which I have lately received from the masters of two French vessels arrived here from Batavia. You will thereby be informed of the particulars, how a Dutch vessel, having on board Commodore Hunter of the Sirius English frigate, together with his ship's company, discovered near the Admiralty Islands, in the South Sea, several persons clothed in European manufactures, some of which, in particular, appeared to be French uniforms. You will also be informed that the Commodore did not doubt that these
these were remains of the shipwreck suffered by M. de la Pérouse, whom he had often seen at Botany Bay.

"I conceived that the communication of these reports must interest you; and they appeared to me of so important a nature, that I resolved to transmit them directly to you by a frigate, which I have dispatched to the Cape for that express purpose. Captain Bolle, who commands the vessel, will leave the papers in the hands of our Chargé d'Affaires, in case he should not meet you there; in order that they may be delivered to you immediately upon your arrival.

Though I have received no official directions relative to your expedition, that authorize me to send this frigate upon its present destination, yet I have no doubt that the step I have taken will meet with the approbation of his Majesty, both when I consider the interest of the public and the sentiments of my own heart. It was reserved for you to acquire a claim upon the gratitude of the whole French nation, by accepting the command of an expedition which confers equal honour upon the Sovereign who has ordered it, and the Commander to whom its execution is intrusted. In every part of the globe that you may visit, you shall ever be attended by my fervent wishes.
wishes for your success, and the inviolable and perfect attachment with which I am, &c.

(Signed) Saint-Felix.

Isle de France, 9th Nov. 1791.

Report delivered to Saint-Felix, Commander of the Naval Forces of the French Nation in the Indian Seas, by Captain Préaudet, Master of the Jason, from Batavia.

The Sirius English frigate, commanded by Commodore Hunter, and bound for New Holland, was cast away off Norfolk Island in the South Sea, towards the end of the year 1790. The ship's company were taken on board a floop that accompanied the frigate, and carried to Botany Bay, where Commodore Philips engaged a small Dutch vessel to convey the shipwrecked crew, together with their commander, to England.

Having failed from Botany Bay in this vessel, with an intent to touch at Batavia, they were carried by contrary winds and the force of the currents as far eastward as 167° E. long. meridian of Greenwich. Wishing to pass through the Straits of St. George, they came within sight of the Admiralty Islands, situated in 147° E. long. 3° 25' S. lat. Near to the most easterly of these islands
islands they observed several boats, amongst the crews of which there were many persons who wore European stuffs and pieces of cloth in their dress; they even distinguished some who were clothed in the uniform of the French Marine. These people hung out the white flag as a signal for the English to approach; but though Commodore Hunter was very desirous of doing it, he found it impracticable, on account of the contrary currents and winds, and the danger to which the numerous shoals would have exposed them.

Commodore Hunter had often seen M. de la Pérouse at Botany Bay, and lived upon terms of intimacy with him. He had learnt from him that his intention was to pass through the Straits of St. George, after leaving Botany Bay, and from thence to direct his course to the northward. He does not doubt that the Astrolabe and Bouffole were cast away upon the above-mentioned islands, in consequence of the calms and strong currents that prevail in those parts. He has informed me that he has been carried by them six hundred miles to the eastward in the space of ten days; as he knew from repeated observations of the longitude, from the time-keepers, and from the bearings of the land. In a word, Commodore Hunter, whom I saw at Batavia in the course of my last voyage, appeared to me to be
he fully persuaded that the European dresses, which he saw in the boats from the Admiralty Islands, were collected from the wrecks of the vessels formerly under the command of La Pérouse.

Commodore Hunter is at present upon his return home to England, from whence he will probably transmit a more circumstantial account of this affair to France.

From his own experience in approaching the Admiralty Islands, the English Commander thinks that any vessel intending to sail thither ought to endeavour to get early into its latitude, in order to avoid being carried away by the currents, which set to the east with prodigious strength.

(Signed) Preaudet, Master of the Jason.

Ile de France, 6th Nov. 1791.

Report delivered by Pierre Magon Lépinay, Master of the Maria Helena, from Batavia, to Saint-Felix, Commander of the Naval Forces of France in the Indian Seas.

The commander and officers of the Sirius English frigate, after being shipwrecked off Norfolk Island, were carried to Botany Bay, from whence they failed in a small Dutch vessel for Batavia, where they arrived towards the latter end.
end of September, in the present year, after a passage of about six months.

A day or two after they had weathered the Straits of St. George, they found themselves as soon as it dawned within sight of two of the Admiralty Islands, which were very near them; they immediately founded, but could not reach the bottom.

They afterwards observed two canoes that contained about twelve men each, rowing from the islands towards them; but though they would not come on board the vessel, they however approached very near to it. There was then very little wind blowing. The vessel was exposed to a current which drove it off from the land: at any rate, the Dutch captain had no inclination to approach nearer to the shore. It was observed that two of the men in the canoes had sword-belts similar to those worn by European officers; they made signs as if they wished to have their beards shaved, and many of them had pieces of red and blue cloth about their dress, which proved that they had had some communication with Europeans. As Captain Hunter, Commander of the Sirius, had been informed at Botany Bay by La Pérouse himself, that his intention was to pass the Straits of St. George; all the officers of that frigate were of opinion that they had thus unexpectedly
expectedly discovered the islands upon which he was cast away.

I, the underwritten, certify that the above narrative is conformable to what I have collected from different conversations with the officers of the Sirius, who had arrived at Batavia after the shipwreck of that frigate, in a small Dutch vessel, with which I was in company during the month of October.

(Signed) MAGON LEPINAY.

Isle de France, 31st Oct. 1791.

As Commodore Hunter was at the Cape of Good Hope, on his return from Batavia to England, at the moment when we arrived there; we had reason to expect that we should receive from him every possible information concerning what he had seen at the Admiralty Islands; but were surprized to hear that he had failed from the Cape two hours after we had cast anchor. He was probably well acquainted with the object of our expedition; for we were expected at the Cape, and our Commander's flag must have convinced him that these were the ships sent in search of La Pérouse. It appeared very astonishing to us, that he had not attempted to convey to us even the scanty information which Préaudet and Magon Lépinay had collected from himself and his
his officers at Batavia. Our amazement was still greater, when we understood that Commodore Hunter had not only not suffered any thing to transpire during his stay at the Cape, which could give ground to believe that he had seen savages dressed in the uniforms of the French marines, but that he had even expressly declared to several of the members of the regency, and in particular to his friend Mr. Gordon, that he knew nothing of the facts reported upon the arrival of the Atalante: neither was there any reason to suspect that the reports left at the Cape, by Captain Bolle, came from Commodore Hunter himself.

Captain Bligh, Commander of the English sloop Providence, which had been fitted out for the purpose of searching for the bread-fruit tree in the Society Islands, had cast anchor in Table-bay shortly after the Atalante had failed from thence. It appeared that Captain Bligh had heard nothing from Commodore Hunter relative to the depositions of the two French captains; but, that upon the information communicated to him by persons who had spoken with the captain of the Atalante, he had assured Colonel Gordon, that when he returned to the Society Islands, he would make what enquiries he was able in those parts where La Pérouse was reported to have been cast away,
away, and endeavour to save some of the remains of that unfortunate expedition.

This was the second expedition which Captain Bligh had undertaken in quest of the bread-fruit tree. In the course of the first voyage which he made for the purpose of procuring this valuable tree to the West Indian settlements of the English, he had been set on shore in consequence of a mutiny amongst the crew, of which he published an account after his return to England.

We learnt that the Pandora English frigate, commanded by Captain Edwards, had since been at the Society Islands, where they had seized fourteen of the mutineers. Four of them afterwards made their escape when the vessel was run aground off Norfolk Island. The ringleader of the mutineers, Christiaan, who had been master of the vessel under the command of Captain Bligh, had escaped with nine others to another island, and carried several of the natives with him. One of the officers of the Pandora lately arrived at the Cape, assured us that Bligh had behaved very ill to Christiaan, and that an abuse of authority on the side of the captain was the cause of all his subsequent misfortunes. Christiaan, though master of the vessel, had been maltreated, according to Captain Bligh's orders, as if he had been
been a common sailor of the lowest rank. If this be the fact, Captain Bligh disguises the truth when he asserts, that he had always treated him with the greatest liberality.

There were at that time eighteen ships lying at anchor at the Cape, of which twelve were Dutch, two French, two American, and two English.

At sun-rise we saluted the place with thirteen guns, which it returned with the same number.

18th. At nine o'clock the Commander of our expedition went on shore; upon which the town saluted him with fifteen guns, which we returned gun for gun. The Governor had sent several carriages, and a large company of musicians to attend General Dentrecasteaux at the place where he landed. Accompanied by the musicians, playing upon their instruments in a very boistrous manner, he went with some of his officers to wait upon the members of the regency, who received him in a full assembly of the council, and soon after returned his visit, at the house of the Chargé d'Affaires of France, where he lodged.

The greater part of our officers took lodgings in different houses of the town. The Dutch inhabitants at the Cape are known to be very fond of lodging strangers at their houses. Their common price is a piastré a day. I took a lodging, together
together with some of my travelling companions, at the house of a M. de Lettre.

19th. The summit of the Table Mountain was hid in thick clouds, which at this season of the year is a certain prognostic of high winds from the south-east, that generally continue for two or three days. The gales were this time so violent, that during the whole time they prevailed no vessel of the size of a sloop dare venture to approach the shore.

Though the clouds appeared immovably attached to the top of the mountain, even when the winds blew with their greatest violence, they were, in fact, perpetually replaced by others; but the force with which they were driven along, after their separation from the mountain, diminishing their cohesion, they were soon dissipated in the atmosphere. We often observed large masses of these clouds, which as soon as they were detached from the summit, immediately disappeared.

These violent gales from the south-east, which have often been noticed by travellers, appeared to me to proceed from the nature of the coast, which forms a very high ridge from the Cape Town as far as to the mouth of False Bay, and acts as a barrier, preventing the south-east winds from passing beyond it. Whenever these winds get into
into False Bay, it can only happen in consequence of their having surmounted this obstacle which opposes them at the southern extremity of Africa. The dilatation of the lower column of air is so much impeded by the compression which it suffers, in its ascent towards the summit of this ridge, from the weight of the superincumbent column, that, whenever it has passed these heights, the reaction of its elasticity is proportionate to the diminution of the resistance before opposed to its expansion. Its impetuosity is then such as frequently to loosen ships lying in the road from their anchors, and set them adrift.

The violence of these winds is the greatest where they descend along the declivity of these mountains: in the interior of the country situated at a small distance to the eastward, on the contrary, they are very moderate; as I have had occasion to remark in several excursions which I made from the town.

The clouds, with which the summit of the ridge is at such times covered, are naturally produced from the enormous mass of air, which, after becoming surcharged with moisture during its passage over a vast extent of ocean, when it ascends into the higher regions of the atmosphere, deposits, in the form of clouds, the superabundant water which, on account of the change of

\[ H_2 \] temperature,
temperature, it can no longer retain in a state of solution.

In the course of the night, the long boat of the Esperance was torn by the gale from her stern, and lost. To supply its place, a sort of light vessel used in the whale-fishery, was purchased of an American ship.

20th. Though the south-east wind continued to blow with great violence, I made an excursion in the neighbourhood of the town, where I found, in great abundance, two species of the chironia, termed C. trinervia and C. dendroides. The gorteria ciliaris likewise grew at the foot of the mountains. The beautiful shrub, known by the name of brunéa palacea, adorned the rising grounds. No insects, of course, could be seen whilst the winds blew with such violence.

I took a view of the Company's garden, of which many travellers speak in terms of enthusiastic admiration. It is, nevertheless, nothing more than an immense inclosure, which contains some very fine oaks. Several square plots of ground hedged round with myrtles, are planted with kitchen-vegetables; but very few curious plants are to be seen there. They also contain several of the orchard-trees of Europe. I observed some bananas, the leaves of which had been torn into slender strips by the wind.
The *falco serpentarius* of Linnaeus I saw very tame in a house belonging to the Governor.

The menagery situated, at the extremity of this garden, contained but a very small number of uncommon animals, the chief of which were the ostrich, the zebra, the porcupine, the jackal, and several birds; amongst others, the bald-headed curlieu of Buffon, (*tentalis calvus*, Linn.)

The gales were less violent in the evening, and gave us hopes of fine weather.

A vessel employed in the slave-trade lay at anchor in the road. It had lately arrived from Mozambique, and its cargo of four hundred negroes were, for the present, on shore. It was a most melancholy spectacle, to behold these miserable wretches, the greater part of whom were already afflicted with the scurvy, after a very short passage, crowded into three narrow rooms, from whence they were shortly to be carried on board, doomed to waste their lives in supporting the luxury of some wealthy American. The ship had been trading with countries where dogs are in great request; and these dealers in human lives did not scruple to avow that they often purchased two or three blacks for one handsome dog.

On the 22d, I spent the day in examining the Lion's Mountain. The foil of this mountain, which derives its name from the appearance which...
it presents when seen at a distance by sea, is very unfavourable to vegetation. It is almost everywhere covered, even as far as the sea-side, with hard steatites of a greyish colour, and so barren that I carried home with me but very few specimens of plants. On the following day I visited the Devil's Mountain. It well deserves its appellation, on account of the violence of the south-east winds, which is much greater at the declivity of this mountain, than in any other part of the country. The delightful vale, which separates this mountain from the Lion's Mountain, is adorned with the beautiful species of the protea, named by Linn. *protea argentea*, the tufted tops of which resist the violent blasts of wind from the surrounding mountains. The leaves of this tree are covered with a sort of down, which grows the thickest on the parts most exposed to the wind. This circumstance may here be remarked in most of the plants liable to be beaten by the winds, which renders it probable, that their down serves them as a defence from the injury they might otherwise receive from them.

The fertility of this valley afforded a remarkable contrast with the barrenness of the Lion's Mountain. The vegetable kingdom appeared here in its highest luxuriance. Where the grounds rose with an easy ascent, they were bespangled with
with the tulip of the Cape of Good Hope (*haemanthus coccinea*, Linn.); a variety of different kinds of shrubs projected from the cleft between the rocks, and at their bases grew the beautiful *flea be gnaphaloides*, amongst an abundance of other plants.

24th. As the preparation of the plants, which I had collected on the preceding day, occupied a great portion of my time, I had not leisure to undertake any long excursion; I therefore confined myself to short walks in the neighbourhood of the town.

The false aloe, termed by botanists *agave vivipara*, was then in full flower. I admired the lightness with which the black titmouse (*parus ater*, Linn.) hovered about this plant, whilst it fed upon the saccharine liquor which exudes from the bases of its *corollae*. It was with regret that I killed some of these beautiful little birds, in order to carry off their spoils.

Three of us, who were walking together, followed a narrow path till within a small distance of the country-house of the Fiscal: his name was Denefs. This man, habituated to despotic authority over his inferiors, wanted to hinder us from walking over some uncultivated grounds, which, as he told us with great emphasis, were his property. We were not a little astonished at

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this prohibition, uttered in so dictatorial a tone; for the Fisical seemed fully persuaded that we durst not be so rash as to proceed any farther. We, however, after having represented to him that we could not possibly do any harm to his uncultivated stony grounds, pursued our route. The petty Vizier fell into a violent rage at seeing how little we minded his orders, and not being able to answer our remonstrances, he told us in very bad French, that such were his commands, and it required no further explanation.

Two negroes, who had accompanied us from the town, trembled at the sound of the Fisical's voice, and it was with difficulty that we could persuade them to remain with us: for they told us, whilst they shuddered with horror, that this Monsieur Denefs was the person who presided at the whippings that were administered according to the orders of the officers of police.

It is a remarkable circumstance that the Fisical is here invested with the charge of inspection over all the servants of the Company, and holds his office independently of any other person. It seems still more strange that so important a trust should be committed to the hands of an officer of police, who is thus enabled to practise all the extortions for which his office affords him such ample opportunities; for he it is who both fixes
the amount of fines, and collects their produce. In consequence of this regulation, pecuniary punishments are the only ones inflicted upon those who are able to pay: the rest he always orders to be whipped.

25th. I employed this day in taking a view of the Table Mountain, which derives its appellation from the horizontal plain which its summit presents when seen at a distance.

I had frequently to cross a brook that flows down this mountain. The large stones, rounded by friction, that are found on its shore, shew that in the rainy season the water descends in torrents.

About half way up the mountain I found the _thesium striatum_. A little higher up I met with the magnificent umbelliferous plant, called by botanists _hermas depauperata_, the beautiful fern, _acrostichum pectinatum_; the _bubon galbanum_, the _restio simplex_, &c.

That portion of the mountain which I had hitherto ascended, was composed of greyish freestone, very hard, and covered with masses of a fine white-coloured quartz, which served as a basis to several very close strata of micaceous schistus.

Having ascended upwards of 350 toises perpendicular height, I arrived at a fissure in the side of the mountain, which, when seen from the town, does not appear to afford a passage to the summit;
mit; but I found the distant view had deceived me, for I discovered a path in it of no very difficult access to persons used to climbing mountains, being the track mostly frequented in order to arrive at the top, which is hardly to be surmounted by any other.

Though the part of the mountain where we now stood is about 500 toises perpendicular height, the heat of the atmosphere raised the thermometer to twenty degrees in the shade.

Fuel is very scarce at the Cape of Good Hope; but though the mildness of the climate exempts the inhabitants from the necessity of employing artificial heat as a defence against the severity of the weather, they want it, however, for the purposes of cookery, and send their slaves even far beyond the Table Mountain, to fetch the small supply of wood which they require. We met several blacks carrying to the town their bundles of fuel, which consisted of the branches of different sorts of shrubs: amongst others I distinguished cunonia capensis, and several beautiful species of the protea. I was much gratified at having an opportunity to see these fine plants, and regretted only that they had been gathered for no other purpose than to serve as fuel. I picked out some specimens for myself, and the blacks, whose burthens were not become much lighter for what I had
had taken away, proceeded on their journey to the town. It gave us pain to observe that these miserable beings were obliged to march forward, without ever halting; though the steep descent of the mountain must have been extremely fatiguing.

The mountains in the neighbourhood of the town serve as a place of refuge for slaves, whom the barbarous treatment they endure compels to attempt their escape. Driven by hunger they then frequently approach, under cover of the night, to habitations, in order to procure by theft their scanty means of subsistence. That they prefer such a miserable state of existence to remaining with their masters, proves how inhuman the treatment must be to which they are exposed. It must be very dangerous to trust one's self, alone and unarmed, amongst the clefts of the rocks, where these wretches, driven by despair, shut themselves from the sight of the sun, in order to escape from slavery.

Some drops of water, that ooze at this height from fissures between the beds of micaceous schistus, afford the traveller means of quenching his thirst.

The high borders of the cleft, through which we were ascending, were ornamented with various beautiful species of lilacs: we observed particularly
cularly the *antholiza ethiopica*, remarkable for the brilliant appearance of its scarlet blossoms.

Having arrived at the summit of the mountain, we were beginning to regale ourselves upon the provisions which we had brought with us, when we observed some of the company of the Espe-rance coming towards us, who had undertaken the same tour without providing themselves with any refreshments for their journey; and we were heartily willing to let them share in our frugal repast.

The rain discharged by the clouds which had been detained over the summit of the Table Mountain during several of the preceding days, had formed pools in the clefts of the rock, between which I found a great variety of curious plants.

The summit of the mountain presents a view of False Bay in its whole extent, and I carefully followed it with my eye in all its windings. We descended by the same track that we had ascended. It was already dark when I arrived in the town, loaded with an abundant collection of plants.

26th. As soon as I had made the preparations requisite for preserving the specimens which I had collected, I directed my observations to the eastern part of the country.
Beyond the farther end of the bay there is a vast plain of sand, on which one is surprised to see a prodigious number of plants vegetating. The most frequent are various species of the daisy, polygala, and borbonia. These plants, however, would not be able to support themselves in so barren a soil, if they did not shoot their roots to a great depth into the ground, so as there to imbibe the moisture necessary for their vegetation.

I had to cross several brooks, which take their rise from the neighbouring mountains, and some of which are lost in the sands before they discharge themselves into the sea. In these moist situations I found the beautiful shrub, genthylis spiralis.

The fissures in the sand serve as places of shelter for the snakes, which one frequently finds sleeping upon their borders; but as soon as one approaches them they immediately fly to their lurking-places for refuge.

27th. I resolved to make a second visit to the Table Mountain. I went a little off from the common path, and enriched my collection with several plants which I had not seen before. Indeed it required a considerable length of time to exhaust all the botanical stores of a country which produces such an abundance of vegetables.
A thick fog suddenly spread itself over the part of the mountain where I stood, and obliged me immediately to descend. I should certainly have lost my way, had I not happened to be quite near to the path that leads to the foot of the mountain. Although there blew but little wind at that time upon the Table Mountain, the clouds, after passing over its summit, precipitated themselves in the form of mists, in the same manner as when they are impelled by the south-east gales.

28th. I enriched my collection with a number of plants which I gathered in the vicinity of the town.

I had hitherto observed but very few insects, as they do not generally frequent places so much exposed to currents of the air.

On the 29th, I made an excursion on the opposite side of the Table Mountain, following the course of the valley which divides it from the Lion's Mountain.

The *cyanella capensis* grew quite close to the edge of the sea.

Having reached the heights, I had the pleasure to see the sides of the rocks ornamented with different species of shrubs, amongst which the *ERICA HALICACABA* particularly distinguished itself, by the oval form, and beautiful tints of its flowers.
The _disa grandiflora_, one of the most beautiful plants of the class of _orchis_, grew upon the side of the small streams that wind themselves among these mountains.

This excursion proved the more gratifying to me, as I made it in the company of M. Masson, who had acquired a very extensive acquaintance with botany, in the course of his travels.

The following days were employed by me in making new researches in the places I had already visited. Vegetation is here so varied, that I continually met with new objects of attention.

An English frigate, from Tellicherry, had been lying for five days at anchor at the Cape, on its return to England to give an account of an engagement that had taken place between the French frigate _La Révolution_, of twelve guns, Captain Calaman, and the English frigate _Phenix_, of eighteen. The English frigate had attempted to make prizes of some vessels under the convoy of _La Révolution_.

The English, according to their usual custom, attempted to spread reports injurious to the character of Captain Calaman, who, according to the accounts we received from _Isle de France_, had conducted himself with equal courage and generosity. The English Commander would have done well to have contradicted these reports, by
by giving a just statement of the facts; but it seemed it was his interest to disguise them: for it is an unheard-of thing for that nation to make an attempt upon vessels escorted by a ship carrying the flag of ours.

Another English vessel, La Couronne, which arrived the day after the frigate had come to anchor, observed the same conduct.

I ought to remark, that our Commander having sent an officer on board each of these vessels, to comply with a customary piece of etiquette, the English Captains were not polite enough to return the compliment.

I had already provided myself with specimens of most of the curious plants that were to be found in the neighbourhood of the Cape Town; and could not expect to increase my collection, without making an excursion into some of the more distant parts of the country. I had for several days entertained a wish to visit the chain of mountains, called by the Dutch Fransche-Hoek, situated at a much greater distance eastward of the town than their appearance might lead one to suppose them. Their aspect gave me reason to hope that I should find them abounding with vegetable productions.

February 9. The gardener to our expedition made one of the party. We had hired a Hottentot
to lead the horse that carried our baggage; and a young negro, who hardly knew three words of the French language, served as our interpreter.

As a passport was necessary, M. Berg, one of the most amiable and intelligent men of the Company, provided us with one.

Colonel Gordon, Commander of the troops at the Cape, had furnished me with letters of recommendation to several of the colonists.

This gentleman is the celebrated traveller, who communicated to Buffon the first authentic accounts he received concerning the Giraffe, an animal till then very little known. Colonel Gordon had penetrated as far as 21° S. lat. into the interior parts of Africa, with a view to making discoveries in natural history. He has often assured me, that at this distance, more than twelve degrees north of the Cape, his barometrical observations shewed him, that the surface of this country was more than a hundred toises above the level of the sea; though, in traversing it, he had not been sensible of any rising of the ground, but had thought he travelled over a plain that was very little elevated. These observations, which he repeated at different times, after intervals of several days, seem to demonstrate that the surface of this country rises, in a gradual ascent,
to a height equal to that of the most elevated mountains in the other parts of the globe.

I leave it to natural philosophers to determine, whether or not the sinking of the mercury in the barometer proceeded from another cause than that which produces the same effect, when this instrument is carried upon high mountains.

We met a number of chariots drawn by three or four pairs of oxen. They were returning empty to the town, each of them conducted by a Hottentot, who stood erect in the carriage, and directed his team with wonderful dexterity, by means of a long whip, which he held in his hand. Though the foremost pair of oxen were at a great distance from him, he never missed any one of them that wanted the lash.

Our Hottentot marched on with his pipe in his mouth, and regaling himself from time to time with the Hottentot's fig (mesembrianthemum edule), which grew among the sands on the road side, without seeming to think of the horse entrusted to his care; so that our baggage fell off several times, and would have been left on the road, if we had not apprised our smoker of it, who was walking on without taking any notice of the accident. We found it necessary to use threats in order to rouse him from his lethargy, and render him more attentive to his charge.

Several
Several species of the *geranium, polygala, lobelia, &c.* grew upon the sandy plain through which we travelled.

Having arrived at some sandy grounds, we saw several gazelles, but they kept at so great a distance from us that we were not able to shoot any of them.

Two hours after dark, we arrived at the house of M. Bosman, at Bottelary. The letter of recommendation, which Mr. Gordon had given us, procured us a very friendly reception from this worthy planter, whom we found sitting at supper in the midst of his numerous family. He immediately invited us to sit down with him, and set before us some very agreeable strong-bodied wine, made from the grapes that grow about Bottelary. Some merchants of the town fell this wine at a very high price, as Constantia wine, to which however it is inferior in quality; and M. Bosman told us that it may be bought twelve times cheaper than the other.

M. Bosman, in his insulated situation upon a small spot of fertile ground, surrounded by a large desert of sand, was, of course, very desirous of hearing our news; but we found it very difficult to communicate any to him, as our negro interpreter appeared now much less fit for his office, than we had before conceived him to be. After having
having spent a great deal of time with saying very little, we went to take our repose, of which we stood in great need. We all envied the peaceable life which this respectable planter leads, in the midst of a family where the greatest simplicity of manners is united with the most engaging politeness.

10th. As soon as it was day, we went to take a view of the grounds about this delightful habitation. We found in M. Bosman’s garden most of the kitchen-plants and fruits of Europe; fine plantations of almond-trees rose before the front of the house, which was surrounded on all sides with vineyards that constitute the chief wealth of the owner.

Soon after sun-rise, M. Bosman’s youngest daughters, seeing that we were collecting insects, came to offer us their assistance. They hunted them through the garden with incredible swiftness; and soon brought us a fine collection of such as they thought the prettiest.

As we were shortly to sail from the Cape, we had not much time left us for our expedition to Fransche Hoek. We therefore took leave of this amiable family, with the most sensible regret, and proceeded on our journey.

We arrived in good time at Stellenbosch, where we stopped at the house of M. Hoffman.
The manner in which we were received at Stellenbosch afforded a striking contrast with the frankness and cordiality of our reception at Bot- telary. This was a very pleasant village; but we found that we were not to expect every where that agreeable frankness of manners, which characterises the planters of the Cape. We had imagined that a letter of recommendation from Colonel Gordon, addressed to M. Hoffman, would be sufficient to introduce us: but it was not till after he had carefully examined our passport, that he invited us to remain at his house. There are no public inns at Stellenbosch, no more than at the Cape Town; but the Dutch inhabitants of the town accommodate strangers at a settled price, which indemnifies the landlord. We were lodged at M. Hoffman’s very nearly upon the same footing as at the Cape.

On the following day I visited the hills in the neighbourhood of Stellenbosch.

The beautiful tree called brabeium fstellulifolium, remarkable for its fruit, which resembles in shape that of the almond-tree, grew here upon the banks of a rivulet that runs through the village.

I enriched my collection with several kinds of orchis, and with the species of the protea, called mellifera, pallens and speciosa; besides a number of other plants.
On the 12th we proceeded on our way, intending to arrive towards evening at Fransche Hoek.

This place, which, as is implied by its name, is partly inhabited by French, served as an asylum for the protestant families, which in consequence of the persecutions they suffered on account of their religious opinions, crossed the ocean, in the year 1675, with a view of establishing themselves in this part of Africa, where they were well received by the Governor, Simon Vander Stel, and provided with every requisite for following the employments of husbandry.

The wind from the south-east blew with force sufficient to incommode us on our march. It was, however, by no means so violent here, as we learnt upon our arrival that it had been at the Cape. The great difference in the force of these gales depends, undoubtedly, upon local causes, as I have endeavoured to shew upon a former occasion.

It was on this day that the pinnace of the Esperance, commanded by Citizen le Grand, not being able to reach the ship, was obliged to run for shelter off the island of Robben.

We had to walk two hours after it was dark, before we arrived at Fransche Hoek, where we presented ourselves at the house of Gabriel Deprat, to whom I had a letter of recommendation.
As he was absent, Jacob de Villiers, one of his neighbours, invited us to remain at his house, where we met with a very friendly reception.

The names of these planters led us to hope that we were now amongst people with whom we could converse in our own language; but these Frenchmen by extraction, having been obliged to make use of the Dutch for so long a space of time, retained nothing of their mother-tongue besides their family names.

It will not be uninteresting to the reader to know the names of those French families that still survived in the midst of these mountains. They were the following:

Lombart, Faure, Rotif, Blignant, Dupleffis, Marée, Ponté, Naudé, Cronier, Hugo, de Villiers, Marais, du Buissón, le Roux, Deprat, Rousseaux, Villiers, Terrons, Hubert.

We were here in a pleasant valley, where the rays of the sun, reflected from the surrounding mountains, soon ripen the grape, which is the chief source of wealth to the inhabitants. A good deal of cheese is also made here.

We employed the two following days in climbing up the mountains in this neighbourhood. I here collected specimens of the *protea florida* and *ferraria*, amongst a great variety of other plants.

These mountains are composed chiefly of gran-
nite, and a very hard sort of free-stone. The mould produced, by the decay of the vegetables grow upon them, is the cause of the fertility of the vallies where the colonists reside. Hence they are obliged to travel over sandy deserts in order to carry the produce of their labour to the town. This kind of situation is common to all the establishments at any considerable distance from the Cape. The cultivators are necessitated to go more than 500,000 toises into the interior of Africa, in order to seek out some spots of arable land, scattered like islands in an ocean of sand; and after they have found them, every one applies to the ground he has cleared whatever mode of cultivation he thinks most adapted to the soil. The black slaves, though obliged to labour very hard, are in general treated with humanity. It is remarkable that, contrary to the practice of the Spaniards, who always endeavour to make proselytes of their slaves, the Dutch planters leave theirs in the most profound ignorance of their religion.

We frequently saw the snakes, which are much dreaded by the inhabitants of the country, lying in wait under the trees for the birds which often become their prey.

The zebras are very common in these mountains:
tains: they run away with prodigious swiftness upon the approach of a man.

The ape termed magot by Buffon (Simia inuus, Linn.), sometimes came very near to the house where we lodged. I once witnessed a singular fact, which shows what authority these animals possess over their young. A large ape that was followed by a very little one, thinking himself unobserved, took it up in one of his paws and beat it for a considerable space of time with the other. If the apes knew how to proportion the punishment to the offence, the cub must have been very naughty; for he got a most severe beating.

The olive-coloured thrush, and the starling of the Cape of Good Hope, with some wood-peckers, &c. were the birds I most frequently saw during this excursion.

As our departure from the Cape was fixed to take place very soon, we were obliged to leave Franche Hoek much sooner than we could have wished. We were in such haste to return to the town, that we bade adieu to our worthy host Jacob de Villiers, at ten o'clock in the evening, and immediately set out on our journey. We marched the whole night through, and at length arrived at the same hour of the following evening in the town, having travelled by way of the Paarl-Berg and Paarde-Berg. Such a forced march could
could not fail to prove extremely fatiguing to us, who had for several days past enjoyed but a very few hours sleep. One of the servants belonging to the Esperance, Emard Serpoy, who had wished to accompany us, as he was passionately fond of shooting, was so overtaken with drowsiness about midnight, that we were obliged to let him sleep for half an hour upon the road, before he was able to proceed any farther with us.

I was sorry to learn, at my return from Franche Hoek, that we were to lose three of our travelling companions, namely, the astronomer Bertrand, the naturalist Blavier, and the painter Ely, who had requested the Commander to leave them on shore, as their health did not allow them to accompany us farther on our expedition. Bertrand having ascended the Table mountain a few days before, in order to make some barometrical observations, had fallen in such a manner as to be very severely hurt. I was informed at my return to France, that he was not so fortunate as to see his country once more, having died at the Cape, a short time after our departure.

As all the houses in the Cape Town are built with flat roofs, it presents a very agreeable view. The fortifications on the side facing the sea had been rendered stronger, a few years ago, by additional ramparts.
The Commander persuaded me, as the vessels were already so much lumbered, to leave the collections of natural history, which I had made during our stay at the Cape, in the hands of Gui, agent of the French government. This person promised to send them to France by the first opportunity. They, however, never arrived there, and I was informed at the île de France, upon my return from the South Sea, that they had been seen by the naturalists Macé and Aubert Petit Thouars, deposited in a granary belonging to this agent, long after our departure from the Cape; though he had had plenty of opportunities to send them to France, if his design had been to fulfill his engagement.

Few spots of the globe so well deserve the attention of a commercial nation, as the Cape of Good Hope. Its situation has rendered it as an anchoring station almost indispensably necessary for ships failing to the East Indies. It affords abundance of provisions; but the restrictive regulations daily diminish the number of ships frequenting this harbour, as they now endeavour to reach the place of their destination without touching at the Cape; and some put into the harbour at St. Helena, where they are able to provision themselves at an easier rate.

The spirit of speculation that prevails amongst
the Dutch Company, has often induced them to feign a great scarcity of provisions at the Cape, in order to enhance their price. The cultivators are not permitted to enter into a direct bargain with strangers for the produce of their lands; but are obliged to leave them to be disposed of by the Company, who frequently purchase them at a price four times less than that which they themselves receive.

The vexatious interference of the superior agents in the concerns of their subordinate officers, turns likewise to the disadvantage of strangers, who find it impossible to escape from the capacity of so many persons, all combined against their interest. This avaricious spirit gradually undermines the prosperity of this country, as it renders navigators unwilling to touch at the Cape whenever they can avoid it. A ruinous propensity to extravagance, which has for some years past prevailed amongst the women, has produced a great change in the manners of the inhabitants, who are now eagerly intent upon adopting all the fashions of Europe.

All these evils have arisen from the Dutch government having so grossly mistaken its own interest, as to leave a place of the last importance to the navigation of India, under the direction of a company of private merchants. But it
is known, that the political views of this people generally act in subordination to the desire of gain, which governs them, and is often in contradiction with their interests as a nation.

It was then expected that commissaries were to be sent from Europe, in order to put affairs upon a better footing: but such commissaries have been sent several times, and the affairs still remained in their former condition.

We laid in a sufficient stock of provisions at the Cape to supply the place of what we had already consumed. It would have been well if as much of our European stock as was bad in its quality had been changed for better. The contractors had deceived us in the quality of the wine which we bought of them. We had paid them double the ordinary price, that we might have it of the best quality, and such as would keep for a long time. Part of it, however, was already spoiled before we reached the Cape. When we arrived there, it was a matter of the utmost importance to have it changed, and the more so, as we knew we could not do it in the subsequent part of our voyage. We might there have had our choice between the wine of the country and Bourdeaux wine, as a vessel at anchor in the road had a cargo of the latter on board. Why it was neglected, I am at a loss to compre-
comprehend. The consequence was, that our bad wine grew worse and worse, till we were at length obliged to substitute brandy in its place. This piece of negligence deprived us of one of the best means for preserving the health of the crew during a voyage, in the course of which they ran the hazard of being in want of every necessary.

The observations taken on board the Recherche, gave us for its anchoring station at the Cape of Good Hope, 33° 54' 24" S. lat. 16° 4' 25" E. longitude.

The variation of the magnetic needle at the same place was 24° 30' W.

Our astronomer Bertrand found, for the place of his observatory in the town, 33° 55' 22" 4-5ths S. lat. 10° 3' 45" E. long.

The variation of the magnetic needle, as observed by him, was 24° 31' 52" W. The dip of a flat needle gave 47° 25'.

During the whole time we lay at anchor, the mercury in the thermometer was never higher than 25° above 0.
CHAPTER IV.

Departure from the Cape of Good Hope.—Death of the Master-Carpenter of the Recherche.—Divers Occurrences.—Singular Flight of the Albatross.—The Isle of St. Paul seen.—Conflagration of its Forests.—Prodigious Swarms of Insects in our Ship's Biscuit.—Violent Effects of the Surge.—The Commander dangerously wounded.—Luminous Points at the Extremity of the Conductors.—Large phosphorescent Corpuscles.—In Consequence of an erroneous Observation taken by Wiliammez, we enter by Mistake into Tempest Bay instead of Adventure Bay.—General Observations upon the Variations of the Magnetic Needle.—Gradual Diminution of the Phosphorescence of the Water, proportionate to our Distance from the Land.—Course of the Currents.—We are obliged to heat the Place where our Time-keepers are kept.—Anchorage in Port Dentrecasteaux.

10th February.

We waited only for a favourable wind to quit our station at the the Cape, when a south-east breeze springing up about ten o'clock in the forenoon, enabled us to get under way. Scarcely had we spread our sails, when a sudden squall
squad from the mountains blew with such violence, that it prevented us for some time from making use of our rudder, so that we were in danger of running foul of some of the ships which lay at anchor in the road. However, we soon run past them, and stood for the offing.

18th. About eight in the morning our master-carpenter, Louis Gargan, died, a victim to the excesses in which he had indulged during our stay at the Cape. A fever, which appeared slight in its commencement, grew afterwards so violent as to put an end to his life. We felt the loss of this man the more sensibly, as the carpenter of a ship is one of the most useful persons on board, especially in a voyage undertaken for the purpose of discovery in the midst of seas full of rocks and shoals, where one is in perpetual danger of being shipwrecked, and where, if one does not possess the means of constructing another vessel to receive the crew, all hopes of revisiting one's native country must go with the wreck to the bottom.

Two persons had concealed themselves in the ship before our departure from the Cape, and did not make their appearance upon deck till we were so far from the land that it was no more practicable to put them on shore. They were, of course, permitted to accompany us. The one was a soldier, deserted from the garrison at the Cape; the other
other a German, a very skilful workman in mathematical instruments, who had practised his trade for nine years in England. The English, he told us, were going to send him to Botany-bay, amongst a great number of other convicts. He assured us, that he had been condemned to be sent thither for debt. Having seized an opportunity of escaping from the vessel where he was confined, he fled for refuge to the mountains in the neighbourhood of the Cape-Town. We had no use for the talents of this artist in the line of his profession; we therefore first employed him as our armourer, and afterwards as a smith. The armourer of our ship had been left on shore at the Cape, on account of sickness.

On the 20th of February we weathered Needle Point, at the distance of about 100 toises, with winds from S. W. and W.

On the 22d we were in 35° lat. S. long. 20° E. when the soundings gave us our depth at 62 fathoms, over a bottom of grey calcareous sand.

The currents had hitherto set to the N. W. but on the 25th they drove us towards S. W. as we were now off the channel of Mozambique, where the current, at this season of the year, takes a S. W. direction along the coast of Natal, which we had in sight.

On the 26th the surge ran so high, that a windmill,
windmill, which we had fastened very strongly to the poop, was carried away by the billows. As our vessel was much too heavily laden, we thought ourselves indemnified for the loss, by getting rid of a burden of eleven hundred weight. I do not know how it happened that we were burthened with such an almost useless machine, since wherever we were able to procure wheat, we could likewise procure flour. At any rate, a hand-mill six times lighter, would have been less cumbersome, and would have answered our purpose better.

The rolling of the vessel was so violent, that our time-keepers struck against the sides of their boxes, which ought to have been made rather more spacious.

We still saw a great number of flying fish, though we had already passed the 35° of S. latitude.

The quarter-galleries of both vessels were built much too low, particularly considering they drew so deep. We had reason to apprehend that they might be carried away by the surge, if it should long continue to run so high: those of the lower deck of the Esperance were already considerably damaged.

29th. At this season of the year, vessels that approach near to the mouth of the channel of Mozambique,
Mozambique, generally meet with violent storms. The gradual fall of the mercury in the barometer to the amount of eight lines, whilst the north-east winds blew from this gulf, gave us a presage of a still more violent hurricane. The clouds contained such a superabundance of electric matter, that though our conductors helped to draw off a portion of it, the lightning frequently struck into the water at the distance of a few yards from our vessel. A gale from the east, which brought back fair weather, was preceded by a rise of two lines in the mercury of the barometer. On the 1st of March, the sea was swelled to such a height by this gale, that we often lost sight of our comfort behind the billows. This vessel, seen at the distance of two or three hundred toises, presented a magnificent spectacle; sometimes it appeared buried in the waves; again it emerged, and mounted to the very summit of the surge, shewing a great part of its keel above the water.

3d. As the swell abated, we knew that we had failed beyond the mouth of the channel of Mozambique; for, although the wind continued to blow with nearly the same violence as on the preceding days, the sea, being sheltered by the coasts of Madagascar, became very tranquil. We saw a prodigious quantity of the *fucus pyriformis*, the largest
largest species of that genus, floating upon the surface of the water: they had undoubtedly been detached from the rocks that bound the coast of that large island. This fucus, which is several yards in length, is provided with small bladders filled with air at the extremities of its highest leaves, whereby it is enabled in its growth to take a direction towards the surface of the water.

About five o'clock in the evening we were surrounded by a great number of whales, which came within a hundred yards of our ship. The Anglo-Americans, who sometimes visit these seas in order to fish for the whales, are more than indemnified for the expences of their equipment by the profits from the oil which they carry home.

The depositions of the Captains Magon Lépinay and Préaudet, had determined our Commander to endeavour to reach the Admiralty Islands as soon as possible, thinking that, after passing along the north coast of New Holland, we should be able to arrive there before the return of the eastern monsoon. We had, however, made as yet but very little way, being, on the 6th of March, only in 44° E. lon. The apprehension of being detained at the Molucca Islands during the whole time of the east monsoon, which was expected to set in during the month of March, induced him to
to relinquish his former intention, and resolve to
double the Cape of Van Diemen, in order to get
into the South Seas.

About half an hour after six o'clock in the
morning, he sent a boat to the Esperance to ac-
quaint the Captain with his determination. The
wind fell all of a sudden when the two ships were
very close to each other. A very high surge in-
creased the danger of our situation; so that the
bowsprit of the Esperance was very near running
foul of our stern, had the vessels not been kept
clear of each other by the boats.

We found that the currents set to the north.
The ring by which the long-boat, that had been
sent to take an observation of their direction, was
fastened to the cable, gave way as they were hoist-
ing it on board, and the compass that they had
been using was destroyed.

Though we were upwards of 1,000,000 toises
from the Cape of Good Hope, we saw several al-
batrosses (*diomedea exulans*), some of which let us
come very near them, as they floated upon the
surface of the sea. We frequently observed them
thrust their beaks very deep under the water to
seize their prey.

The flight of these birds is very astonishing.
One cannot perceive any motion of their wings
except at the moment they raise themselves into
the air; when they frequently use their feet also, which, being webbed, serve them to make several strokes against the water, in order to raise themselves out of it. This impulsion being once given, they have no more occasion to strike their wings together, but hold them very widely expanded, whilst they sail along, balancing their bodies alternately from right to left, and skimming swiftly over the surface of the sea in quest of their food. This mode of poising themselves in the air undoubtedly serves to accelerate their flight, but one can hardly suppose it to be sufficient for supporting them above the surface. Perhaps some imperceptible tremulous motion of their feathers may be the principal cause of their extraordinary mode of flying. If that be the case, they must be provided with some particular muscles adapted for the purpose; on which account I think that the structure of the albatross deserves to be very attentively investigated by anatomists.

The puffins of Buffon (procellaria puffinus), were very numerous in these seas. The flight of this bird is performed in a manner analogous to that of the albatross, for he often skims along for a great length of time without any perceptible motion of his wings: it is only when he changes his oblique position from one side to the other that
that one may observe him strike the air with the lowermost wing, by which his body is immediately inclined in the opposite direction.

We were steering our course S. E. E. in order to pass between the islands of St. Paul and Amsterdam; but the wind having shifted to S. E. we were obliged to tack S. S. W.

7th. About nine o'clock in the evening, as we were in lat. 34° 45' S. and long. 44° 5' E. the wind smelt very strong of sea-water. Had we been failing in parts less known than these, we should have had reason to apprehend that we were very near to some island. It is probable that the smell proceeded from a quantity of fucus detached from the south coast of Madagascar, and carried a great way into the sea by the currents.

One of our sailors, in a fit of drunkenness, threw himself into the sea. As the weather happened very fortunately to be calm he was taken up and put on board; but this immersion only increased his drunkenness, and he would have thrown himself again into the water if he had not been held fast.

We continued for twelve days with slight breezes that shifted from S. S. W. to N. N. W. veering round by E. to direct our course, as near as possible, so as to pass between the islands of Amsterdam.
Amsterdam and St. Paul. Though this course was the shortest, with respect to distance, that we could have taken in order to arrive at the channel through which we intended to sail, the want of wind detained us much longer than might have been the case had we steered in another direction. By failing more directly southward, we should soon have met with winds that would have carried us to the Cape of Van Diemen.

It was not before the 28th of March, when we were in lat. $37^\circ.5^\prime$ S. that the N. N. W. wind began to blow pretty fresh. A great flight of gulls and mews showed us that we were near land; as these birds never fly too far from the shore. We at length came in sight of it about half after one in the afternoon. It was the island of St. Paul, which bore S. E. at the distance of about 20,000 toises. This island was discovered in 1696 by Captain Valming, and called by him the Isle of Amsterdam, whilst he gave the name of the Isle of St. Paul to the southernmost of the two. Captain Cook, whom I have herein followed, reversed these appellations, and gave the name of Isle of Amsterdam to the southernmost, and that of Isle of St. Paul to the other.

The Isle of St. Paul presented itself, at a distance,
tance, as if covered with thick clouds, above which the tops of the mountains were visible. In four hours time we were near enough to perceive that these clouds arose from the island itself, from whence a thick smoke ascended, which almost entirely covered it, especially towards the north. We observed flames in different places, and soon perceived that the forests were on fire: the course of the flames and smoke, which appeared successively in different parts of the country, pointed out to us the progress of the conflagration. We steered our course so as to pass as near as possible to windward of the island. The same species of birds that we had observed a few hours before we espied land were flying about the rocks where they had their nests. A great number of seals swam amongst large masses of fucus that had been detached from the island, along the southern coast of which we ranged at the distance of about 250 toises from the shore. This coast is very steep and perfectly safe: the surges, which followed its direction, would have apprized us of our danger in approaching it if there had been any shoals. The mountains on the south-east side of the island descend with very steep declivities as far as the edges of the sea, and appeared to me to consist of layers of free-stone, inclined from north to south so as to form an angle of fifty degrees with
with the horizon. Farther to the south I observed horizontal layers of the same kind of stone, from whence a small rivulet discharged itself, in a cascade, into the sea. The rocks facing the sea were shaped into a variety of those grotesque figures, commonly termed lusus naturae. We observed a light smoke ascending in puffs from a small subterraneous cavern at a little distance from the shore; though we could not learn whether the forests had caught fire from some conflagration in the bowels of the earth, or had been kindled intentionally by the inhabitants. I was informed at Isle de France, upon my return from the South Seas, that an American vessel had left some men at the islands of Amsterdam and St. Paul, for the purpose of collecting oil from the fat of seals, which are very numerous on those coasts. But though we watched very attentively to see if any signal was made for our assistance, we observed no signs of the island's being inhabited. At any rate it would have been impossible to put in there, as we could not have found an anchoring-place except to leeward of the island, where we ran the risk of being suffocated by the smoke. The smell of the smoke seemed to show that it proceeded entirely from the combustion of vegetables.

The mountains gradually diminish in height towards
towards the south-east end of the island; so that, in favourable weather, vessels might easily put in at that part of the coast. We observed several rivulets, which, after winding with a serpentine course amongst the hills, discharged themselves into the sea.

We were still very near to the island when the night came on. The land then appeared as if covered with a sheet of fire, whilst the illuminated smoke gave that vivid appearance to the sky which generally portends a hurricane.

The isle of St. Paul is about 10,000 toises in circumference, and situated in about 37° 56' S. lat. and 75° 2' E. lon.

The variation of the magnetic needle was here 17½° W.

During the continuance of the gales from N.W. and S.W. the mercury of the barometer gradually fell eight lines. On the first of April, it was stationary at 27 inches 7 lines, when the gale was so strong, that we went at the rate of ten knots with the fore and main top-sails set. We never ran so fast as on this day, in the whole course of our voyage. We were now already in 40½° S. lat. Lon. 85° E.

Hitherto we had flattered ourselves that no fraud had been practised upon us, at least with respect
respect to the quality of our sea-biscuit. But we discovered, when it was too late, that a part of it had already made a voyage before; for, at the end of five months after our departure from Brexit, it swarmed with prodigious numbers of those maggots, that are afterwards changed into the species of fly known by the name of *dermestes panicicus*. These insects soon became very troublesome to us: in the night-time they burnt themselves at our lamps in such numbers, as very frequently to extinguish them. From the biscuits the maggots soon spread themselves throughout all the rest of our provisions, and it lasted a considerable time before we could conquer the disgust which it at first gave us, when we saw them swarming in all our food.

2d. The impetuosity and frequency of the squalls obliged us to make a great many tacks. They once forgot to hiver the main top-sail before they brailed it up, and it was instantaneously torn in pieces.

On the 4th of April, being in $41^\circ$ S. lat. $92^\circ$ E. lon. we saw a great number of birds; amongst others, gulls and the *larus marinus*, which seldom fly far from the land. Probably we were near to some rock or island. Though we had made a very good run, we still saw the same kinds of birds on
on the following day. The land where they have their abode may possibly be discovered, when these seas shall be more frequented by navigators.

14th. A fall of the mercury in the barometer from 28 inches 3 lines, to 27 inches 7 lines, announced the approach of violent gales, which blew from W. and S. W. and raised the billows so high that they frequently dashed over our decks. One of them, that had entangled our mizen chains, broke against the stern of the vessel with such force, that the sailors thought we had struck upon a rock. The shock was tremendous, and some of the store-rooms instantly leaked.

The violence of the shock had thrown the Commander against one of the corners of a barrel-organ, intended as a present to some savage chief. The surgeon thought at first that he had fractured one of his false ribs; and the pain was so great, that, whenever he sneezed, it threw him into a fainting fit. However, he soon recovered his health.

During the night the atmosphere was filled with a superabundance of electric matter: a part was drawn off by means of our conductors, upon the top of which we observed a luminous speck, that vanished and re-appeared several times in succession. The sea appeared more phosphoric than usual.
In the course of the night a large wave dashed over the deck of our vessel, having made its way through the opening between the fore-castle and quarter-deck, where we kept our boats. When I sprang out of my bed, I found the cabin filled with water, and imagined we were going to the bottom. It kept us a long time employed before we could rid the ship of the water it had taken in. Three or four such waves would infallibly have sunk us. We should not have run such a hazard, if we had been provided with means to lay gratings over the large opening by which the wave entered.

On the 17th of April, when we were in lat. 43° S. long. 129° E. the variation of the magnetic needle was 0.

The Esperance was apprised, that in case of separation, our rendezvous at Van Diemen's Cape was to be the Bay of Adventure, instead of the Baie des Huitres.

We lay to under our fore-sail during the night of the 20th, as our day's work had brought us so near the coast, that we could not carry full sail. At nine in the evening, we founded, without striking ground, with a line of seventy-five fathoms. We brought up with the lead a great quantity of phosphoric substances, from about three to seven inches in circumference. As the
compressibility of water has been demonstrated, we know the principal cause of these substances being suspended at different depths below the surface of the water, in proportion to their specific gravity.

21st. As soon as it was day we directed our course, with full sails, E. N. E.

About half an hour after nine o'clock, we observed a rock with a very sharp point, known by the name of the Mew-Stone. Some other rocks and mountains of moderate height appeared to the eastward. The coast was indented with several small bights in the land; some pretty high mountains were seen at a small distance from the shore, and we could distinguish the large trees which covered their summits.

We soon bore in with a bay open to the south-east. An island was visible to the eastward, and nearer us we perceived breakers to N. E.

It was the Commander's intention to cast anchor in Adventure-bay. As his wound did not yet permit him to leave his cabin, he was obliged to give his orders respecting our route, according to observations which were reported to him as they were taken. An erroneous observation, taken by Citizen Willaumez, * having been reported to

* When we made the land of the Cape of Van Diemen, Willaumez was directed to take the necessary observations.
him, he gave orders to manoeuvre the ships, so as to enter the bay situated on our left. In vain we looked for the Pinguin's Island, thinking ourselves in Adventure-bay, though it really was Tempest-bay, named thus by Tasman, who, having entered it in the month of November 1642, was in the most imminent danger of being driven ashore by a S. E. wind, when he endeavoured to get into the main sea.

As we had got very far into the bight of the bay, our soundings gave us a depth of from fifteen to twenty-five fathoms, over a bottom of shells. The Commander was on the point of giving orders to leave the bay, that we might pass the night in the open sea: however, he resolved to dispatch two boats, the one to the northward and the other to the south-east, in order to look out for some place of shelter for our ships.

The men in the boat sent to the north side of the bay, found a place of anchorage, with a very good bottom, where we might easily procure wood and water. They had seen some remains of huts, and near them large heaps of shells, that appeared to have been broiled by the natives.

On being asked the bearing of Eddy-Stone, he said it bore S. 19° W. though it actually bore S. 19° E. Accordingly the Commander gave orders to make the bay on our left, as he could not doubt that it was Adventure-bay.
It was, however, too late for us to put into this anchorage before night. As the weather was fair, it was resolved to cast anchor in Tempest-bay, in a bottom of grey sand, at the depth of ten fathoms. We had been sixty-four days on our passage from the Cape to this place. Most of the navigators who have made it before us, have performed it in fifty or at most fifty-five days. It is to be observed, that they have generally steered southward as soon as possible, in order to get into the track of the westerly winds. This route is somewhat longer than that which we took, but at sea it is not always by taking the shortest road that one arrives the soonest at one's place of destination. Navigators ought to be well acquainted with the ordinary courses of the winds, that they may be able to get into those which are the most favourable. The night continued very fine, though the air was charged with a great deal of moisture. We were sheltered from the N. W. and W. N. W. winds, though we now and then experienced a few slight blasts.

We caught a great quantity of fishes with our lines. They were of a great variety of different kinds: the most numerous were those of the species gadus.

The variation of the magnetic needle, observed when we passed under the meridian of Isle de France,
France, at the distance of more than 700,000 toises south, had been greater by twelve degrees than we found it near the coast of that island—a great difference when considered as arising merely from change of latitude.

The greatest W. variation observed, was on the 3d of March. It was then 30½°, our lat. being 34° 30'. S. and long. 37° 45' E. From that time it continued to decrease, till it became 0, in lat. 43° S. long. 129° E.; after which it passed to E. and continued to increase in proportion as we advanced eastward.

The W. variation of the magnetic needle, as observed till the period when it was the greatest, had been more influenced by change of longitude than of latitude; though from that time, till we were under the meridian of Isle de France, it appeared to depend much more upon change of latitude; for, from the point at which it had been the greatest, till we passed under the meridian of Isle de France, having changed our longitude by 17 degrees, and our latitude by 2½, the variation had been only 4°, though, by a change of latitude to 17 degrees further south, the variation had been found 12° more than at Isle de France.

The phosphorescence of the sea, during this passage, had diminished in an inverse proportion to our distance from the land; so that a considerable time
time before we saw the island of St. Paul, one could hardly perceive any appearance of phosphorescence in the waves.

During our passage from the Cape, the thermometer had never indicated lower than 8° below 0, nor higher than 20° above 0. The mercury in the barometer, during the same period, had never stood higher than 28 inches 7 lines, nor lower than 27 inches 7 lines.

While we were in the track of the variable winds, the currents had set from 10' to 20' N.; but whilst we were sailing off the S. W. coast of New Holland, they had set eastward. These differences in their direction depend upon the situation of the lands.

Our tables for rectifying the irregularities of our time-keepers arising from difference of temperature, extended no farther than 15° of Reaumur's scale, and the balance-bow for our pendulum-clock was only calculated to answer between 105° and 115°. The latter was constantly above 115°, and the temperature of the atmosphere was very often lower than 15° of the thermometer. It was necessary to keep up a degree of temperature, at least equal to this, in the place where our time-keepers were deposited. A common lamp might have answered this purpose; but we
we preferred one of D'Argand's, in order to avoid the smoke.

22d. The boats that had been dispatched the preceding day for that purpose, were again sent to found at the entrance of the station where we intended to cast anchor, as they had not had time sufficient to do it the evening before. About half an hour after nine we received the agreeable intelligence, that it was a very well sheltered harbour, with safe anchorage in a bottom of muddy sand, not less than 3½ fathoms in depth at the entrance facing the middle of the bay. Their soundings had given them from 2½ to 4 fathoms throughout a considerable part of the harbour, which extends land-inwards about 2,500 toises. It was a better station in every respect than Adventure-bay, and we could here supply ourselves with wood and water as easily as we could wish.

Though the breeze was against us, it was at first so inconsiderable that we could be towed towards the harbour; but we had scarcely proceeded 500 toises, when it blew fresher and obliged us to cast an anchor. The Esperance, however, continued to be towed, and nearly reached the entrance of the harbour before it grew dark.

A boat which we sent out to fish, took so many at a single draught of the net, that the distribution
was immediately made, and every one contented with his portion.

We were much surprised to find amongst the fish caught with the line in the course of the night, some sharks about a fathom in length. They were of the species *Squalus cinereus*. This kind of shark never rises from the bottom of the water. We never saw it approach the surface during the whole time of our stay at the Cape of Van Diemen. It does not appear to be dangerous to man; for our sailors, though they bathed here very frequently, never met with any accident. It finds sufficient food on these coasts to satisfy its voracity without attacking men: otherwise the natives of the country, who frequently dive to a great depth into the sea in quest of shell-fish, would be in perpetual danger of being devoured by these animals.

Some mountains, which appeared to be above 500 toises in perpendicular height, were visible towards the north at a distance of about 15,000 toises. Their summits were covered with tall trees, whose verdure gave additional beauty to the magnificent prospect which they exhibited.

An officer belonging to our vessel, who had been sent to take the soundings at the farther end of the harbour, went on shore, where he found several huts, and near them the remains of L 3 broiled
broiled shell-fish, which had evidently served for food to the natives.

25th. As we had hardly any wind, we weighed anchor a few hours before day-light, in order to be towed into the harbour. As the calm continued, this proved the most expeditious method, and we were soon brought into our anchoring place. We ranged at a small distance from a rock situated about the middle of the entrance, leaving it to our left. Our soundings indicated a depth of 2½ to 3½ fathoms; in other parts of the same strait it was from 4½ to 11½.

About eight o'clock, we cast anchor in a depth of three fathoms, 350 toises from the entrance of the harbour, to which we gave the name of Port Dentrecasteaux. The nearest shore was at the distance of about 250 toises to the eastward.

It is difficult to express the sensations we felt, at finding ourselves at length sheltered in this solitary harbour at the extremity of the globe, after having been so long driven to and fro in the ocean by the violence of the storms.

The boats afterwards towed in the Esperance, which cast anchor about one o'clock in the afternoon, at a distance of 150 toises southward of the Recherche. At first we had attempted to approach nearer to the shore without taking the soundings accurately; but we soon found our-
felves surrouned by the ooze, and were obliged to heave in at the capstern in order to extricate ourselves.

CHAP. V.

Abode at Port Dentrecasteaux—Signs of the Coast's being frequented by the Savages—Different Excursions into the interior Part of the Country—Trees of an enormous Height—Excellence of the Soil—Black Swans—Large Trunks of Trees, hollowed by Fire, serve the Natives as Places of Retreat—Kangourou—Observations relating to Comparative Anatomy—Places of Shelter against the Wind constructed by the Natives—Construction of their Huts—A sudden Gust of Wind breaks our Chain—we run aground in the Mud—Meet with a young Savage—Intelligence of a Passage by which one may sail from Tempest into Adventure-bay—Huts of the Natives—Phoca Monachus—The Heart of this amphibious Animal has no Foramen Ovale—Observations relating to Comparative Anatomy—Traces of Beasts of Prey at the Cape of Van Diemen—Huts, which appear to have been lately inhabited—Viviparous Flies, the Larve of which produce speedy Putrefaction in Flesh-meat—Citizen Riche finds some burnt human
human Bones—Our Master Sail-maker loses himself in the Woods—Both Vessels run aground in the Mud—Utensils of the Savages—Place of the Observatory—Variation of the Magnetic Needle—Time of High-water in the Harbour—Departure from Port Dentrecasteaux—Passage through the Straits of Dentrecasteaux—Fires—Savages seen on the Shore—One of them kindles the Fire in different Places—We cast Anchor in a large Bay at the Entrance of the Straits of Dentrecasteaux—Excursion into the Country—Savages found dressing their Food at the Fire—The Straits which we had discovered receive the Name of the Straits of Dentrecasteaux—Anchoring Places in this Channel—Excursions into the Countries situated along its Coasts—Rencontres with the Savages—Departure from the Straits of Dentrecasteaux.

PORT Dentrecasteaux is situated at the farthest end of Tempest-bay, and forms an almost oval basin, extending about 2,500 toises in length towards N. N. E. Its greatest breadth is about 760 toises. The tall forests that surrounded us on all sides, and the mountains at no great distance from the coast, which sheltered more than one half of the circumference of the harbour, added to the security of our anchorage. Though
the gales were never so high, our pinnaces could
fail about it with security. A muddy bottom,
about 3½ fathoms in depth, let them run no haz-
ard if they were driven aground. More than
100 vessels of the line might ride here with safety,
and be supplied with as much wood and water as
they stood in need of.

Towards the N. N. E. extremity of the har-
bour a small river discharges itself into the sea.
Some of our boats attempted to row up the stream,
but were prevented by the large trees that lay
across it. A few wild dogs were observed in the
neighbouring country; and some sheltering places,
slightly constructed of the barks of trees, shewed
that the shores were frequented by the natives.
A piece of alga marina, of the species known by
the name of fucus palmatus, was picked up. It
was cut into the shape of a purse, and appeared to
have been used as a drinking vessel, being found
filled with water.

The west side of the harbour is the most fa-
vourable for taking in a supply of water. We took
in ours on the W. S. W. and our wood on the
opposite shore.

A fire that was seen at the distance of about
5000 toises to the South, informed us that we
were near the habitations of the savages, although
we had as yet seen none of them.

In
In the afternoon I went on shore, accompanied by the gardener and two others of our ship's company, in order to make an excursion into the country towards N. E. We were filled with admiration at the sight of these ancient forests, in which the sound of the axe had never been heard. The eye was astonished in contemplating the prodigious size of these trees, amongst which there were some myrtles more than 25 fathoms in height, whose tufted summits were crowned with an ever verdant foliage: others, loosened by age from their roots, were supported by the neighbouring trees, whilst, as they gradually decayed, they were incorporated piece after piece with the parent-earth. The most luxuriant vigour of vegetation is here contrasted with its final dissolution, and presents to the mind a striking picture of the operations of nature, who, left to herself, never destroys but that she may again create.

The trees in this forest did not grow so close together as to prevent us from penetrating into it. We walked for a long time over ground, where the water, impeded in its course, has formed itself into marshes, the borders of which we examined. Deeper within the forest, we found small rivulets that contained very good water. Almost every where the soil consisted of a very fine mould, produced by the decay of vegetables, over a bed
of reddish, and sometimes greyish sand. In some places it consisted of an argillaceous kind of earth, which imbibing the water with great facility, forms itself into bogs; in others this earth has been washed away by the water filtering through the ground, so as to form pools, and sometimes deep holes, the surface of which being covered with plants, one does not easily apprehend any danger in approaching them, but by the inadvertency of a single moment may fall into them unawares. An accident of this kind happened to the surgeon of the Esperance, who, whilst he was a-hunting, set his foot upon what he took to be firm ground, and fell into a very deep bog. He immediately disappeared; but fortunately he was able to swim.

We found some rudiments of huts in these woods, consisting of a frame-work made of the branches of young trees, and designed to be afterwards filled up with pieces of the bark, which the natives always use to cover the outside of their cabins.

I gathered several species of the *eucalyptus*, during this excursion; amongst others, that which White has denominated *eucalyptus resinifera*. This is a very tall tree, the spongy bark of which is often three inches in thickness, and separates very easily from the trunk. It produces a gum resin,
of a reddish colour and astringent taste, which is used for medicinal purposes. We likewise collected several species of *philadelphus*, the *banksia integrifolia*, a new species of *epacris*, &c.

On the sea-shore we met the servant of Citizen Riche, greatly delighted with having shot a few birds, which he was carrying to his master. This man, who had but just recovered from a fit of illness, was still upon the list of the surgeon of the Esperance, who thought he had a right to what his patient had shot; but neither the threat of being purged, nor even that of being put upon spare diet could make him give up a single bird. The surgeon too kept his word; for he made him swallow a purgative and put him upon a spare regimen. The servant, having learnt by melancholy experience the consequences of disobeying the Doctor, always ran away as fast as he was able, whenever he espied him in any of his shooting excursions afterwards.

After having directed our route for some time to the north-eastward, we arrived before night at the coast directly opposite to our vessels. We expected to be immediately taken on board, as we had been promised that a boat should be sent to fetch us, as soon as we wanted one. This might have been done in five minutes; but we were obliged to wait two hours on the shore. It would have
have been a very proper regulation, if a boat had been kept expressly for the use of those gentlemen of the expedition who were appointed to make researches into natural history.

A bird that was shot upon one of the lakes, surprised us very much by the singularity of its plumage. It was a new species of the swan, of the same beautiful form, but rather larger than ours. Its colour was a shining black, as striking in its appearance as the clear white of ours. In each of its wings it had six large white feathers; a character, which I have uniformly remarked in several others that were afterwards killed. The upper mandibule was of a red colour, with a transverse white streak near the extremity. The male had at the base of it an excrescence consisting of two protuberances, that were scarcely observable in the female. The lower mandibule is red at the edges and white in the middle. The feet are of a dark grey. (See Plate IX.)

24th. It was ten o'clock of the next morning, before I could finish my description and preparation of the specimens I had collected the preceding day. I then went to examine the country situated to the eastward of our anchoring station. It frequently happened that after having penetrated into the woods to the distance of 500 toises, at most, from the shore, I was obliged to return towards
towards the coast on account of the difficulties that obstructed my passage, which was not only impeded by the underwood, but often rendered impracticable by the stems of large trees thrown down by the wind. The direction in which they lay upon the ground, which was generally from south-west to north-eaft, proves that they were torn from their roots by violent south-west winds. As these trees shoot out their roots in an almost horizontal direction, they are easily torn from the ground by the force of the wind, and frequently carry with them a great quantity of earth, which at a distance appears like a wall raised by the hands of men.

The finest trees in this country are the different species of *eucalyptus*. Their ordinary thickness is about eighteen feet: I have measured some that were twenty-five in circumference. The spongy bark of the *eucalyptus resinifera*, becoming slippery in consequence of the moisture that constantly prevails in the heart of these thick forests, renders it still more difficult to penetrate into them. This bark very readily peels off into pieces that have a great degree of flexibility, and are used by the natives for covering their huts. They often find long stripes of it about a foot in breadth, which spontaneously shell themselves off from the lower part of the trunk. They might easily peel it
it off in pieces of twenty-five or thirty feet in length.

Most of the large trees near the edges of the sea have been hollowed near their roots by means of fire. The cavities are generally directed towards the north-east, so as to serve as places of shelter against the south-west winds, which appear to be the most predominant and violent in these parts. It cannot be doubted that these cavities are the work of men; for had they been produced by any accidental cause, such as the underwood taking fire, the flames must have encompassed the whole circumference of the tree. They seem to be places of shelter for the natives whilst they eat their meals. We found in some of them the remains of the shell-fish on which they feed, and frequently the cinders of the fires at which they had dressed their viands. The savages, however, are not very safe in these hollow trees; for the trunk being weakened by the excavation, may easily be thrown down by a violent gust of wind; neither are their seats very commodious, as the ground is very uneven, and we observed no contrivances to render it more level. Anderson speaks of hearths of clay, made by the natives in these hollow trees. Whenever I have found any clay in them, it did not appear to me to have been placed there by the savages; but one
one frequently meets with it piled up between the roots in consequence of natural causes. At any rate, the natives of this country, as we shall see hereafter, do not make their fires upon hearths, but kindle them on the bare ground, and prepare their victuals over the coals.

Some of the largest trees were hollowed by the fire throughout the whole length of their trunks, so as to form a sort of chimneys: nevertheless they continued to vegetate.

Many of the large trunks that we felled during our stay at this place, were found, notwithstanding their apparent soundness externally, to be rotten at the heart.

After having followed the shore that extends with numerous windings, towards the south-east, we attempted to make our way across some marshes, in order to get into grounds that had acquired a more solid consistence from the roots of the plants; but a species of the _selerya_, which grows to the height of six or eight feet, cut our hands and faces, with its leaves, in such a manner that we were obliged to desist from our attempt.

During this excursion I killed several birds of the genus _motacilla_, and some parrots, amongst which was the parrot of New Caledonia, described by Latham.

We now directed our route towards the en-
trance of the harbour, where tents had been pitched for the purpose of taking observations, as we were sure of meeting there with a boat to carry us on board.

The astronomers expected the first of Jupiter's satellites to appear at about a quarter of an hour after eight in the evening; but with all their activity they could not get their instruments ready in due time; so that the opportunity was lost. Bonvouloir, one of our officers, who had made the preliminary calculations a long time since, was so affected by this disappointment, that he wept like a child.

One of our crew shot a young kangaroo upon the shore. The animal, after running about a hundred yards along the sand, threw himself into the sea and expired. It was remarkable that he used all his four feet in running, not supporting himself solely upon the hinder feet, as he is usually represented to do; though these as well as the fore, are without hair on the inner side. As he goes in quest of his food more in the night-time than during the day, nature has provided him with the membrane termed by zoologists *membrana nictitans*, situated at the interior angle of the eye, which he can extend at pleasure over the whole ball. His stomach was full of vegetables, and divided by three very distinct partitions,
which seem to approach him to the class of the ruminant quadrupeds. His testicles were on the outside of the abdomen. These animals probably find a part of their food on the sea-coast, as we frequently observed the prints of their feet in the sand.

25th. Having left some of my plants in the hands of the painter, that he might take a drawing of them, I followed the windings of the coast in a south-east direction. The large slippery pebbles which covered the strand were a great impediment to us in walking.

We found on the skirts of the forest a fence constructed by the natives against the winds from the bay. It consisted of stripes of the bark of the eucalyptus resinifera, interwoven between stakes fixed perpendicularly into the ground, forming an arch, of about a third of the circumference of a circle, nine feet in length and three in height, with its convex side turned toward the bay. A semicircular elevation covered with cinders, and heaped round with shells, pointed out the place where the natives dressed their victuals. Such a fence must be of great service to them to prevent their fires being extinguished, when the wind blows with violence from the sea.

Having crossed a promontory of the coast, we walked with difficulty over the loose sands, which
cover a large tract of land, that sometimes lies under water.

We found another of the fences above described on the skirt of the forest. It was of the same construction and height as the former, but twice as long. Within it were broken pieces of drinking vessels made of the *fucus palmatus*.

We arrived at the borders of a lake, which is connected with the sea at flood-tide. Its greatest length was 750 toises, and its breadth 250.

On our return by a more direct road through the woods, we saw some unfinished huts of the natives. They consisted of branches fixed by both ends into the ground, and supported the one upon the other, so as to form a frame-work of an hemispherical form, about four feet and an half in height. The branches were fastened together with the leaves of a species of grass; and the buildings seemed to require nothing more in order to be completed, than to receive their coverings of bark, which renders them impenetrable to the rain.

It seems that human beings are here either very few in number or in a very savage state. Though a great number of the men from both vessels had penetrated very far into the country, they had not met with a single inhabitant.

The Cape of Van Diemen is subject, in conse-
sequence of its high latitude, to very violent winds, which blow from the mountains in blasts. Fearing that our cables might rot upon the muddy bottom of this harbour, we had taken them on board and held on our chain. A sudden and violent gale from N. W. drove us from our anchorage, to the east side of the harbour, where we ran aground in the mud. After having drawn in the piece of cable to which the chain was fastened, we found that one of the links had been broken; though upon examining it we could not perceive any flaw in the iron. It appeared that the chain had been made of brittle metal. We thought it fortunate that it had been put to the proof in a harbour, where we ran no other danger than that of being stuck in the mud; otherwise this chain, upon which our safety depended, would have become the cause of our ruin.

26th. I remained the whole day on board, employed with preparing and describing the numerous curiosities of natural history, which I had collected on the preceding days.

On the following day, soon after dawn, we set out with a design of penetrating as far as we were able into the country. We were set on shore towards S. E. After having followed the windings of the shore for some time, we came to a road frequented by the natives, which enabled us to enter
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enter the forest in a south direction. We afterwards arrived at a fine sandy beach, extending about 1000 toises in the same direction.

A beautiful species of *erigeron*, the woody stem of which is covered with very small bulbous leaves, grew in this dry ground. Though there was very little wind, the waves broke with violence over a great extent of the beach. We regularly observed that, after three successive waves, one much larger than the rest followed and broke higher upon the beach, so as to oblige us to keep further off from the shore.

On a small rising ground of the coast, I found the species of the *banksia*, denominated by Gærtner *banksia gibbosa*. Whilst we were journeying through the forest, at a small distance from the shore, one of our company observed a young savage, who was running away affrighted by a shot which had been fired at a bird. As soon as we were informed of it, we all ran in pursuit of him, being very desirous of having an interview with some of the natives. But all our search was in vain; for the young savage had disappeared by rushing into the thickest of the forest at the risk of tearing his skin; for he was stark naked. We found one of the fences against the sea-winds at the place where he had been first seen.

The hope of meeting with some of the savages determined
determined us to penetrate farther into the forest, with a resolution to pass the night there. We walked for the space of an hour towards the south-east, over a very rugged path, before we arrived at a large plain that extended as far as the sea-shore. A beautiful species of the mimosa grew here, with long oval leaves, and generally about twenty-five or thirty feet in height.

Night compelled us to look out for a place of shelter. We could not have recourse to the cavities burnt in large trees by the natives, as we were too far distant from them: we therefore constructed a hut of branches, which we had lopped from the trees with a pole-axe that one of our company carried with him for his defence. The hardness of the ground was meliorated with a bed of fern, of a species very nearly resembling the polypodium dichotomum.

Being close to the shore, we had a very extensive prospect, but observed no signs of the natives being near us. We kindled a fire as the weather was very sharp.

We were not altogether easy with respect to our means of subsistence; for when we left the ship we had furnished ourselves with but one day's provisions; but as sailors are used always to take some sea-biscuit with them when they go on a journey, those who accompanied us were still provided
provided with some of it. With this stock of eatables, our most necessary requisite was water, which we were obliged to send for to a distance of 1000 toises. Such a supper as this certainly required a good appetite.

As we were seven in number, we had not much to fear from the natives. We however settled it that every one should stand upon watch in his turn, that we might be informed of their motions in case any of them should come near us.

The severity of the cold obliged us to quit our hut and lie down to sleep round the fire.

28th. As soon as it was day we went out with our guns, to endeavour to shoot something for our breakfast. We soon killed a couple of rooks, which were immediately broiled and eaten, as if they had been the most delicate food.

We had been obliged to reduce ourselves to a very moderate allowance on the preceding evening, that we might have means of subsistence for the following day; but we found, when it was too late, that the person to whom we had intrusted the care of our provisions, was not to be depended upon, for of the six biscuits that had been committed to his charge, only four were left. Had he carried his breach of trust a little farther, we should have been obliged to return to the ships immediately, with the mortification of being
ing compelled to relinquish our intended re-

We soon arrived at the borders of a large lake, connected with the sea by a channel about 120 feet in breadth. We attempted to ford it, but it was too deep about the middle.

Amongst a great variety of other plants that grew in the neighbouring woods, I observed several species of a new genus of the *pedicularia*, very nearly resembling the *polygala*. Amongst the shrubs which ornamented the grounds near the shore, was a beautiful species of sensitive plant with simple leaves, the stalk of which was bent into the form of the letter S.

We saw a large flock of black swans falling upon the lake; but they were not within reach of our guns. Some small islands were visible towards S. E. near the opposite shore of the lake. We killed a number of snipes of different kinds while we directed our march towards S. W. in order to arrive at the farthest extremity of the lake. The bottom of the lake is here so even, that throughout a surface of more than fifty toises in length, the water is hardly more than a foot and an half deep. It is covered with a prodigious quantity of shells, many of which are decayed in consequence of the length of time they have lain there.

The
The *crifa marina* is found upon these shores. I discovered at a little distance from them a new species of parsley, which I named *apium prostratum*, on account of the position of its stem, which always creeps along the ground. Its analogy with the other species of the same genus, led me to think it might be good to eat, and it answered my expectations. We carried a large quantity of it on board with us, which was acceptable to mariners who felt the necessity of obviating, by vegetable diet, the bad effects of the salt provisions on which we had lived during the whole of our passage from the Cape of Good Hope to that of Van Diemen.

Cretin, one of the officers of our ship, together with the engineer, had been sent with the long-boat by our Commander, in order to reconnoitre Tempeft-bay. They brought intelligence at their return, after having advanced fifteen or twenty thousand toises into a channel which we had left on our right when we entered the bay, that every appearance concurred to make it probable that this was a strait. Wherever they had founded they found very good anchorage ground.

29th. I was very little on shore during the two following days.

30th. The whole forenoon I employed in describing and preparing the copious collections which
which I had made on my last excursion. In those parts of the country which I examined in the afternoon, I found several plants of the tribe of *orchis*, some of which I gave to be copied by the painter.

The fishing nets were regularly sent out every evening, and abundance of fish was taken. The meals we now made on board contrasted very strikingly with those we had been obliged to put up with during our passage.

I must here remark, that those of our company who were engaged in the pursuit of natural history, were not permitted to take with them, on their excursions, the smallest quantity of that allowance of fresh provisions which we claimed as our right: ship's biscuit, cheese, brandy, and sometimes a little salted bacon, was all that was provided for us. The reasons we alleged were sufficient to evince the justice of our demand; nevertheless, we had no other provisions allowed us on these occasions, during the whole course of our expedition. I should have passed over this circumstance in silence, had I not thought that it might afford a useful hint to persons employed in the same pursuit, who may hereafter be engaged in such expeditions.

**May 1st.** I resolved to examine the other coast of the harbour to the eastward. The bottom was here
here so shallow, that we could not come close to the land with our boat, so that we were obliged to wade part of the way in the water.

I followed the coast in a northerly direction, sometimes penetrating a short way into the forests. As it was low-tide, I walked with great facility along the shore, where I observed several small holes, in the form of a tunnel, made in the sand, each of which contained a small crab at the bottom. Upon drawing out the animal, it soon crawled back into its hiding place, which, as I judge from its analogy with that of the *formica leo* in our country, serves it likewise as a trap to catch its prey.

I was agreeably surprised by the singular form of a new species of fungus, which grew amongst the mosses with which the ground was covered. I named it *aseroë*, on account of the disposition of its radii.

Its roots are small filaments attached to a fungous tubercle, which supports a globular *volva*, of a whitish colour and gelatinous consistence, marked both within and without with seven *striae*.

From the centre of this *volva* proceeds a *stipes* of a reddish colour, and an almost cylindrical form, hollow throughout, and open at its superior extremity, which forms a sort of cup, of a fine red
red colour, and divided into seven *bifurcate radii*, yellow at their extremities. The whole surface of this fungus is smooth.

This new genus ought to be placed next in order to the genus *phallus* of Linnaeus.

Explanation of the figures in Plate XII.

*Fig. 1.* The fungus.

*Fig. 2.* A transverse section of the volva, shewing its interior parts.

*Fig. 3.* A longitudinal section of the stipes.

The declivities of the mountains situated to the eastward, form a pleasant valley, from whence the waters, collected there by the union of a great number of small streams, are discharged into the bay. By washing the stems of the large trees which cover the country, through which it flows, the water acquires a brownish tinge. The closeness of the shrubs, and the marshes which occupy the low grounds of this valley render it very difficult of access. We were, however, resolved to attempt it at the risk of sticking fast in the mud; but were often stopped in our progress, by a new species of the *feleria*, to which I gave the name of *feleria grandis*, as it frequently grows to the height of twelve feet. Its leaves are as sharp at the edges as a piece of glass; its berries are oval and of a reddish colour, and contain a sort of almond, which

4. Spider which the Caledonians use.

[Handwritten note: 'Dated by L. Stockdale, Philadelphia, 1st April, 1809.']
which the parrots frequently feed upon, notwithstanding the hardness of the shell which surrounds it.

The most common shrub in these low grounds was a new species of the *embothrium*, remarkable for the hardness of its leaves. These leaves are of an oval form, three inches in length and one in breadth.

We followed a very difficult path, in order to arrive at the place where our men were taking in water. Night overtook us before we had finished more than half our journey, and to add to our misfortunes, a very high wind from the west brought with it such a heavy rain, that we were obliged, like the savages of New Holland, to seek for shelter in hollow trunks of trees. We had reason to apprehend that the signals we made for a boat to come to fetch us, would be rendered useless by the rainy weather, and were beginning to make preparations for passing a very unpleasant night in the midst of the forest; when we heard the voices of some sailors who were sent to fetch us on board.

They had at length succeeded in extricating the anchor to which the chain that was broken on the 25th of April had been fastened. The drag had been used in vain as the chain was sunk too deep into the mud. The hold of the anchor in the
the ground was so strong, that the two long boats lashed together were repeatedly filled with water whilst they were hauling at the buoy-ropes. Besides, it was sunk so deep, that the divers could not find its bill: it would have been better if the main capstan had been used. They then became sensible of the necessity of doubling the buoy-ropes and heaving the anchors from time to time, to prevent them from sinking too deep in the muddy bottom.

Two boats had been sent a second time to reconnoitre the north-east side of Tempeff-bay, as far as Cape Tasman. They returned at the end of four days, and it appeared to result from their observations, that Tasman's head-land and the coast of Adventure-bay made part of an island separated from Van Diemen's land by the sea. After they had gone up the channel as far as 43° 17' S. lat. they were obliged to return for want of provisions.

2d. My occupations on board did not permit me to go far into the country.

3d. On the following day we traversed a glade that extended in a north-east direction, and conducted us to the great lake. We had examined the southern side of it in a former excursion, but we wished still to visit its northern coast, the various situations of which gave us reason to expect
an abundance of natural curiosities: nor were our hopes deceived. This coast was in many places formed of high banks, very difficult of access; the water frequently extending as far as the foot of the hills. Different species of *mimosa*, with simple leaves, grew under the shade of the large trees.

It appears that the natives sometimes fix their habitations upon the borders of this lake, which affords them abundance of food in the shell-fish it contains. We found a hut which they had built a few paces from the shore, of a semi-oval form, about three feet and three quarters high, and four feet broad at the base. It consisted of branches fixed at both ends into the ground and bent into a semi-circular form, supporting each other, so as to form a pretty solid frame-work, which was covered with the bark of trees.

Amongst a number of other curious plants which I collected, I was struck with the beauty of the flower of a new species of *aletris*, remarkable for its bright scarlet colour.

As the season was already far advanced, we found very few insects.

Some hours before sun-set we directed our course to the south in order to return to our ships; but it was already dark before we arrived at a sandy beach that we were acquainted with. We were
were still at a great distance from the ships, and it was not before half an hour after nine o'clock that we arrived at the tents of observation, from whence we were soon conveyed on board.

5th. I remained on board during the greater part of the two following days, and employed myself with stuffing the skins of a variety of rare birds, and describing the natural curiosities which I had collected.

The want of room in our vessel put me under the necessity of drying the plants, which I had preserved in paper, at the fire. As my cabin was already full, I had no other place where I could deposit some of my specimens of plants that had not got perfectly dry than the great cabin. Dauribecu, who acted as first lieutenant, thought that this place ought not to be lumbered with such useless things as natural curiosities, and ordered my two presss, with the plants they contained, to be turned out. I was obliged to appeal to the Commander, who annulled this act of authority, and ordered that the presss should remain where I had placed them.

At low water we found a variety of curious shells on the shore. This harbour afforded us great plenty of very fine oysters.

The east coast of the harbour contained a quantity of pyrites in crystals of various forms.
We likewise observed large masses of silex in very close strata, which bore a great resemblance to petrified wood.

One of our carpenters killed an amphibious animal of the species known by the name of *phoca monachus*, about six feet in length.

Physiologists have explained in a very ingenious manner how amphibious animals are enabled to remain so long under the water by means of the foramen ovale; but, upon examining the heart of this animal with the utmost attention, I did not find that it had any foramen ovale. Probably the same may be the case with many other amphibious animals. By pursuing these researches we may one day discover the true cause of the astonishing faculty possessed by these animals, of living equally well both in the air and in the water.

Each side of its lungs is divided by a transverse fissure into two lobes.

The stomach, which resembles in shape very nearly that of a hog, contained a large quantity of calcareous sand, amongst which I observed several shell-fish that were still entire. The first part of the function of digestion in this animal seems to consist in destroying the shell in which the fish is enclosed, whereby a quantity of sand is produced in its stomach, which does not appear

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to pass through the rest of the intestinal canal, but is probably disgorged in the same manner as many snakes disgorge the bones of the animals on which they feed. Possibly too this sand may serve them as a sort of ballast, by which they are enabled to keep themselves at the bottom of the sea.

As the food upon which they live is very easily found, their mouth is formed with a very small orifice. As they live more in the water than in the air, they require a great power of refraction in the humours of the eye; whence the vitreous humour is found to be very dense. They are likewise provided with the membrana nictitans, whereby they are enabled to admit a greater or lesser quantity of light to the eye at pleasure.

The great variety of my other occupations did not permit me to pursue these anatomical investigations any farther.

The dried excrements of this animal produce a very fine powder of a deep yellow colour, which our painter thought might be used with advantage in the arts.

6th. I had not as yet been able to procure any of the flowers of a new species of the *eucalyptus*, remarkable by its fruit, which very much resembles a coat-button in shape.

This tree, which is one of the tallest in nature,
as it grows sometimes to the height of 150 feet, blossoms only near its summit. Its trunk exactly resembles that of the *eucalyptus resinifera*, when its spongy bark has been peeled off. In other respects these two species are nearly of the same dimensions. The trunk, which is very straight, at least to one half of its height, might be usefully employed in ship-building, and especially for masts, although it is neither so light nor so elastic as that of the fir. Possibly it might be of advantage to construct masts of different pieces of timber, and even to perforate the large trunks of trees throughout their whole length, so as to render them lighter, and to give them strength by binding them at equal distances with hoops of iron. By this means, I should think, they might be rendered as strong as one could wish; since persons versed in mechanics know that a cylinder, though hollow, still retains a great degree of strength.

We were obliged to cut down one of these trees in order to obtain its blossoms. Being already in a very slanting position, it was easily felled. As the sun shone very bright the sap was mounting in abundance, and as soon as the tree was cut down it flowed very copiously from the lower part of the trunk.

This beautiful tree, which belongs to the tribe of the myrtles, has a very smooth bark; its branches
branches are somewhat crooked, and have towards their extremity alternate leaves, slightly bent, and about six inches in length, and one-half in breadth.

The flowers are solitary, and grow from the base of the stalk of the leaf.

The calix is shaped like an inverted urn, and consists, like that of the other genera of the same tribe, of a single leaf, which falls off as soon as the stamens are completely formed.

It has no corolla.

The stamens are numerous and attached to the sides of the receptacle.

The style is simple and divided at its base into four partitions. It has only one stigma.

The capsule is open at the top, and generally divided into four partitions, which contain a number of angular seeds; at the base it has four angles, two of which project more than the rest. It is shaped like a button; on which account I have denominated this tree *eucalyptus globulus*.

Explanation of the Figures in Plate XIII.

*Fig.* 1. Branch of the eucalyptus globulus.

*Fig.* 2. Flower.

*Fig.* 3. Fruit.

*Fig.* 4. Calix.

The bark, leaves and fruit of this tree are of
Eucalyptus Globulus.

Put \textsuperscript{2} by I. Steudle, Printeller, 18\textsuperscript{th} April 1800.
an aromatic nature, and might be employed for economical uses in the place of those aromatics with which we have hitherto been furnished exclusively by the Molucca Islands.

On the seventh, I was obliged to employ almost the whole day in preparing my collections, which accumulated prodigiously from day to day. I could therefore extend my researches only to a very small distance from our anchoring-station. But on the following day, I set out in the afternoon with a design of spending three or four days in the woods without returning at night to the ships. I was obliged to take this resolution in order to collect specimens of such plants as only grew at a considerable distance from our station.

We had a great variety of different kinds of European grain on board, which might be advantageously propagated at this extremity of New Holland. The temperature that generally prevails in this country led us to hope that they would succeed. Our gardener was directed to prepare a spot of ground so as to render it fit for receiving this deposit. He dug a small garden for this purpose on the east coast of the harbour, situated E. N. E. of our place of anchorage.

We slept on the banks of a rivulet near the western extremity of the great lake, along the southern
southern coast of which we directed our route on the following day. We saw some pelicans; but they did not come within gun-shot of us.

Piron, the painter to the expedition, who was of our party, took several drawings of the landscape. The round hills, covered with tall trees, which bounded the horizon added greatly to the beauty of the prospect.

We were obliged to return back by the road we had come, in order to arrive at the opposite side of the lake. Piron returned on board.

I discovered an evergreen tree, which has its nut situated, like that of the acajou, upon a fleshy receptacle much larger than itself. I therefore named this new genus *exocarpos*.

It has hermaphrodite flowers upon the same peduncle with others which are distinctly male and female.

The male flowers have a calix divided into five roundish leaves; they have no corolla; the staminalnai, which are five in number, are small and attached to the calix between its divisions; the germin abortive.

The female flowers have a calix similar to that of the male; but neither corolla nor staminalna: the ovarium is globular, with a short style; the stigma circular and flat.
Excavus Cupresiformis.

Dedication by J. Lindley, Flora fide, 24 April 1829.
In the hermaphrodite flowers, the calix, stamens and ovarium are as I have described them in the others.

The fruit is a nut of an almost spherical form, and of a blackish colour, placed upon a receptacle, fleshy, red, divided in the middle, and about three times as large as the nut.

The kernel is of an oily nature, and of the same shape with its shell.

The principal characters of this plant have led me to rank it among the terebinthinaceous tribe, next to the anacardium. I have given it the name of *exocarpos cupressiformis*.

Explanation of the Figures Plate XIV.

*Fig. 1.* A branch of the *exocarpos cupressiformis*.

*Fig. 2.* Portion of a branch in flower.

*Fig. 3.* Germin, with its style and stigma.

*Fig. 4.* Fruit.

*Fig. 5.* The fruit divided longitudinally, showing a cavity in the middle of the fleshy peduncle.

*Fig. 6.* The nut.

*Fig. 7.* Part of the woody substance surrounding the nut.

Towards the close of the evening we arrived at the banks of a rivulet, where we fixed our place of abode for the night. I observed at this southern extremity
extremity of New Holland several species of anci-
strum, analogous to those found at the southern-
most extremity of America.

We were surrounded with pleasant groves, con-
sisting for the greater part of a beautiful species
of thefium with ftrait leaves.

The cold had obliged us to kindle a large fire. Some of us were scarcely beginning to fall asleep, when we suddenly heard the cry of a beast of prey at a few paces distance. Our fire had probably been of greater service to us, in preventing this animal, which from the sound of its voice we believed to be a leopard, from approaching nearer, than we should have expected when we kindled it.

I had found, on one of the preceding days, the upper jaw-bone of a large animal of the carnivorous tribe.

10th. As soon as the day appeared, we con-
tinued our journey on the borders of the lake. At a very small distance from the coast we ob-
served five islands covered with trees, which form-
ed an agreeable contrast with the level surface of this vast sheet of water.

We perceived, for the first time in this coun-
try, several quails that flew at a great distance from us.

After marching for several hours towards the
north
north-east, we found upon a small hill, under the shade of some very tall trees, two huts of the same construction with those we had seen before. They were in perfectly good preservation, and seemed to have been lately inhabited.

I discovered a very beautiful plant, which forms a new genus very distinct from any that has hitherto been described. It resembles the iris, but has only two stamena. On account of this singularity, I gave it the name of *diplorenna*, and on account of its affinity with the genus *morea*, I called it *diplorenna morea*.

The spathe has two partitions, and incloses several flowers, which leave it one after the other when they are ready to blow. They fade much sooner than those of the *iris* and *morea*, so that I should have given up all hopes of having them copied, if new ones had not followed the others which withered almost immediately after I had plucked the plant from the ground.

Like the iris, it has no calix.

The corolla has six petals, three of which are interior, and much smaller than the exterior: of the three interior petals, the superior is rather smaller than the rest, and more inflated towards the base.

Upon examining a great number of the flowers, I have uniformly found that they contain only two
two stamens, the filaments of which terminate in a point supporting antherae of a white colour, and marked with two siffures. In the place of a third stamen, I have only found a small filament, without any antheræ, situated between the superior interior petal.

The ovarium is inferior. It has three angles, and is supported by a long peduncle.

The style is a little longer than the stamens, cylindrical, and terminated by a stigma shaped like a shepherd's crook.

The capsule has three partitions, containing several spherical seeds, which are fixed to a receptacle that extends from the middle of the partitions to the top.

This genus, which naturally ranks after the iris and the morea, has all the habitudes of those plants. Its leaves are of the same sword-like form, with their edges compressed near the base.

Explanation of the Figures in Plate XV.

*Fig. 1.* The plant.

*Fig. 2.* The flower-buds displayed by cutting away thespatha. A full-blown flower with the three exterior petals torn off.

*Fig. 3.* An exterior petal seen from its inner surface.

*Fig.*
Fig. 4. The same petal seen from its outer surface.

Fig. 5. Interior petals turned down, to give a view of the stamina and style.

Fig. 6. The stamen seen through a magnifying glass.

Fig. 7. The style with its stigma.

Fig. 8. A part of the germen, the stamen and style having been taken away, in order to shew the small filament, which is found in the place of a third stamen.

Fig. 9. Lower half of the capsule divided transversely, to shew the three partitions.

Fig. 10. Upper half of the capsule divided longitudinally, to shew the seeds.

As we were walking through a small grove, where the underwood grew very thick, I roused a large kangaroo at a very small distance from me. He immediately ran a length of about thirty paces through one of those narrow paths which these animals make for themselves through the thicket, where they are obliged to use all their four feet, as they have no room for an erect posture; and having reached the farther end, bounded away over the bushes with such swiftness, that we soon lost sight of him.

We found a sheet of water covered with a prodigious number of wild ducks, which flew up
when we were quite close to them; but we were so little prepared for such good fortune, that we were not able to kill a single bird.

A high wind sprung up towards night, which seemed to threaten rain. As we had no place of shelter near us, we were obliged to sleep in the open air. We constructed a fence against the wind with branches, under shelter of which it was easy to kindle a large fire.

11th. On the following day we directed our course eastward, and traversed a vast plain, beset in many places with marshes, where the plants with which they are overgrown conceal the danger one is exposed to in passing through them. The water collected in the lowest situations gives rise to a number of very fine rivulets.

A very large kangaroo sprang out of a bush about four paces from me. I pointed my gun at him, but it missed fire, and the animal walked off very composurely, following one of those tracks through the thicket which they usually frequent. These tracks are covered passages which cross each other in every direction, and run very close one to another. The numerous prints of the feet of those quadrupeds observable upon them, shew that they abound in this country. The best way of catching them would be to hunt them with dogs, as they generally keep themselves in the
the thickest part of the woods. Their tracks generally terminate at some rivulet.

Having exhausted our stock of provisions, we were compelled to endeavour to reach the ships before night. We wandered about the woods a long time before we arrived at the north-east extremity of the harbour, from whence we had a distant view of our vessels. It was not without great difficulty that we reached the place where they rode at anchor, as we had to pass through many very rugged grounds.

12th. The whole day was hardly sufficient for me to prepare and describe what I had collected on our last excursion.

Having left some of my specimens which could not be preserved without being daily attended to, in the care of one of the servants, who remained on board during my absence; I had the satisfaction to find them in good condition.

Citizen Riche found some human bones amongst the ashes of a fire made by the natives. Several bones of the pelvis he discovered by their form to have been part of the skeleton of a young woman: some of them were still covered with pieces of broiled flesh. I am, however, scrupulous of ranking the natives of this country with the cannibals: I rather suppose that they have the custom of burning the bodies of their dead;
as these were the only human bones that were seen during the whole of our abode in this place.

On the 13th I went to the place where our men were taking in their water. It was furnished by a small rivulet, which discharges itself into the harbour, after flowing amongst the trunks of fallen trees with which the country is covered. The rotten wood gives the water of this rivulet a brownish tinge. They were obliged to roll the casks upwards of a hundred yards to the boats, as these could not come nearer to the shore on account of the shallowness of the bottom.

We found the carpenters employed in raising the sides of our pinnace, which had shortly before been overcast whilst it was failing in the harbour. The crew had been obliged to save themselves by swimming till assistance was brought them. It had been furnished with too high a mast, and much too large a sail, by the lieutenant, who ought to have understood the proportions better.

The wood made use of by the carpenters was that of the new species of the eucalyptus, which I have denominated *eucalyptus globulus*. They thought it very good timber for ship-building.

A perpetual moisture prevailed in the thick forests into which I penetrated towards S. W. Mosses and ferns of various kinds grew there with great luxuriance. I killed a bird of that species of
of the *merops*, which White has denominated the wattled bee-eater, and of which he has given a very good engraving. It is remarkable for its two large excrescences on each side of its head.

I was obliged to make great haste in preparing the skins of the birds which I wished to preserve; for the flesh, when exposed to the air, very soon became full of small living larvæ, deposited in it by a fly of a reddish brown colour, which is viviparous like that of our country, known by the name of *musca carnaria*. These larvæ accelerate the putrefaction of flesh in a surprising manner.

As we intended to weigh anchor on the following day, I wished to make the best use of the last moments of our stay in this place, and went on shore at the easterly coast nearest to our vessels.

I visited, in company with the gardener, the spot where he had sown different kinds of European grains. It was a plot of ground of twenty-seven feet by twenty-one, divided into four beds. The soil was rather too full of clay to insure the success of the feed.

When we had entered the woods, a quadruped of the size of a large dog sprang from a bush quite near to one of our company. This animal, which was of a white colour spotted with black, had the appearance of a beast of prey. There can be little doubt that these countries will at some future
future time add several new species to the classes of zoology. A spinal vertebra, that was found in the interior part of the country, the body of which was about four inches in diameter, gives reason to believe that very large quadrupeds will some time be discovered here.

A very heavy rain, which overtook us about the middle of the day, obliged us to halt. We sheltered ourselves in the hollow trunk of a large tree that was upwards of twenty-four feet in circumference. We attempted to kindle a fire in it after the manner of the New Hollanders, but the smoke soon drove us from our retreat.

We endeavoured to penetrate into parts which we had not yet visited. A glade, at which we arrived, seemed to conduct us towards the north-east plain. We had only three hours of the day before us. A steep ascent impeded our journey, large trees heaped one upon another obstructed the path, and the shrubs, to which the moisture that prevails in these forests, give an uncommonly luxuriant growth, increased the difficulties we had to encounter. Amongst these shrubs was a beautiful species of polypodium, the stem of which grows to the height of twelve feet. *

* The reader will easily excuse me for not enumerating by name all the curiosities of natural history, which I collected during this expedition; especially as I intended to do it in a separate work.
Towards close of evening we found ourselves on the borders of the lesser lake. The woods that surrounded it did not permit us to follow it dry-shod in all its windings: the water through which we had to wade was, fortunately, not very deep. Notwithstanding the darkness of the night, I discovered a new species of _resilio_, which I had never seen before.

This lake, though it is connected with the sea at high water, does not abound with fish. Some of the crew of the Esperance had been here, with their nets, but caught nothing.

Having reached the sea-shore, we had still a considerable part of our march before us. It was night, and the thick clouds increased its obscurity. Sometimes we were obliged to pass over large blocks of rounded stones washed by the surge. We groped our way along the shore, at the hazard of falling into the sea, and it was with great difficulty that we were able to support ourselves on our feet amongst the wet stones, that were rendered still more slippery by being covered with _fucus_ and other marine productions.

A great number of phosphoric animalcules, of different sizes, were driven on shore by the waves, and afforded us the only light we had to direct our steps.

At length we arrived at the place where the tents
tents had been pitched for taking astronomical observations. We found nobody there, as the instruments had already been carried on board.

Our master sail-maker having gone the preceding day on a shooting excursion, without any companion, had lost his way in the woods, where he was obliged to spend the night. Several guns were fired to let him know where the ships lay at anchor; and in the afternoon he returned on board emaciated with hunger and fatigue. Having set out without any provisions, he had been a day and an half without food. He related, that during the night several quadrupeds had come to smell at him, within a few inches distance. Many of the crew believed him on his word; but we, who had spent several nights in the woods, and had never met with such familiarity from the beasts, were not so credulous; but far from imagining that he wished to impose upon us, we found, in his narrative, the natural effects produced upon the imagination of a man deprived of nourishment, and all alone in the midst of immense and pathless forests.

15th. On the preceding day the large anchor had been drawn up and a smaller one moored, that we might be able the sooner to leave the harbour. The same had been done by the Esperance. Some sudden blasts from the north-east, }
during the night, drove both ships from their anchors and ran them aground in the mud. They, however, suffered no damage, and were easily set again afloat. It was surprising that they should have thought themselves secure with one small anchor, but just moored in a muddy bottom, as this sort of bottom affords very little hold till the anchor be sunk to a considerable depth.

We only waited for a favourable wind to leave the harbour. During the whole day it was contrary, and in the night time it blew with great violence. Dauribeu, however, although we had ran aground only the night before, thought it sufficient to moor a single cable; but his opinion was over-ruled by the rest of the officers, who knew, from experience, the necessity of holding by the large anchor.

During our abode at the Cape of Van Diemen we had only seen the natives at at a considerable distance; those who had observed us having always fled with great precipitation. Some of them left behind them their household utensils, which gave us a very imperfect specimen of their industry. These were baskets, clumsily constructed of the reeds known by the name of *juncus acutus*, and drinking vessels, made of a large piece of *fucus palmatus*, cut into a circular form, and moulded into the shape of a purse. We never found any weapons
weapons of defence in the places from whence they had fled: no doubt, they either carried them away, or carefully concealed them, for fear that we might employ them against themselves.

These scattered huts indicated a very scanty population; and the heaps of shells which we found near the sea-shore, shewed that these savages derive their principal means of subsistence from the shell-fish which they find there.

As we only once discovered human bones in this country, and those partly burnt, it appears that they do not expose the bodies of their dead to the open air. It is difficult to know whether it be their usual custom to burn them: possibly they bury them in the earth, or throw them into the sea.

The great number of tracks marked with prints of the feet of quadrupeds, shew that they abound in this country. They probably remain during the day-time in the thickest part of these inaccessible forests.

A great number of small rivulets discharge themselves into the harbour. The ground was here so full of moisture, that wherever a hole was dug of a moderate depth, it immediately became filled with water.

We generally took copious draughts of fishes with
with our nets; especially when the east and south-east winds drove them into the bay.

Van Diemen’s land was discovered by Tasman in the month of November, 1642. When Captain Cook anchored here four years after Furneaux, in the year 1777, he thought himself the third European navigator who had been upon this coast. Cook did not know at that time that Captain Marion, after having remained here for some time, failed from thence on the 10th of March, 1772. The natives conducted themselves in a very different manner to these two navigators. Possibly the gentleness with which they behaved to Captain Cook, might be an effect of their terror for European fire-arms, of which they had received an idea from Marion’s having been under the necessity of using them against them.

The place of our observatory, situated near the entrance of the harbour to the right of the vessels, was 43° 32' 24'' S. lat. 144° 40' E. long.

The variation of the magnetic needle was 7° 39' 32'' E.

The inclination of a flat needle was 70° 30'.

The tides flowed only once a day. The time of high water in the harbour at full and change days, was between nine and twelve o'clock, the water rising about six feet perpendicular height. The tides were very much influenced by the winds, which
which often advanced or retarded them by several hours.

The sheltered situation of this harbour, renders it the most commodious in the world for vessels to put into in order to be repaired. The vast forests, with which it is surrounded, furnish a timber which our carpenters considered as very proper for ship building, and which they employed with great advantage.

During our stay of nearly a month at this place, the weather was very unfavourable for making astronomical observations. The season of the year was likewise not an eligible one for investigating these coasts, which was rendered still more difficult by the violence of the winds.

Whilst we remained at the Cape of Van Diemen, the north-west and south-west winds were very violent: the former were generally attended with storms and heavy rains.

As soon as it was day the vessels were towed to the mouth of the harbour, from whence we failed with a north breeze towards the new strait, which we intended to enter.

After ranging along the windings of the reef, which we had left on our larboard side when we entered Tempeft-bay, we were at ten o'clock in the forenoon at the distance of about 7,600 toifes from the entrance of the strait, which bore N. N. W.
N. N. W. when we trimmed our sails as sharp as possible.

The summits of the highest mountains were already whitened with the snow. These mountains form part of a chain which extends from south-east to north-west, and terminates near the farthest extremity of the harbour.

We were much gratified in viewing, from the ship, the places which we had lately visited in our excursions.

At one time we observed a thick smoke ascending from the distant country to the northward of the great lake, and soon descried five of the natives walking away from a fire which they had just been kindling on the shore: one of them carried a fire-brand in his hand with which he lighted the flames in different places, where the fire presently caught and was almost as soon extinguished.

We plied to windward, keeping in with the coast; as we had no danger to apprehend from approaching it.

A slight breeze from the north, as well as the tide, being against us, we could not enter the strait before night. We therefore cast anchor at the mouth of it, in a bottom of grey sand, at the depth of 30 fathoms. The place where we had pitched
pitched our tents of observation was then at the
distance of about 10,000 toises to the westward.

The mercury in the barometer having been
gradually falling for the space of four and twenty
hours, remained stationary at 27½ inches, though
the sky appeared still very clear. We were not
without some uneasiness, as so great a variation
in the barometer had never failed during our stay
in the harbour to be followed by violent winds.
Probably such blew at a distance, but we expe-
rienced none of their effects. During the night
we saw a fire to the west, kindled by the natives.

17th. The current having become favourable
about nine in the morning, we weighed anchor
with a northerly breeze, and plied to the wind-
ward.

We were near enough to the coast to be able
to perceive at the entrance of the strait a sort of
free-stone, similar to that found in port Dentre-
casteaux.

The snows had increased prodigiously upon the
summits of the high mountains, during the pre-
ceding night.

The mercury in the barometer had sunk to 27
inches 4 4-10th lines, though the breeze from
the north still continued slight.

It was night when we entered the strait to
which
which we gave the name of our Commander, Dentrecasteaux. About seven o’clock in the evening we cast anchor in a bottom of blackish mud mixed with shells, at the depth of 22½ fathoms.

We were in lat. 43° 20’ S.; long. 145° 10’ E.

The Esperance was apprised of our having cast anchor by a signal from the main-mast, and did the same at the distance of about 1,000 toises from us.

The slightest agitation produced a great degree of phosphorescence in the sea, during the whole night.

Very violent squalls, accompanied with rain, obliged us to pay out our cable, and unbend our top-gallant gear.

18th. The darkness of the sky kept us impatiently awaiting the moment when we could enjoy the beautiful prospect of the immense bay which forms the entrance of Strait Dentrecasteaux. At length the horizon cleared up. Wherever the eye could reach the coast was indented with spacious bights in the land, where navigators, driven by stress of weather, might fly for shelter with security. We surveyed with astonishment the immense extent of these harbours, which might easily contain the combined fleet of all the maritime powers of Europe. The right foreland of the strait bore S. 43° W.
As the wind abated about 11 o'clock in the forenoon, we availed ourselves of this opportunity to fit out the pinnace. The engineer was dispatched in order to examine whether an opening seen N. 30° E. afforded a passage for our vessels.

The ebb-tide drifted us from eight in the evening till two in the morning at the rate of half a knot every hour to N. W. N.

The stiffness of the breeze preventing us from sending any of our boats to the shore, we were obliged to remain on board.

19th. On the following day we were landed at the distance of 2,500 toises S. W. on an island which bounds this channel throughout its whole length. A boat belonging to the Esperance had passed the night at the same place, and taken a great quantity of fish.

It was a great gratification to me to traverse this country, where I found a large number of new plants, the most numerous of which belonged to the genus of melaleuca, after, epacris, &c.

The shore of the channel afforded us a very easy path through the bushes which are here but thinly scattered. We afterwards climbed up some steep ascents which rise to about 25 toises perpendicular height above the level of the sea. We here observed a quantity of sea-salt deposited by the
the waves in the cavities of the hard freestone which forms the basis of these hills.

We had scarcely proceeded a thousand toises, when the remains of a hut and heaps of sea-shells shewed us that this island was inhabited.

We saw here for the first time the partridge of the Cape of Van Diemen. We sprang a very large covey of them, which lighted at a great distance from us,

Late in the evening we met Citizen Riche, who had passed the night with the fishermen. We gladly accepted his offer to share the fruits of his fishery with us, and he shewed us a small spring, where we had the pleasure of refreshing ourselves with excellent water over a meal of very fine fish and muscles, which we broiled upon the coals after the manner of the New Hollanders. After such a repast we had little occasion for the provisions we had brought with us from the ship.

We were informed that the principal officers of the Recherche had agitated the question among themselves, whether the gentlemen engaged in researches of natural history had any right to the fresh provisions distributed on board, whilst they were employed upon shore in making the collections which the object of their appointment required. Care was taken that none of their number should be admitted to these discussions;
tions; and as they had no one to support their right, the question was soon decided against them, contrary to every idea of justice. I must add, that though the persons who had the charge of providing for our table were frequently changed, they all adhered with the utmost punctuality to the dictates of this inequitable decree.

It was already night when our boat came to fetch us. Riche was obliged to avail himself of the opportunity; otherwise he would have been under the necessity of remaining on shore. He was, however, compelled to stay for the night on board of the Recherche, although it was of great consequence to him to return to the Esperance, as the preparation of the specimens which he had collected, required to be immediately attended to.

20th. A small island, situated S. 42° W. about 2,500 toises from our anchoring station, had been denominated Partridge Island by some of our crew who discovered it. Citizen Riche and myself spent the following day upon the island; but instead of partridges we found a great number of quails there. Whether those who had first visited it had taken the one fowl for the other, or whether the partridges had since left the island, I must leave undecided.

This small island is upwards of 100 toises in length, and situated in 43° 23' 30" S. lat. The
new species of parsley, which I had denominated *apium prostratum*, grew in abundance upon the shore, almost as far as high water mark. We took a great quantity of it on board with us.

Many species of the *casuarina* grew here, and seemed to thrive very well notwithstanding the humidity of the soil. Amongst the plants which I saw for the first time was a remarkable species of the *limodorum*, of which I had a drawing taken; I also collected various kinds of ferns, and a beautiful species of the *glycine*, remarkable for its scarlet flower.

No fresh water is found upon this island; though several forsaken huts shewed that it had been frequented by the savages.

Two of the officers of our vessel, Cretin and Dauribeau, went about six o'clock in the morning to survey the coast to the eastward of our station, where they found several bays extending from N. W. to S. E. They observed several creeks, which formed as many harbours; but a strong contrary wind prevented them from examining them farther into the land. Seeing several fires at a small distance from the shore, they determined to land; when as soon as they had entered the woods, they found four savages employed in laying fuel upon three small fires, about which they were fitting. The savages immediately
ately fled, notwithstanding all the signs of amity which they made them, leaving their crabs and shell-fish broiling upon coals. Near this place they saw other fires and huts.

It appears that this spot is much frequented, as fourteen fire-places were discovered.

One of these savages, who was very tall and muscular, having left behind him a small basket filled with pieces of flint, was bold enough to come quite near to Cretin in order to fetch it, with a look of assurance with which his bodily strength seemed to inspire him. Some of the savages were stark naked; the rest had the skin of a kangaroo wrapped about their shoulders. They were of a blackish colour, with long beards and curled hair.

The utensils which they left behind them consisted of about thirty baskets made of rushes, some of which were filled with shell-fish and lobsters, others with pieces of flint and fragments of the bark of a tree as soft as the best tinder. These savages, undoubtedly, procure themselves fire by striking two pieces of flint together, in which they differ from the other inhabitants of the South Sea islands, and even from those of the more easterly part of New Holland; whence there is ground to believe that they are descended from a different origin.
They likewise left behind them several kangaroo skins and drinking vessels.

The officers forbade the sailors to take away any of the utensils of the savages: they, however, selected two baskets, a kangaroo skin, and a drinking vessel of fucus, to carry to the Commander. The savages had no reason to regret the loss of these utensils, as they left, in place of them, several knives and handkerchiefs, with some biscuit, cheese, and an earthen pot, perhaps too brittle, but certainly a very good substitute for that which had cost them so little labour to manufacture.

The savages, though they took very few of their utensils with them, dropped some of them from time to time on their flight. Whether they might do this in order to be able to run the faster, or whether it was with a design to amuse the Europeans who followed them, I cannot tell.

A boat belonging to the Esperance had been to examine a creek situated to the eastward, at the distance of about 5,000 toises. They had met with one of the natives, who, notwithstanding all the signs of amity they made him, would not let them come within two hundred paces distance of him. A fine rivulet discharges itself into the sea near the farthest extremity of the creek. The situation of this creek, opposite to an island which shelters
shelters it from the surges, renders it an excellent place of shelter for vessels that stand in need of any repairs.

The other creeks which they examined afforded in general very good anchorage.

They discovered a bay that extended so far to the north-east, that they could not get within view of its extremity. Possibly some of these bights in the land may be parts of channels which communicate with the sea on the opposite side.

The preparation of the specimens which I had collected on the preceding days, employed my whole leisure on the 21st.

The gardener went with six other persons in the long boat, with the view of landing at the island which I had examined on the preceding day. After having in vain contended with violent and contrary winds, they left the boat adrift, thinking it would run into a creek under shelter of a small island, situated at the entrance of the channel which they had before endeavoured to reach. But this step was very near proving their ruin: their sail fell into the sea, and the boat, being suddenly stopped in its course, soon began to be filled with water by the violence of the surge. At length they arrived, overcome with fatigue, under the shelter of the island, where the calm that prevailed afforded them a pleasing re-

spite
spite from their toils and dangers. The Commander, anxious about their fate, sent a boat in the afternoon in quest of them, as he knew that whilst the wind remained so unfavourable, the long boat could not return to the ship without assistance. Towards close of evening, we had the satisfaction of seeing them return on board. They told us that having proceeded along the coast in a S. S. E. direction, they found by some fires that the savages were near; that they had soon met with several of them, who were the same that had been seen the day before, but that they did not suffer them to approach them. They found some shell-fish broiling upon the fires which the savages had left with precipitation, and more than thirty kangaroo skins which they found at a little distance, shewed them to be very expert in hunting.

It appeared that they had made use of the bread and water, which had been left for them on the preceding day; but the smell of the cheese had probably given them no inclination to taste it, as it was found in the same condition in which it had been deposited. They found at the same place one of the knives and handkerchiefs that had been left among the utensils of the natives.

Some shots that were fired at birds, probably terrified these savages; for when some of our men
went to the same place two days afterwards, they saw none of them.

22d. The boats were sent to take in water at a creek that had lately been discovered to the eastward. I availed myself of the opportunity to visit this place, which was situated at the distance of about 5,000 toises from our anchoring station. It forms a harbour, about 150 toises in breadth and 500 in length, with sufficient bottom for large vessels to ride at anchor in it. A rivulet that discharges itself into it near its extremity, affords very good water, which, however, was not easily taken in by the boats, since, in order to have it perfectly pure, it was necessary to roll the barrels from the distance of more than 150 toises over the muddy bottom. Our men might have been spared this unhealthy labour, if pipes of leather or of sail-cloth, smeared over with tar, had been employed, by which the water might easily have been conveyed into the boats. The advantages of such a practice will particularly be apparent in cases where the impracticability of entering a rivulet with the boats obliges mariners to take in brackish water; whereas, by means of a pipe carried a few hundred yards higher up the stream, they might procure it without any admixture of sea-water, which renders it very unwholesome to drink.
The banks of this rivulet produced several new species of *casuarina*, one of which was remarkable for the club-like form of its fruit. I also observed a pretty tall shrub, which establishes a new genus of the cruciferous tribe.

The tracks of the kangaroos were very numerous, terminating at the rivulet, where these animals frequently come to drink.

As the wind had been against us when we failed for this watering place, we had a right to expect that it would be favourable to our return; but a calm supervened, and it lasted several hours before we reached the ships.

The pinnace returned after a voyage of four days, in which the whole extent of the strait had been surveyed. It is about 20,000 toises in length from S. W. to N. E. They had everywhere found a depth of at least six fathoms and an half, over a bottom of mud, and sometimes of fine sand. It is separated from Adventure-bay by a narrow strip of land, not more than 200 toises at its greatest breadth.

We now waited only for a favourable wind to follow the strait, in order to take an exact survey of it. The N. and N. W. breezes were contrary, and, besides, so light, that we were obliged to remain the whole day at anchor.
During the night we saw several fires of the natives to S. E.

24th. On the following morning we weighed anchor, and plied to windward at the distance of about 500 toises from the land. We found every where a depth of water of at least 6½ fathoms, over a very good bottom.

Though the thermometer had never indicated more than 7° above the point of congelation, even in the coldest mornings, the snows had greatly increased upon the high mountains seen W. N. W.

Whilst the currents continued favourable we gained ground at every tack; but about six o'clock in the evening they became contrary; and we cast anchor in a bottom of grey sand at the depth of eight fathoms, very near to the coast, and to the northward of the station from whence we had failed in the morning.

The natives kindled more than twenty fires upon the coast towards the south. Many families of them had probably come down to the coast upon hearing the news of our being in the bay.

25th. About seven in the morning the current was favourable, and we made several tacks in order to enter a narrower part of the channel, where we ranged very near to the west coast, steering N. E. N.
Having proceeded about 2,500 toises along this channel, we entered a second bay upwards of 5,000 toises in length, and bounded to the west by pretty high grounds; the eastern coast, which separates this strait from Adventure-bay, was less elevated.

About half an hour after one in the afternoon, we cast anchor at the distance of 500 toises from the shore; Cape Canelé bearing S. 33° E.

I went on shore to north-west, where I found the woods very full of thickets, and extremely damp, though no rain had fallen for several days. A new species of *Ptelea* grew in great abundance amongst the shrubs with which this country was covered.

20th. We weighed anchor about seven in the morning, and found ourselves, at noon, in a third bay, where the great number of openings in the land left us for some time doubtful what course we should steer, in order to get out of it, which we a length accomplished, to north-west, by the most distant of the openings. The depth of water in this bay was not less than eleven fathoms about the middle, and at least six and a half at the distance of a hundred toises from the shore.

Having proceeded almost 10,000 toises to N. N. W. we anchored about half an hour after three in the afternoon, in a depth of fourteen fathoms.
thoms and a half, with a muddy bottom. As it was probable that, in case the wind should become favourable, we might proceed on our course before night; none of us went on shore.

On the 27th, about eight o'clock in the morning, we weighed anchor. The current soon set against us, and obliged us to cast anchor at the depth of twelve fathoms and a half, in a bottom of sand mixed with mud. We were then in 43° 4' S. lat. 145° 17' E. long.

At the distance of two thousand five hundred toises to north-east, the farthest end of the strait through which we were to pass, was visible.

A fire at a small distance from the shore apprised us of the natives being near. We soon after observed one of them walking along the shore.

Two boats were sent out to transport some of our men to both shores of the straits. They discovered a number of the savages landing from a raft on the east shore. As timid as those we had seen before, they had hastened with all possible speed to the land, where they made their escape into the woods, leaving behind them several darts of a very clumsy construction.

I went on shore at the place where the savages had disappeared, and found several pieces of very beautiful hard granite, rounded by the water.

We found four rafts, made of the bark of trees, on
on the beach. These rafts are only fit for crossing the water when the sea is very tranquil; otherwise they would soon be broken asunder by the force of the waves. As the savages possess the art of hollowing the trunks of trees by means of fire, they might employ the same method to make themselves canoes; but the art of navigation has made as little progress amongst them as the rest.

Having arrived at the extremity of the strait, I found some fine crystals of feldspath in several rocks of very hard sandstone.

On the tops of the hills I met with the plant described by Phillips, in his account of his voyage to Botany-bay, under the name of the yellow gum-tree. As it was already in seed, I had no opportunity of examining the characters requisite for determining its genus. To me it appears to belong to that of *dracena*. The grains were contained in long ears, filled with a vast number of larvae, which are afterwards metamorphosed into small phalæna of the moth kind.

The gum-resin which flows from this plant is very astringent, and might, no doubt, be used with advantage in medicine. The gummy principle with which it abounds, renders it more apt to mix with the fluids of the human body, and ought to give it a preference before many other astringents that are employed.
Amongst a variety of other beautiful plants, I found a very remarkable one of the composite tribe, which had never before been discovered. It constitutes a new genus, which I named *richea*, after Citizen Riche, one of the naturalists to our expedition. This philosopher fell a victim to his love for science, having made, when already in a very advanced stage of consumption, a long and fatiguing journey, in which he had more consulted his scientific zeal than the state of his health.

This new genus naturally ranks in the third section of the cynarocephales. (Juss. gen. plant.)

The common calix is composed of several obtuse foliolæ, scarsious at their extremities, of equal length, and disposed in a single row; it incloses several distinct calices, each of which is supported by a very short peduncle. Each of the small calices is composed of five or six foliolæ, and contains five or six floriolæ, all hermaphrodite, and provided with sheaths of nearly the same length with themselves.

The floriolæ are inflated at their superior extremity, and divided into five equal divisions.

Five distinct filaments, attached to the inside of the corolla, support the same number of antheræ, united in the form of a cylinder.

The style is filiform, and of an equal height with the stamina. The stigma is bipartite.
Richer Glaucæ.
The feed is oval, covered with a light down, and has at the top twelve or fourteen hairy tufts.

On account of the colour of the leaves of this plant I have called it *richea glauca*. The flower is of a brimstone-yellow colour.

Explanation of the Figures in Plate XVI.

*Fig. 1.* The plant.

*Fig. 2.* The flower seen from behind, so as to distinguish the common calix.

*Fig. 3.* One of the small calices, with its floriola.

*Fig. 4.* One of the floriola with its feed.

*Fig. 5.* The same seen through a magnifying glass.

*Fig. 6.* Floriola, divided longitudinally, to shew the stamina.

*Fig. 7.* The same seen through a magnifying glass.

One of the officers of the Recherche, following a beaten path made by the savages through the woods, met six of them walking slowly towards the south, who were all stark-naked, and armed with javelins sixteen or eighteen feet in length. Their surprise at so unexpected a rencontre was visible in their countenances; but their number inspiring them with courage, they approached at the invitations of the European, and bound round their
their heads a handkerchief and neck-cloth which he offered them. They, however, appeared terrified at the sight of his hanger, which he shewed them how to use; nor were their fears quited till he made them a present of it. He endeavoured in vain to persuade them to come to the place where our ships lay at anchor: the savages walked away, following the same path in a direction opposite to that which led to the shore.

Some of our men having landed on the other side of the strait, came to a large fire, round which eight savages, each of whom had a kangaroo skin wrapped round his shoulders, sat warming themselves under the shelter of four fences against the wind. They immediately ran away as soon as they saw our people.

An old woman who had the care of their provisions, which she did not choose to leave behind her, was soon overtaken by some of the sailors. She accepted with an air of satisfaction, an handkerchief that was given her, but was so terrified at the sight of a hanger, which they presented to her, that she leapt down a precipice more than forty feet in height, and ran away amongst the rocks, where they soon lost sight of her.

I do not know whether those who related this adventure in a different manner, wished to make themselves merry at the expense of the rest, when they
they ascertained that the age of this woman was no
security for her against the attempts of some of
the sailors: however, she was still young enough
to make her escape, leaving behind her two baf-
kets, in which were found a lobster, some muscles,
and a few roots of a fern, which I recognised to
belong to a new species of *pteris*, of which I had
before collected a considerable quantity. Pro-
bably the savages chew these roots, in order to
express the nutritious juice, which always abounds
more or less in plants of this species.

This woman, like the other savages, had the
skin of a kangarou wrapped about her shoulders:
she had likewise another of these skins bound
round her waist in the form of an apron. I sup-
pose that she had provided herself with this piece
of clothing, more on account of the inclemency
of the season, than from a principle of modesty;
for those of the savage women who were seen at
Adventure-bay by Captain Cook, at a distance of
not many hundred toises from this place, were
stark naked: and it is not probable that there
should be much difference of manners between
the natives of two countries so near to each other.

28th. A wind from the north blew in such
violent squalls during the night, that the Esper-
ance was set adrift, though she held by a very
large anchor.

We
We had spent more time in surveying the strait of Dentrecaustex than we had intended. Before we could reach the main sea we had still a passage of 2,500 toises to make through the channel. The wind was contrary, but the tide favourable; so that we got under way about half an hour after nine in the morning. We often came within 150 toises of the coast, where the soundings gave us our depth at 12 or 15 fathoms, in places where the coast was high, and 6 or 6½ fathoms near the low grounds.

At length we reached the extremity of the strait. The two forelands are at the distance of 2,500 toises from one another from S. E. to N. W. We ranged very near to that on our starboard side, where we found the depth to be no more than 3½ or 4 fathoms. Such a great diminution of water at the termination of the strait, led us to conjecture that the bottom consisted of a hard rock that resisted the daily action of the tides, and the soundings verified our supposition. This was the only bad bottom which we found throughout the whole extent of the strait. We left it about noon; when we discovered an opening E. S. E. about 15,000 toises in breadth, which affords a passage into the main sea.

To the northward we observed a vast bay, or rather a gulph, intercepted with islands, and con-
nected with the main land, which we saw at a distance. Several bights in the land that incloses the gulph, seemed likely to afford good anchorage.

CHAP. VI.

Importance of the Strait of Dentrecaux—Run from Cape Diemen to New Caledonia—Coasting the South West of New Caledonia—Dangerous Situation of the Recherche near the Reefs on that Coast—Little Cluster of Islands at the Northern Extremity of New Caledonia—View of the Natives—Prodigious Extent of the Reefs—View of the Land of the Arfacides, and of the Treasury Islands—Coasting the Western Part of the Islands of Bougainville, and Bouka—Dangerous Situation of the Recherche, on the Shoals off the Island of Bougainville—Interview with the Savages of Bouka Island—Their Taste for Music—Their Treachery—Their Canoes—Determination of several Points of Bougainville and Bouka Islands—Anchor in Carteret Harbour—Several Excursions on the neighbouring Land—Incessant Rain during our Stay at Carteret Harbour—Different Observations.

We had now compleated a geographical discovery of great importance to navigation. It was a point of the greatest utility to know exactly
actually the harbours in which ships might find shelter from the heavy gales and impetuous storms, which prevail at this extremity of New Holland. A road, which is not less than 22,000 toises in extent, in that particular situation, might present great advantages to a commercial nation. Throughout the whole road, a ship may cast anchor with the certainty of finding a good bottom, the depth being from 6 to 25 fathoms, and no danger to be dreaded. At an equal distance between its two extremities, the bottom is of coarse sand, and not so good. There is also less water, as the depth there does not exceed six fathoms. It should seem that the tide entering at once by both extremities had accumulated the sand, at the place where the opposite currents meet. A ship may, without danger, come within 100 toises of the land. The sinuosities of the land present a varied prospect, and situations truly picturesque.

The season was advanced and the thermometer had not yet been lower than 7° above 0, although we were near the 44th degree of S. lat. Impetuous winds reigned in the open sea, while in the strait, we enjoyed the greatest tranquillity. We did not expect to experience so much security near the Bay of Tempests.

Fishes which prefer tranquil waters, abound in
in this channel, and we were generally very fortunate in catching them.

Scarcely had we passed the strait, to the distance of 1,500 toises when we could no longer distinguish the opening. The depth increased, as we advanced into the open sea.

At noon, our latitude was 43° 1' S. and our longitude 145° 10' E.

We were not long in doubling Cape Pillar, and we immediately steered a north-east course, in order that we might explore the south-west coast of New Caledonia.

The mercury in the barometer sunk into 27 inches 8 lines, and we had a violent gale from the N. W. The motion of the ship was to me as sickening as at our departure from Breft. During our stay at Cape Diemen, I had completely forgotten my failing habits.

On the 30th of May we had made great progress; for at noon, our latitude was 40° 55' S. and our longitude 150° 4' E.

The Mercury in the barometer had fallen to 27 inches 4 lines, and had not deceived us in announcing impetuous winds. We could only fecud under our fore-fail, which at last we were obliged to strike, but fortunately we had the wind astern.

Although the thermometer was not lower than 9° 2-10ths
g° 2-10ths above 0, the cold was nevertheless great. The violent agitation of the air appeared to me the principal cause of the sensation which we experienced.

On the first of June, having arrived in latitude 37° 17' S. and longitude 154° 5' E., we saw a great number of speckled petrels (*procellaria capensis*) and many albatrosses remarkable for the red extremities of their wings.

2d. The next day many flying fishes, of the same species with those which we had so often met with elsewhere, falling on board of us, announced our arrival in parts of the sea frequented by bonitoes.

The motion of the ship, since our departure, had made me so faint, that I found myself absolutely incapable of taking the measures necessary for the preservation of the objects which I had collected in my last excursions.

3d. But this day the sea became more calm, and allowed me to enter upon that business. My specimens had suffered no damage; only I found them slightly covered with moisture.

5th. Since our departure from New Holland, we had been reduced to short allowance of water; and the heat, which now began to be very sensibly felt, rendered that privation the more painful. We were allowed but a bottle in the day; although
although our want of it increased as we approached the Torrid Zone. For this beverage we could not substitute wine, which became daily worse, and brandy, which many preferred to wine, rendered a greater quantity of water necessary. Salted provisions increased a thirst, which we had not, the means of quenching, and the great quantity of sea-salt introduced into our fluids, had communicated to them a great degree of acrimony. Thus the privation of fresh water is one of the principal causes of the diseases of seamen.

Spotted petrels and many other birds which we saw on the 6th of June, in latitude 34° 47'S., and longitude 159° 21' E., made us suppose that we were approaching some island, still too distant to be seen.

11th. About the middle of this day, we thought we saw land at east. After steering in that direction for an hour, the phantom disappeared, and we resumed our course.

15th. We shot a man-of-war bird, which was hovering over the ship. This bird had in its bill one of the species of cuttle fish called Sepia Loligo. It had probably caught this mollusca, the instant before it received the fatal stroke. In the Mediterranean, I have seen this species of cuttle fish raise itself many feet above the surface of the water,
water, by means of membranous expansions, situated laterally near its lower extremity; some of them even dropped on board of us.

16th. About half an hour past five in the morning, we entered the Torrid Zone, in 65° of E. longitude.

About eight we saw the Isle of Pines, which is at a little distance from the southern point of New Caledonia. It had the appearance of a peak of moderate elevation; and we soon had a view of the low lands, with which it is everywhere surrounded. We distinguished large trees, towards the south-east part of the island. Its position, which we determined, is in S. lat. 22° 42', and E. long. 165° 14', which is but 4' less in lat. and 4' more in long. than its position, as assigned by Captain Cook.

About five in the evening, we had sight of New Caledonia in the N. W., distant above twenty thousand toises, and we steered towards it; but about sun-set, we were obliged to lay to for the Esperance, which always failed much worse than our ship. We then had a view of the coast, from 32° to the northward of west, to 32° to the westward of north; but we were still too far distant to see the reefs, between that island and the Isle of Pines. The Esperance joined us about eight at
at night. It was proper for us to make many tacks during the night, but it was so calm that the ship did not obey her helm.

A south-west wind brought us near New Caledonia; although we expected to meet with the winds, which generally prevailed several days before we made the land.

The small change of variation which the compass had undergone, during the transit which we had made, is very well worthy of remark. We may look upon it as nothing, from south latitude 30° 30', and east longitude 154°, where the variation was 11° 30' east, to south latitude 23°, and east longitude 164° 30', where the variation was 11° 4'; for in this run of 13° 30' of latitude, and 10° 30' of longitude, the compass did not vary a degree; and it is well known that, at sea, the variation cannot be observed nearer than within a degree of the truth.

17th. A fire kindled by the savages, on the Isle of Pines, was seen during the night.

At break of day, we observed immense reefs on the coast of New Caledonia, stretching first towards the south, and then towards the west. The calm confined us, the whole morning, between those dangerous rocks and the Isle of Pines; but in the afternoon, a slight breeze from the south-
south-west, enabled us to keep clear of the breakers.

At noon, our latitude was 22° 49' S., and our longitude 164° 40' E.; the southern point of New Caledonia then bearing N. N. E., distant about 20,000 toises. This extremity of that island is in 22° 30' S. lat. and 164° 30' E. longitude.

18th. We had lost sight of the chain of reefs, but about eleven o'clock we perceived their southern extremity, at the distance of about 10,000 toises N. W. ¼ W. Their small distance from our ship at noon, when we observed our latitude, convinced us that they extended some minutes farther to the southward than Captain Cook believed; for we saw that they reached 23° of S. lat., and 164° 31' of E. longitude.

Those reefs, to which we approached nearer than the distance of 1,000 toises, are nearly 20,000 toises from the coast, and in that space keep the sea very tranquil: we were obliged to make several tacks in order to get out of it.

19th. We made little way in the morning of this day; for at noon, in 23° 3' 18" of S. lat., and 164° 8' 20" of E. long. we were still in sight of the western extremity of the reefs, which bore N. W. ¼ N. at the distance of about 10,000 toises. We brought the Cape to bear N. W. ¼ W. in order to double it, and to approach near the coast. We
We kept tacking, chiefly under our top-fails, during the whole night, endeavouring to keep company with our comfort. It was necessary that we should be able, mutually, to communicate the dangers to which we might be exposed, on a coast bordered with shelves and rocks, hitherto unexplored by navigators.

20th. During the night, the currents brought us back to the reefs which we believed we had doubled. We stood towards the land, when daylight fortunately showed us all the danger of our situation. We were surrounded with reefs, and had but little room to beat about. The wind at south-south-east, freshened and increased the waves, which were carrying us towards the breakers; and we were in the midst of the danger, when the Esperance pointed it out to us by a signal. Rossel then commanded on the quarter-deck. Immediately we trimmed up the sails on the starboard tack, in order to extricate her from this dangerous position. The Esperance had succeeded in this manoeuvre, and we had the pleasure to see her clear of the danger, and standing towards the west.

Our bell was now rung to summon all hands on deck, in order to be more sure of success. Four times did Rossel fail in his manoeuvre, and every attempt did but bring us nearer to the danger.
ger. We were driving towards the reefs, where the waves, ready to ingulp us, rose to a prodigious height. We could not cast anchor; for no bottom was to be found with fifty fathoms of line, although we were close to the rocks. Each of us was looking eagerly for the means of escaping death, which seemed almost inevitable. At last the ship touched, when, by unexpected good fortune, the fifth attempt succeeded, and we had the unspeakable satisfaction of seeing the ship remove from the danger.

Between the reefs and the land were some little islands, distant above 5,000 toises from the coast.

The land of New Caledonia, which was low towards its southern extremity, now began to rise into mountains of moderate elevation, in a south-east and north-west direction, inclining a little farther towards the north.

When, at the approach of night, we were going about, the top-men had forgotten to change the booms of the main-yard, and the mizen top-sail yard; and they were both broken, the moment we went upon the other tack. The first fell over-board; but the other, in its fall, wounded three people, among whom was the Commander of the expedition.

21st. We stood out to sea, and there remained during the night, and in the morning we steered for
for the land. A wind at south-eaft carried us to the north-west, at the distance of seven hundred toifes, from the reefs, which deny all access to the shore, whence they are distant by about 2,500 toifes. We expected to find some opening which would allow us to anchor under the shelter of this barrier, against which the waves dashed in a dreadful manner.

A considerable body of smoke which rose at the foot of the hill, at a little distance from the shore, indicated the presence of the natives.

From noon, when we found the latitude 22° 6' 58" south, and the longitude 163° 34' 36" east, we had proceeded nearly 10,000 toifes to the north-west, when we observed, between two reefs a large opening, which seemed likely to afford us an entrance to an anchoring place near the shore. But unfortunately the day was too far gone, and the sea too much agitated, to allow us to send a boat to found this entrance. We regretted much that we were precluded from enjoying the calm which prevailed behind this rampart, against which the waves made unavailing efforts.

Hills, almost wholly denuded of vegetation, rose like an amphitheatre towards the principal chain of mountains, which appeared to be, at least, nine hundred toifes in perpendicular height, and their direction still towards the north-west. We
there found three ranges of mountains of different degrees of elevation, and we observed hollows, apparently formed by the fall of the rains, and which were continued to the summits of the most arid mountains.

Behind those high mountains, we saw perhaps 20,000 toises within the land, which towered above all the rest, and appeared to be, at least, 1,200 toises in perpendicular elevation.

From the middle of one of those ravines, or hollows, issued a torrent which we distinguished perfectly by the whiteness of its foaming waters; although we were very distant from it.

The cold on those heights, undoubtedly render it necessary for the natives to warm themselves. We saw many large fires, which they had kindled, while we beat about the offing in the night.

22d. On account of the faintness of the breeze, we could not make the reefs till noon, when we found ourselves in 21° 51' south lat. and 163° 8' east long. We steered along the reefs till night, without finding the least opening.

New Caledonia presents a more charming appearance than the old country of that name: for we saw some trees growing in the bottoms of the ravines with which those hills are furrowed.

A fire kindled on shore, indicated that those arid tracts of land are not wholly destitute of inhabitants.
habitants. It was not long before we saw some of them.

The wind having varied from the north-east to the north and north-west, we brought to, about ten at night. This was not, perhaps, the most prudent manoeuvre in our situation; for when danger is near, we should always be prepared to avoid it. It would certainly have been preferable to have kept tacking, in order that we might be able to manoeuvre conveniently, in case any troublesome incidents had occurred.

23d. We were baffled by the winds all night, and at noon, were only in lat. 21° 37' S., and long. 162° 47' E.

We saw some mountains which were covered with trees to the summits.

The fires which we observed near the shore, indicated a great concourse of savages. They were probably brought together by the appearance of our ship, which was detained by contrary winds, almost in the same place.

About three o'clock, being about the distance of 35,000 toises from the land, we observed, near the beach, a group of twelve Caledonians, whose looks were directed towards us, and who seemed to be astonished at seeing our ship, at so small a distance from their island.
Three natives who formed another group, stood very near two fires, which they had kindled.

By the help of a good spy-glass, we saw that they were entirely naked. They did not seem inclined to come off to us in their canoes. Besides, the reefs rendered it impossible for them to reach our ship.

24th. A strong breeze at south-west obliged us to tack; and we found ourselves almost at the same place as on the preceding day. The land was covered with a fog, which had always accompanied south-west winds.

We found the ship to be in 21° 46′ of south latitude, and 162° 46′ of east longitude, when we thought we saw between the reefs an opening which might afford us a passage; but how could we ascertain that fact, when the wind was blowing so strong a gale?

25th. As soon as the wind shifted to the south, the fog was entirely dissipated. The winds which brought the cold into those latitudes, forced the air, when the sun was withdrawn, to part with the redundant water, which it had held in solution during the day. Hence some large drops of very cold water then fell, at a great distance from each other.

For the two last days, we had made no considerable
fiderable advances, in exploring the coast, where we had seen many fires, kindled perhaps by the same natives as on the preceding days.

26th, 27th, 28th. We had also to struggle with contrary winds, during the two succeeding days; but, on the 28th, a fresh breeze at south-east, favoured our views in stretching along the coast. The high mountains, which we had hitherto seen, were exchanged for some of a much lower elevation, and at last we thought we had reached the end of the chain; but farther on, they resumed nearly the same height, and we saw the northern extremity of the island, formed of lofty mountains, which, at that distance, did not appear to differ from those which we had observed on the preceding days.

At noon, our latitude was 20° 28' south, and our longitude 161° 29' east, and we were not backward in observing, that near the extremity of the island, the chain of reefs was interrupted, and presented a large opening, which seemed likely to afford us an anchoring place; but the wind blew too strong to allow us to put out a boat, in order to take the soundings in this opening. We lay to all night, in hopes that the weather would be more favourable the next day.

In the direction of the land of New Caledonia,
we observed several islands surrounded with reefs, and connected together by sand banks and other shoals.

29th. During the night, the wind had made us fall off so much, that we lost sight of the northern extremity of New Caledonia, which we found to be in $10^\circ 58'\text{ south latitude, and }161^\circ 10'\text{ east longitude}$. That island presents a chain of mountains, extending about eighty nautical leagues, from the south-east to the north-west. Its mean breadth is not more than seven or eight leagues. Captain Cook, who discovered it in 1772, only saw the north-east part of it. The examination of the south-west coast of the island was an important object in navigation. The reefs by which it is bordered, are generally from 25 to 30,000 toises distant from the land, and towards their extremities this distance is greater, but they are not so broad. That coast, extremely dangerous at all times, is rendered still more so by the south-west winds, which were remarkably adverse to us, in exploring it.

The small number of fires which we observed, and the apparent sterility of the land, gave me good reason to believe that the island was but thinly inhabited.

We did not see a single canoe, although they might
might have been managed with facility, under the shelter of the reefs, where the sea is extremely tranquil.

About seven o'clock in the morning, we came in sight of many mountainous islands and detached rocks, stretching from N. N. E. to E. N. E. and which render this extremity of New Caledonia still more dangerous than the southern part. Some of those islands are several hundred toises in extent. The points of a great number of black rocks were elevated above the water. Those rocks, surrounded by water slightly agitated, seemed to themselves to be in motion, and, at first sight, we took them for canoes, floating on the surface. We soon discovered that those little islands were numerous; for they extended as far as we could see from the mast head. They are encircled with reefs, amidst which the sea assumes the colour of the reddish sand which composes its bottom. We had a near view of them; for, about eleven o'clock, we were but about 1,500 toises to the southward of one of those little islands, when we observed reefs extending from its western point, in the direction of W. N. W. as far as the eye could reach.

At the place, where we found our latitude at noon to be $20^\circ 6' 4''$ south, our longitude being $161^\circ$
101° 10' 36" east, we had on the east 22° north, a little island, distant 1,000 toises.

Another island bore from us north 80 degrees west, at the distance of about 8,000 toises. Those two islands were connected together by reefs.

We saw other lands, bearing north 28° east.

A fire, on the little island nearest us, not far from a rivulet descending from a mountain, indicated that those little spots of land were frequented by the natives.

The strong gusts of wind which blew in the night, would have greatly embarrassed us in any other situation; but, under shelter of the islands and reefs, it was easy for us to beat about during the night.

June 30. Some little islands towards the east, seemed to terminate this little archipelago. Their elevation gradually diminished, in proportion to their distance from New Caledonia. They seemed indeed to be only a continuation of the mountains of that large island; their bases being covered by the sea, and their summits rising above it, and forming so many little islands. The gradual diminution of the height of those mountains, makes it reasonable to suppose that in those seas, shoals extending to a great distance, contribute to augment the dangers of navigation. In the sequel,
quiel, we shall see that this supposition is by no means destitute of foundation.

We directed our course to the north-west, very near the reefs, which precluded our access to the little islands.

The Commander informed the captain of the Esperance, that in case of separation, the two ships should rendezvous at port Pralin or Carteret harbour.

Our latitude at noon was $19^\circ 28' 10''$ south, and our longitude $160^\circ 36' 12''$ east; the most northerly of the little islands bearing east, at the distance of 8,000 toises.

We came in sight of a chain of reefs, which extended as far as the eye could reach, towards N. W. $\frac{1}{4}$ N. in some places forming bights, by taking a westerly direction. With the wind at E. S. E. it was easy for us to follow all the windings of those reefs. In the afternoon, we steered parallel to them for nearly 20,000 toises and then thought that we saw their extremity. We were already felicitating ourselves with having terminated this dangerous and troublesome navigation, and entering into an open sea, when the watch announced shoals and a succession of reefs, in the direction of N. N. W. It was now too late in the day to intangle ourselves among them, and we worked to windward during the night.

A booby
A booby, of the species *pelecanus varius*, allowed itself to be caught about sun-set. It differed from the ordinary species, by having a lighter colour. This bird came, without distrust, and sat down on the round top, beside one of the sailors. The species is remarkable for being but little afraid of man: they will even frequently light on one's arm, when presented to them. Their sense of smelling must not be very subtile; for their nostrils consist of but two slight chinks in the upper mandible, which is moveable like that of the parrot.

*July 1st.* We now believed that we had completed the survey of this frightful chain of reefs, which obstructs the sea for near 100 marine leagues from the S. E. to the N. W.; and we were 10,000 toises to the northward of them, about noon, when we found ourselves in $18^\circ 50'$ of south latitude, and $160^\circ 32'$ of east longitude.

We next steered towards the N. N. E. in order to ascertain whether or not those reefs extended to the north-east.

One of the crew, called Moulin, about two o'clock in the afternoon, discovered to the northward, at the distance of 10,000 toises, a little low island covered with very tufted trees, and bordered towards its western side, with reefs, extending towards W. N. W. This island, which is not
not above 2,500 toises in circumference, is situated in 18° 31' 10" of south latitude, and in 160° 32' 14" of east longitude.

Agreeable to the promise of the General, this island was called Moulin's Island, after the man who first observed it.

About four o'clock two other little islands were descried towards N.° W. ¼ N. distant about 8,000 toises. As it was impossible for us to pass those islands before night, at five o'clock we directed our course to the S. S. E. and we kept the ship's head that way till the morning.

We were surrounded during the night with flocks of birds, which inhabited those low islands. Notwithstanding the darkness, the man-of-war birds came and hovered over our ship, and several boobies alighted upon our yards.

2d. The Commander had intended to anchor under the shelter of Moulin's Island; but we found ourselves carried above 5,000 toises to leeward, and it would have been extremely difficult to work up to windward against both wind and current. We therefore steered N. N. E. and it was not long till we observed, towards the north, breakers not far from the two little islands, which we had observed the preceding day. We steered parallel to them, at the distance of about 1,000 toises
toises and in their direction, which was towards the north-west.

From the point where we observed our latitude at noon, which was $18^\circ 7'40''$ south, our longitude being $166^\circ 32'$ east, we saw the nearest reefs, at the distance of near 10,000 toises to the eastward. We continued to steer along them, in the direction of N. W. $\frac{1}{3}$ N.

About a quarter past one o'clock, we discovered, at the distance of nearly 8,000 toises towards the east, a low and very woody island, which appeared to us to be at the least 8,000 toises in circumference; and it was surrounded with rocks almost level with the water. Having the wind against us, we steered very near it; the breakers extended towards the north-east to the estimated distance of about 8,000 toises, and in the midst of those reefs, we saw black pointed rocks, similar to those which we had observed before.

This new island is in latitude $18^\circ 3'$ south, and in longitude $160^\circ 31'$ east.

We steered towards the north, and about four in the afternoon, we had the last of those rocks to the eastward of us, at the estimated distance of 8,000 toises. There those reefs seemed to terminate; appearing to extend towards the east, and then towards the south. Their northern extremity
mity is in $17^\circ 54'$ of south latitude, and $160^\circ 30'$
of east longitude, and about ten leagues to the
north of Moulin's Island.

It was easy for us to perceive, by the force of
the waves, that we were disengaged from the
reefs.

A great number of tropical birds, boobies and
man-of-war birds, quitting their retreats in the
different little islands, came and played in airy
circles about the ship, almost the whole day. We
saw the trunks of several cocoa-nut trees floating,
which had been torn by the waves from the place
of their growth.

About six in the evening, the lead indicated
fifty-eight fathoms depth of water, with a bottom
of fine sand, our latitude having then been $17^\circ 51'$
south, and our longitude, $160^\circ 18'$ east. We re-
mained an hour upon that bank, where we hove
the lead several times, and had from fifty to sixty-
six fathoms in depth.

Thus we completed the discovery of a dreadful
chain of reefs, so much the more dangerous
towards the north, as they are wholly out of sight
of land. Although they appeared to us inter-
rupted, to the northward of New Caledonia, it is
probable, notwithstanding what we observed, that
they are re-united farther to the eastward.

Those reefs, are well known to be the work of

R 2  

$polypi$;
*polypi*; and the danger attending them is the more to be dreaded, as they form steep rocks covered by the water, and which can only be perceived at a small distance. If a calm take place, and a ship be carried towards them by the currents, her loss is almost inevitable. Vain would be the attempt to save her by the anchor, for it would not reach the bottom, even close to those walls of coral, which rise perpendicularly from the depths of the sea. These works of the *polypus*, which, by continually increasing, obstruct more and more the bed of the ocean, may well be supposed dreadful to navigators; and many shoals which now allow a vessel to pass over them, will, at no very distant period, be converted into reefs extremely dangerous to ships.

The compass experienced but little variation, while we were cruising along this immense chain of rocks; for at their southern extremity, it was observed, to be 11° easterly, and it was diminished only two degrees, when we had reached their northern extremity.

3d. The next day we steered N. N. W.; but we saw no more breakers.

7th. At half past nine P. M. the moon being elevated about 15° above the eastern part of the horizon, we observed, in the west, a lunar rainbow. It differed in nothing from the solar rainbow,
bow, except that its colours were not so vivid. This phænomenon is much less frequent than might naturally be expected.

The allowance of water was very small, which was a prodigious hardship in latitudes so near the Line; and we had not the means of procuring more; although we were provided with Doctor Poissonnier's apparatus for distilling sea-water. This contrivance was of no use to us, as it required much more fuel than we could spare; for when water is scarce on board ship, wood is never abundant.

About ten o'clock A. M. we descried the Arfacides, which we made near Cape Nepean. Those lands, discovered in 1767, by Captain Surville, in the service of the former French East India Company, were since seen by Shortland, who, thinking he had made a new discovery, gave them the name of New Georgia.

Our latitude at noon was 8° 52' south, and our longitude 154° 38' east. The nearest land then bore E. 4 N. E. distant 15,000 toises.

9th. At half past four o'clock, we descried the rock called Eddy-stone, bearing north-west, distant about 8,000 toises. At a distance, we took it, as Shortland did, for a vessel under sail. The deception was the greater, as the colour of it is nearly
nearly that of the sails of ships; but some shrubs adorned its upper part.

The lands of the Arfacides opposite to this rock, are steep and covered with large trees to their summits.

Several fires kindled on the mountains, indicated the presence of the savages.

Our observations ascertained the situation of Cape Nepean, to be 8° S. lat. and 154° 56' 24" E. long.

The Eddy-stone rock is in 8° S. lat. and 154° 5' E. long. and consequently more to the eastward of Cape Nepean than Shortland alledges.

We lay to from two o'clock in the morning till day-light.

10th. Early in the morning, we saw the Treasury Islands, bearing N. W. ¼ N. distant 20,000 toises. They are situated 20 leagues to the northwest of the Eddy-stone.

About noon, we were distant about 2,500 toises from the western point of the largest, and most westerly island of that little group. It is in 7° 25' 36" S. lat. and 152° 56' 34" E. longitude.

Those islands are five or six in number, and so near together, that at a distance, they appear to form but one island, as was believed by General Bougainville, who saw them to the westward, when
when passing through the channel to which he gave his name. The Esperance only distinguished three islands: we saw five distinctly, and, had we been nearer, we should probably have seen more. The mountains which form those islands, are of a moderate elevation, and almost everywhere covered with large trees. The little group occupies a space about ten leagues in circuit; the east and west points being extended into shoals.

After having failed round them, we steered N. N. E. in order to view the eastern part of the island of Bougainville. About five o'clock P. M. we were near its southern extremity, where we espied a group of ten little islands, the largest of which extends from east to west. Being covered with large spreading trees, interspersed with palms, those islands presented an enchanting prospect. Very near their southern side, we observed among them some breakers, which rendered it dangerous to approach them.

Two canoes, in which we distinguished a number of natives, were under sail, and seemed to steer towards us; but they passed behind the little island nearest us, and their rapid motion soon carried them out of our sight. On the beach of the same little island, we saw a company of ten natives, near a canoe, which lay upon the sand, and
and which they did not attempt to launch, in order to visit us. As night approached, it was necessary for us to go about, in order to get into the offing.

11th. A violent rain drenched us during the night, and was succeeded by a thick fog, which enveloped the land, and did not permit us to approach it, till some hours after sun-rise.

Some reefs, level with the water, and extending for some hundred toises, appeared about eleven o'clock, at the distance of 15,000 toises from the shore, which they warned us not to approach.

We saw the summits of the high mountains of Bougainville island piercing the clouds.

The land was again invested with a fog, and we were obliged to wait till the 13th before we could pursue our examination of the coast.

13th. We enjoyed the beautiful prospect of the high mountains gently falling into extensive plains, where however we observed no trace of cultivation. The whole scene was covered with trees, even to the highest elevations, which appeared to be at least twelve hundred toises in perpendicular height, and to be distant above twenty thousand toises from the shore.

Fires upon the hills announced the presence of the natives.

About half-past eleven o'clock, we thought ourselves
ourselves in the greatest security, when we found the ship in shoal water, which the watch had not perceived. It was so shallow, that we could easily distinguish the fishes upon the rocks, some points of which, higher than others, put us in dread of shipwreck every instant.

We were then in $4\frac{1}{2}$ fathoms of water, and the boat, which immediately began to found different parts of the shoal, found only 3 fathoms at one of its extremities. The whole bottom was coral.

Thus we were involved in the most imminent dangers, being surrounded on all sides with shoals, which threatened us with the immediate destruction of the ship.

Boats were dispatched, to found the water over the rocks, on each side of us. The least depth they discovered was 3 fathoms; so that, a slight agitation of the sea in that place, might have made us touch the bottom, and lose the ship.

Those rocks, like the reefs of New Caledonia, are the work of polypi; like those reefs they are built perpendicularly, and quite close to them, no bottom can be found with one hundred fathoms of line. They rise, like so many columns, from the bottom of the sea, and their progressive augmentation daily increases the danger of navigating those parts of the ocean.

At
At noon our lat. was 6° 13' 11" S. and our long. 152° 7' 51" E. We brought to, and remained there till two o'clock.

Several trunks of trees floated alongside. On one of those which the boats brought, we observed a very old notch, which shewed that the inhabitants of the neighbouring island are in possession of instruments which cut very clean. Perhaps they still retain some of the axes, which General Bougainville gave them.

We drove insensibly towards a shoal; but we saw it in good time and avoided it.

Though the watches were ordered to redouble their attention, we found ourselves about half past three upon another shoal, which it was necessary for us to clear like the first, at the risk of seeing the vessel drive against the rocks. There was the same depth of water as before. The surge was rendered very strong by this bank of coral.

Our position was the more dangerous, as night approached, and those shoals being at some distance from the coast, gave us reason to apprehend that we should meet with others still farther off. How were we to avoid them, during the darkness of the night? We must trust to chance the security of our ship. We brought to, till day light, the ship's head to the south-west, and
we frequently found sound without finding any bottom.

14th. The Esperance, about three o'clock in the morning, made signals, which produced a lively sensation on board of our ship. We believed that they indicated some danger; but they were merely intended to give us notice that she had soundings, in forty-two fathoms. We stood off a little from the land, and at day-light steered close along shore. The chain of mountains then began to subside.

Some little islands, detached from Bougainville Island, were connected together by reefs, on which we saw the waves beating. But these were not the only dangers on that coast: sunken rocks formed shoals, which followed the same direction. Those coral banks were doubtless covered with fish; for we saw many sea-birds hovering over them in quest of their prey.

A canoe, manned by six natives, was behind the little islands the nearest to our ship; but, as we were making great way, we very soon passed them.

That part of Bougainville Island which was now in sight, seemed to be much more populous than what we had hitherto seen. The fine plantations of cocoa-nut trees which bordered the coast,
coast, left us no room to doubt that the population was very considerable.

At noon, in latitude 5° 43' 12" south, and longitude 152° 3' 26" east, we saw Bougainville Island, forming, with the little adjoining islands, a bay not less than 15,000 toises in extent. The General intended to anchor there; but shoals observed in different points of its entrance, and a sand-bank near its farther extremity, made him change his resolution.

Bougainville Island terminates in very low lands, and we soon had sight of the narrow channel which separates it from Bouka Island.

After standing off, we lay to all night.

The heat of the day had accumulated the materials of thunder above the high mountains. Frequent flashes of lightning discovered to us their summits, and the thunder rattled with a tremendous noise.

During the night the current had carried us more than twenty minutes towards the north. At six in the morning we were 5,000 toises to the northward of Bouka Island. The vast plantations of cocoa-nut trees which adorned its shores, indicated a numerous population.

A canoe, with nine natives on board, put off, and steered towards us. We immediately hove to
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to in order to receive them; but they stopped
within three hundred toises of the ship, and
showing us their island, made signs to invite us
on shore. There were but seven paddlers in the
canoe; two other natives seemed wholly occupied
in baling out the water, which beat over the sides
of the canoe, and in observing our movements.

A native put off alone from the beach, on a
catimarran, and paddling with the greatest cele-
rrity, came and joined the canoe, which kept al-
ways to the windward of us. Though a very
old man, he appeared to be still very robust. Af-
ter having viewed us for some minutes, he plied
towards the island, as rapidly as he had come off.
He appeared to be a messenger dispatched by the
inhabitants, to make his observations, and to re-
port to them what he had seen.

The canoe left us, and proceeded towards the
Esperance, another very large one having been
already alongside of her.

We saw at some distance a small canoe, man-
ned by five natives, who came a-starb of our
ship, and kept at the distance of about 500 toises,
notwithstanding all our invitations to them to
come on board.

In hopes of alluring those savages, we let down
into the water a plank, with some knives and nails
upon it, and a bit of scarlet stuff by way of a
flag,
flag, tied to a stick placed upright in its centre. They did not, however, seize upon those objects, till we cut the string which kept it nearer to the ship than they chose to venture. The sight of the bit of stuff diffused among them the most lively joy: they showed us that they had accepted of our present, and earnestly desired more of the same sort.

At last, by throwing them handkerchiefs, bits of red stuff, and empty bottles, we succeeded in bringing them alongside. One of the bottles having taken in some sea-water, the savage who took it up, thinking perhaps that we had sent him something good to drink, was disagreeably mistaken on tasting the contrary, and we regretted that we had not given him timely notice of the circumstance.

Those natives were acquainted with the method of barter, and took much pains to shew us the price of their goods.

We received a very fine bow and some arrows, in exchange for a few handkerchiefs, which we let down to them by a rope. As they did not observe that we possessed this kind of weapon, they endeavoured to make us sensible of its value, by showing us its use.

One of the gunners went for his fiddle, and played them some tunes; and we had the pleasure
verse to see that they were not insensible to music. They offered us a number of things in exchange for the instrument, making signs for it, by imitating the motions of the fiddler upon a paddle. But they soon found that their solicitations were fruitless. It was the only fiddle by which the ship’s company danced; and we had too long a voyage before us, to think of parting with the instrument, which procured us an exercise so salutary to seamen.

We had so loaded them with presents, that they soon began to make difficulties in giving their commodities in exchange for ours, to procure which they had recourse to unfair arts. The Commander had agreed to give them some handkerchiefs striped with red, their favourite colour, for a bow, and trusting too much to their good faith, had delivered them the handkerchiefs: but instead of the bow, they would only give some arrows, which were refused.

Those natives seemed to have a great propensity to gaiety. They seemed to take pleasure in repeating the words which they heard us pronounce; and the sweetness of their language enabled them easily to succeed in the imitation.

They were passionately fond of music, and particularly of the most brisk and noisy tunes. One of the officers, who was a good performer, played
played a very lively tune. They listened with very great attention; astonishment was visible in their features; they could not conceal the pleasure they felt; but, by different motions of their arms, which kept exact time with the measure, and a great agitation of the whole body, they gave unequivocal proofs of their sensibility.

They did not lose sight of the desire which the Commander had expressed for a bow. One of them promised him a bow in exchange for a hat; but when he got possession of the hat, he refused to surrender the bow.

Most of the things which we gave them were tied to the end of a line, which they were not at the pains to loose; for they carried in their girdles, shells which were sufficiently sharp to cut it at once.

As we had good reason to distrust their promises, a man went down by a rope ladder a- stern, with a view to exchange a bit of red stuff for a bow, when we perceived that the current had carried us to the north-west, and that we were already too near the shore. As a calm prevented us from steering the ship, we were obliged to put out a boat in order to tow her off. The savages thinking, no doubt, that we intended to pursue them, in order to punish them for their dishonesty, retreated precipitately towards the island.
island. Out of gratitude, perhaps, for the patience with which we allowed them to cheat us, they committed no such act of treachery as General Bougainville, in his voyage round the world, had experienced at their hands.

Four canoes were, all this while, dealing with the Esperance. One of them was manned by natives, of whom sixteen were paddlers, and the rest warriors.

We learned from the people on board the Esperance, that this war-canoe had long kept at a distance; but ventured to come alongside, on seeing the different articles which their countrymen in the little canoes had procured.

The order with which the savages were stationed in the great canoe, indicated a kind of naval tactics. A warrior, armed with a bow and arrows, stood between every two paddlers on each side, and intermediate parties of two or three warriors stood with their faces towards the stern of the canoe, in order to observe the movements in that direction, and to fight while retreating. Those warriors showed no hostile disposition; they seemed very fond of the wine and brandy which was given to them, but did not eat bacon, without a degree of repugnance.

Those savages had excellent teeth, and found
no difficulty in masticating the hardest biscuits which were offered to them.

Could those natives have had any communication with the English and the Spaniards? One of them, on showing us an arrow, which he was going to tie to the end of one of our strings to convey it on board, pronounced, very distinctly, the English word *arrow*. Another, showing us the land, and inviting us to it, made use of the Spanish word *tierra*.

We learned from the Esperance, that several of them pronounced the word *Bouka*, the name which General Bougainville gave to their island. This word, which in the Malayan language is the expression of negation, and which, when the first syllable is pronounced long, signifies *to open*, doubtless seems to indicate some analogy with the Malayan; from which, however, it differs so much, that one of the ship's company, who spoke the language fluently, could not understand those natives.

The value which they seemed to affix to nails, and the other articles of hardware which we gave them, showed that they were acquainted with the use of iron.

The colour of their skins is blackish. They are of a middling stature; and being naked, their
distinctly marked muscles indicated great strength. Their figure though not very agreeable, is extremely expressive. Their heads are very big; their foreheads broad, like the rest of their faces, which are very flat, especially under the nose; their chins large and prominent; their cheeks full, their noses flat, their mouths very large, and their lips very thin.

The betel, which gives a bloody tint to their large mouths, adds to the ugliness of their appearance.

Their ears are loaded with large rings made of shells, the weight of which contributed to the large size of those organs. Some had red and white streaks traced upon their bodies; and we observed one whose hair and nose were sprinkled with a red earth, which appeared to be ochre. Some had bracelets formed of the fibres of the cocoa-nut husk.

Their hair was curled, thick and bulky, like that of many papows, whom we afterwards met with.

They are in the practice of plucking the hair from every part of the body. There was but one seen, on board the Esperance, who allowed his beard to grow.

All of them had their loins girded with a cord, which went several times about the body, and
feemed only designed as a point of support, to increase the muscular strength of those parts. One of them, probably with a similar view, had his left arm tied in three different places, over the biceps muscle; some flat bits of wood, on the outside of the arm, supporting the strain of the cord.

Those savages appeared to handle the bow with much address. One of them brought on board the Esperance, a booby, which he had brought down with an arrow; and the fatal wound was seen in the belly of the bird.

The industry of those islanders seemed to be particularly directed to the fabrication of their arms, which were formed with great care. We admired the skill with which they had coated their bow-strings with a resinous substance, which gave them, at first sight, the appearance of cat-gut. The middle of the string was done round with bark, in order to save it from wear, by giving the impulse to the arrow. The inferior part of the arrows was very light, being formed of the stalk of the *Saccharum spontaneum*; and the other part consisted of very hard wood, well pointed. The joining is ingeniously fastened with about thirty turns of bark, as is also the part of the arrow which bears upon the string, to give it the greater solidity.

Their
Their canoes, formed of several planks, ingeniously joined together, are of a shape at once elegant, and adapted for a quick motion. See Plate XLIII.

At the approach of night, a current setting to the N. N. W. communicated to the tide a rippling motion, so like the effect of a shoal, that it might have deceived the most experienced eye. The boat was sent to found, but no bottom was found with twenty-six fathoms of line.

During the night, violent thunder claps dissipated the thick clouds which enveloped the summits of the mountains, while we steered S. S. W. in order, if possible, to stem the current.

We had now explored the western coast of those two islands, as General Bougainville had their eastern parts, when he first discovered them.

The most easterly, which is at the same time the most southerly, point of Bougainville Island, is in latitude $7^\circ 4' 50''$ S. and in longitude $153^\circ 18' 34''$ E.

The northern point, called Point Laverdy, is in $5^\circ 34' S.$ lat. and in $152^\circ 31' E.$ long.

The coral banks, which we discovered off Bougainville Island, are situated in $6^\circ 11' S.$ lat., and $152^\circ 2' E.$ long.

The north point of the island of Bouka, is in $5^\circ 5' 36'' S.$ lat. and $152^\circ 9' E.$ long.

The
The easterly variation of the compass diminished till it came to 7° 30'.

The currents along the coast, carried us constantly from 8' to 10' to the north-west every day.

The thermometer did not rise above 22°, although we were so near the Equator.

16th. At sun-rise we had sight of a flat island, to which Carteret has given the name of Sir Charles Hardy, stretching from north 15° east, to north 22° 30' east, distant about 15,000 toises. It is situated 25,000 toises N. N. W. of the island of Bouka.

About one in the afternoon, we came in sight of Cape Saint George, on the south-east of New Ireland, bearing W. N. W., distant about 20,000 toises. It was found to be in 4° 54' 30" S. lat. and 150° 39' E. longitude.

We worked to windward, by tacking, all the night.

17th. At day-break we steered for Carteret harbour, where we could not stop to anchor. Leaving the island of Marteaux about 25,000 toises on the starboard, we steered so as to pass very near the Booby rocks, leaving Laig Island on the larboard, and we arrived between the island of Cocos and New Ireland, where we came to an anchor, about half past one o'clock P. M. in thirty-two fathoms of water, the bottom being very soft black
black mud, mixed with calcareous sand. We were about 200 toises from the island of Cocos.

The north-west point of New Ireland bore west 12° north, distant about 25,000 toises, and the south-east point of the same island bore south 31° east, at the same distance.

The middle of the passage, on the north-west of Carteret harbour, bore west 10° north.

At the distance of about fifty toises from the island of Cocos, we would have been in a harbour well defended on all sides. There is anchorage at a very small distance from the land; for about ten toises from the shore there are five fathoms of water, and, as the distance increases, the depth increases very rapidly.

We went on shore, on the island of Cocos, to pass the rest of the day. That little island, the highest part of which is not above seventy-five toises above the level of the sea, is formed of very white calcareous stones. Having risen from under the water, time has not much altered the form of the madreporae, which enter into its composition. They may be traced even on the rocks, which are the most exposed to the injuries of the air. The island is terminated on the south-east, and on the north-west, by the same kind of stones. About mid-way between it and
Laig Island, there is sufficient depth to allow ships a passage.

A great quantity of rain having fallen in the night, there arose so much humidity out of the woods, as formed clouds every instant, which originating chiefly in the lowest places, resembled, at first sight, the smoke of fires kindled in the forest, and as soon as they had acquired sufficient elevation to be exposed to the current of air, they presently disappeared.

Large trees, which always preserve their verdure, cover the island of Cocos. Though their roots find little vegetable mould among the calcareous stones, between which they penetrate, yet, in that moist situation, they flourish very luxuriantly. It was a pleasant spectacle to see the fine tree, known by the name of *harringtonia speciosa*, attracted by the humidity, extend its branches horizontally a great way over the sea. That island produces fig-trees of different species; and we expected to find there abundance of cocoa-nuts. This expectation was indeed one reason for our preferring this anchoring place to several others at no great distance. But we found it difficult to procure even a dozen of those nuts.

We saw, with concern, that some of the party, who had been sent on shore for wood, had allow-
ed themselves to cut down the cocoa-nut trees for the sake of the fruit. They carefully searched for the young leaves on the tops of the trees, which are very tender, and afforded very agreeable refreshment to people who had lived long on salted provisions. If we had permitted them, they would not have left a cocoa-nut tree in the island; and that anchorage would have been deprived, perhaps for ever, of a resource extremely agreeable to navigators.

The night overtook us, when in the middle of the wood, and we were entertained with the charming spectacle of a prodigious number of glow worms, which diffused so much brightness as to dazzle, rather than enlighten us.

It was the time at which the species of crab called cancer ruricola, leaves the holes which it digs. On our way to the place where the boat was waiting for us, we trod upon several of them, and some of our party, before they knew what animal it was, were apprehensive that it was some venomous reptile.

18th. The next day I visited the south-east part of the island; but vines of different kinds prevented me from penetrating far into the forests.

Different species of the epidendrum adorned the trunks of the largest trees, and grew in the midst of a great number of ferns equally parasitical.

We
We observed, floating along the shore, the fruits of several species of the *pandanus*, of the *barringtonia speciosa*, and of the *heritiera*, which stretched their branches, and even their trunks, in a very remarkable manner, over the waters of the sea.

Two of our men who followed me saw an alligator close to the shore, on the south-east extremity of the island of Cocos. But I do not believe that those animals are very common there; for, during the whole time that we lay at anchor, no accident happened, though a great number of our people were in the habit of bathing.

Near the eastern extremity of this little island, I observed several kinds of *nautili*, disseminated amidst the prodigious quantity of lithophites, which entered into its composition.

The abundance and continuance of the rains were astonishing. It was an incessant torrent of tepid water, which, however, did not hinder us from visiting the environs of the anchoring place.

I landed several days successively, on the islands of Cocos and Laig.

The number of insects of different forms and colours was truly astonishing; and the rains did not appear to diminish their activity. They were chiefly *coleopteras*, which it was difficult to catch.

The
The most varied species belonged to the genus *circindela fabr*.

We were entertained with the pleasant view of different species of figtrees, from the top branches of which depended a great number of radicles, soon to be transferred to the soil, and to give birth to so many different trees.

The palm *cycas circinalis* hath multiplied greatly in the shallows, under the shade of the great trees. We observed near them, an arbour newly constructed with branches, where the natives had been repose, and had left the fragments of a repast they had made on the fruit of the cycas, the kernels of which, if eaten without preparation, are a powerful emetic, as several of our ship's company experienced; but the savages had roasted them, as we observed the marks of fire on a great number of the husks.

The kernel of the fruit of the *cycas circinalis*, is very bitter. The inhabitants of the Moluccas know how to put it to a better use, than those of New Ireland, as I had occasion to observe, towards the end of this voyage. Experience had taught them, that maceration freed it from its hurtful qualities; and the same process may also succeed with many other fruits and roots, which, in this manner, may be rendered useful, as food for animals and even for man.

There
There lay on the ground, a great number of the fruits of the cycas, which the savages had not touched. Their succulent husk, which diffused an odour, like that of the finest apple, contains fermentative particles sufficient to produce a good spirituous liquor. Those fruits abound there, and may be useful to navigators.

Among the large trees which grow on the island of Cocos, I observed, with surprize, a new species of arec, the trunk of which was above eighteen toises in height, and its thickness throughout, not more than three inches. It was difficult for us to conceive how a tree, so weak in appearance, could support itself to so great an elevation; but our astonishment ceased, when we attempted to cut one down. Its wood was so very hard, as to resist, for some time, the most forcible strokes of the axe. A great quantity of interlaced (ami-lacée) substance, under the form of pith, occupied its centre, a circumstance common to many other trees of the same genus. This pith taken out of the trunk, left a cylinder, the wood of which did not exceed four-tenths of an inch in thickness, and was of a fine black colour. The fruit of this new species of arec is red, scarcely larger than a common olive, and nearly of the same shape.

The caryota urens was one of the large trees of
those forests. Among the number of shrubs, were several species of the *dracaena*. Among the large trees, I admired a *folanum*, certainly the highest species of that genus; those hitherto known to botanists, being only herbs or feeble shrubs. The leaves of this are oval, hard and very smooth.

That fine tree, the *teetona grandis*, so valuable for ship-building, grows at Carteret harbour. I also saw there different species of the *guettarda*, and a new species of *hermandia*.

Mosses and ferns were very numerous, and grew with the greatest luxuriance, in those humid situations.

The western shore of the Island of Cocos is precipitous, and very much elevated above the level of the sea. The calcareous stones, of which it is composed, being much exposed to the injuries of the weather, are very friable. I found there the nutmeg-tree, which Rumphius has described, under the denomination of *myristica mas* (*Rumph. Amb.* vol. 2. tab. 5.) The fruit was then but young. It is more elongated than that of the species which is cultivated.

Some savage must certainly have perished among those rocks, for I found a human skeleton almost entire.

Near to that was a place where I saw the re-
mains of a fire, which had been kindled by the natives who frequent that coast.

The continual rains at Carteret harbour, have rendered some species of spiders very industrious. They construct excellent places of shelter, in the middle of their webs, consisting of a snug fabric, in the shape of a cornet of paper, four-fifths of an inch in height, and one-fifth of an inch broad in the base, with its top elevated and a little inclined towards the south-east, in order that the prevailing winds may have the less force on this little habitation. The rain glides off this kind of cone, without being able to enter it, or to press it down, being stretched on all sides by threads fastened to the neighbouring branches. The spider, being perfectly sheltered in this habitation, never leaves it, but to seize the insects which fall into her toils.

Another sort of spider which is a less productive spinster than the former, protects herself from the rain under a piece of a leaf bent into a form almost conical, which she places in the centre of her web. Every precaution is taken to give solidity to her habitation, the point of which is opposed to the south-east wind, in order that it may be the less affected by its impulse.

Nature hath done every thing for other species of spiders, which are covered with very hard skins,
skins, and as smooth as if they were coated with the finest varnish. Those suffer no inconvenience from the great rains to which they are constantly exposed, and they wait patiently in the middle of their net, for the insects which form their prey.

Among those spiders, I found some, the bodies of which terminated in points: the *aranea aculeata*, and the *aranea spinosa*.

The island of Laig, being much less than that of Cocos, presents fewer productions. The land of it is of the same nature, but much less elevated.

The precipitous mountains of New Ireland, which border upon Carteret harbour, are at least, three times as high as those of the island of Cocos. The marine productions, of which they are partly composed, are observable, in the same manner, even on their summits.

On the 23d I landed on New Ireland, N. N. W. of the anchoring place, and near the place whence our ship received her water. The stream which furnished it, was visible only near the sea. Farther inland, we saw the channel of a torrent, along which, in different places, were cavities filled with water, which filtrating through the sand, formed the little brook which supplied the watering-place. After an hour's walk along its banks, we came to a beautiful cascade, which...
it formed, by dashing from the high calcareous rocks, in which we observed vast grottoes, which served as retreats for large bats, of the species denominated \textit{vespertilio vampyrus}.

Some wild bread-fruit trees grew in those places.

At a time when Carteret harbour was inundated with continual rain, I was astonished to see only the channel of a torrent without any water; but it appeared to me, that the rain did not extend far enough inland to fill it. Of this it was easy to be convinced, by the serenity of the sky towards the south-west, while at the anchoring-place, the rain fell without intermission. Carteret harbour forms a sort of basin, where the clouds, loaded with water, after passing over the high mountains of New Ireland, experience a calm which hinders the air from supporting them. Hence result those excessive rains, which render the anchoring-place far from desirable to navigators.

Among the little plants, which grow in the shade of the forests, I observed several species of the \textit{procris}.

Besides the nutmeg-trees of which I have already spoken, nature hath furnished the inhabitants of New Ireland with the species of pepper, known to botanists, by the name of \textit{piper cubeba}, which
which I observed adorning the bases of the large trees, through a very extensive space.

Our boat was sent a fishing on the coast of New Ireland, about 5,000 toises to the south-east. There were observed some habitations, which had been newly and very ingeniously constructed by the natives, who were not contented with the roasted fruit of the *cycas circinalis*; for the remains of shell-fish were seen near those cottages.

24th. When the Commander anchored in Carteret harbour, he intended to remain there at least fifteen days; but the excessive rains made him resolve to leave it much sooner.

The greatest activity had been been exerted in procuring our complement of wood and water; and on the morning of the 24th we had made every preparation for setting sail.

The water which we took in at Carteret harbour was very good, and procured with great facility, by means of wooden spouts, which conveyed it into the boat, with no other trouble than lifting it three feet lower than the spout.

Our wood was cut in the Island of Cocos, and the conveyance of it was the more easy, as the boat could come close to the beach. It is proper to remark, that the wood, which we obtained at Carteret harbour, introduced into the ship a prodigious number of scorpions and *scolopendra*,

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lopendræ, of the species called *scolopendra morif-tans*, insects which very much incommode us.*

It was to no purpose, that we erected the observatory on the island of Cocos; for the incessant rains did not allow us to make a single observation. It is difficult to form a proper idea of these excessive rains, which poured down in an almost uninterrupted torrent.

The thermometer, observed at noon, while we lay at anchor, varied from 19° to 21°; and the barometer only from 28 inches 1 7-10th lines, to 28 inches 1 2-10th lines.

Our ship lay at anchor in 4° 48' 10'' S. lat., and 150° 25' 40'' E. long.

This harbour afforded us no refreshments; and we were unsuccessful in fishing.

The tides took place but once a day, and rose only about six feet.

*The harbouring of such noxious and abominable reptiles, is a solid objection against the wainscoting of houses in tropical climates, which is afterwards tacitly recommended by the author.—*Translator.
CHAP. VII.

Departure from Carteret Harbour—On that Occasion the Esperance loses an Anchor—Passage through St. George’s Channel—View of the Portland Islands—Different Interviews with the Natives of the Admiralty Islands—Their fantastical Fashion—Despotism of their Chiefs—Canoes—Astonishing rapidity of their Motion—View of the Hermit Islands—Their Inhabitants—View of the Exchequer Islands—A New Island—A Water Spout—View of New Guinea—Passage through Pitt Strait—Singular Effects of the Tides—Ravages of the Scurvy—Anchor at Amboyna.

On the 24th of July about 11 A. M. we set sail from Carteret harbour, and took advantage of a gentle breeze at south-east, to pass through the north-west opening, between Cocos Island and New Ireland.

The current set to the W. N. W. and at noon we were 5,000 toises W. N. W. of our anchoring place.

The Esperance, not having hove up her anchor in time to profit by this breeze, a calm succeeded almost as soon as she set her sails, and the current drove her towards the breakers, on the starboard
board of her passage out of the harbour. She was therefore obliged to cast anchor, and wait for a wind, to extricate her from this dangerous situation.

We lay to, in hopes that she would soon rejoin us; but it was half an hour past four before she could overtake us. The captain then told us that he was in danger of being wrecked at the entrance of the harbour which we had quitted. Having been forced by the current to come to an anchor on a coral bottom, the cable had been cut by the rocks, at the moment when a breeze sprang up at south-east, and carried them from the rocks. They had come too near them to cast a second anchor with advantage; and the frigate quitted the station with the loss of an anchor, and three fathoms of cable.

Our position now enabled us to observe, that the channel of St. George is not more than 30,000 or 35,000 toises in breadth, at its southern extremity. The obscurity of the weather appears to have led Carteret into the error, of supposing its breadth almost double of what we found it.

We tried during the night, and the current carried us into St. George's channel, at the rate of 2,500 toises in the hour.

About one o'clock in the morning the Isle of Man bore W. S. W., distant 5,000 toises.

A very
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A very thick fog concealed from us, all day, the lofty mountains of New Ireland. But their summits appeared from time to time, and we had sight of mountains towards the centre of that island, at least 1,000 toises in perpendicular elevation. We observed large trees even on the highest of their peaks.

At four in the afternoon we lay to, with an intention to explore Sandwich Island the next day. But the currents hurried us along with such rapidity during the night, that at day break, when we were setting the sails, we were astonished to find ourselves not more than two hundred toises from that island.

The watch had probably been asleep; for we received no intimation that the current was driving us upon the coast; which, however, even at that small distance, happily presented no danger.

The island of Sandwich has no considerable elevation. Like New Ireland, it was covered with trees; and some old trunks, after losing part of their branches, were scattered here and there upon the little hills. Being covered with parasite plants, they looked like columns adorned with garlands, and added greatly to the picturesque appearance of that charming island.

The part of New Ireland too, which lies opposite to Sandwich Island, presents a tract but little elevated.
elevated. There arose, however, in the middle of a vast plain, some little hills which might be 200 or 250 toises in perpendicular height.

The north-west part of Sandwich Island terminates in several points or slips of land, advanced into the sea. We distinguished five principal ones; and near the base of one of them, is a peaked hill, which is the highest land in the island; although its perpendicular altitude does not exceed 200 or 250 toises, and consequently it is much less elevated than Captain Carteret alleged. The clearness of the weather, and the near approach we made to this little mountain, enabled us to judge of its elevation.

Some huts in the shade of the woods of coconut trees, made us hope for an interview with the inhabitants of Sandwich Island; but it was doubtless too early in the morning for them to pay us a visit, for we did not see a single individual.

The most westerly point of that island is in $2^\circ 59' 26''$ S. lat. and $148^\circ 29' 15''$ E. longitude. Its greatest length, from E. S. E. to W. N. W. is 15,000 toises.

At its western point we observed a little island, which Carteret had not perceived.

Ten days had elapsed without our having had an opportunity of observing the passage of the sun over the meridian; but on the 20th of July, we found
found our latitude at noon to be 2° 50' 29" S., and our longitude 148° 16' 50" E.; and we were enabled to determine the situation of the northern, and most westerly point of New Ireland, which was in 2° 44' 30" S. lat., and 140° 11' 30" E. longitude. The obscurity of the weather must have occasioned the error of Carteret, who placed it above 10,000 toises farther to the north.

About four o'clock in the evening, we were distant about 1,500 toises from a great number of little islands, situated at the entrance of the channel which separates New Ireland from New Hanover; and we observed that the passage between those islands was obstructed by reefs.

New Ireland is terminated by low lands.

New Hanover, towards the north-west, presents a flat surface, while its centre is occupied by a chain of very high mountains, which extend towards the south-east.

27th. In the morning of this day, we had sight of Portland Islands, which we coasted at a small distance. They form a group of seven little islands, which occupy a space of about 7,500 toises in extent, in the direction of east and west. They are very flat, covered with large trees, and are connected together by reefs and sand-banks.

Those little islands are in latitude 2° 30' 44" S. and in longitude 147° 15' E.
28th. We continued to direct our course towards the Admiralty Islands, where Commodore Hunter, according to the account of two French captains, believed that he saw the wreck of the unfortunate expedition of La Perouse; and we steered for the most southerly of the little group. Like most of the islands in the South Seas, this is bordered by reefs at a small distance from the beach.

A line of fifty toises in length did not reach the bottom; although we were but 1,000 toises from the land.

We observed towards the S. W. some canoes proceeding along shore, within the reefs; but none of them seemed desirous of getting clear of the reefs, in order to come towards us. We also distinguished some groups of natives, upon the most advanced points of land, in order that they might have the better view of our ships.

A large tree standing above the breakers, was taken by some for the wreck of a ship; but the branches and roots which were distinctly seen, left no doubt that it was a tree, which had been detached from the coast.

The Commander sent an officer on board the Esperance, to concert with the captain the researches which it would be proper to make at the Admiralty Islands, agreeable to the intelligence which
which had been sent us at the Cape of Good Hope.

We passed the night in beating about, and making head against the currents.

29th. Captain Huon waited on the General, early the next morning. He was of opinion, that we should visit the island E. N. E. of that we had coasted. In fact, according to one of the depositions which had been sent to the Commander of the expedition, it was on the most easterly island that the savages had been seen clothed in the uniform of the French marine. About the middle of the day we were within 2,500 toises of that island, and saw some of the natives coming towards the beach. Some huts were seen among the cocoa-nut trees. Other islanders soon appeared on the south-east point; and their number increased as we approached them. Some canoes lay upon the sand, and we hoped to see the natives launch them, in order to meet us; but they made no dispositions for that purpose. As the General wished to have an interview with them, we went under the lee of the island, where we found but little shelter, it being of small extent. A crowd of natives now appeared. Some ran along the shore; others kept their eyes directed towards our ships, inviting us by signs to come on shore, and expressing their joy
joy by shouting. Some of them launched a canoe, but hesitated for some time to come near our ship, and paddled towards the Esperance which was more to windward. This little canoe was furnished with an out-rigger, and had on board seven natives, who almost immediately returned on shore.

At half past one o'clock we brought to, and dispatched from each ship a boat, with different articles, to be distributed among the inhabitants of that little island. While the boats were approaching the land as near as they could, the frigates were in readiness to protect them, in case of an attack from the savages; for the perfidy, which the inhabitants of the most southerly of the Admiralty Islands had practised on Carteret, gave us some apprehensions with regard to the intentions of those. That voyager tells us, that in September 1767, when he discovered the southern part of that archipelago, the savages attacked him with two volleys of arrows, notwithstanding the marks of friendship which he had lavished upon them.

This island was cultivated to its very summit. Several pieces of land were fenced in, which made us believe that the inhabitants were acquainted with the right of property. The whole island presented the appearance of a little round mountain,
mountain, the base of which was adorned with beautiful plantations of cocoa-nut trees, while its more elevated parts appeared to be allotted to the cultivation of different roots, which also furnish food to the inhabitants.

When the boats came within about fifty toises of the shore, they found no bottom with thirty-three fathoms of line; and the reefs, with which the island is bordered, prevented them from approaching nearer.

A great number of natives advanced to the beach. We counted more than an hundred and fifty, who practised every mean in their power, to induce us to land on their island; but the reefs were an obstacle which we could not surmount. They threw our people some cocoa-nuts, and were pleased and astonished to see with what facility they were opened with an axe.

One of the natives, distinguished from the rest by a double row of little shells, which adorned his forehead, appeared to possess great authority. He ordered one of the natives to swim towards us with some cocoa-nuts. The fear of approaching persons of whose intention he was ignorant, made the islander, swimming and defenceless, hesitate a moment. But the chief who, doubtless, was little accustomed to have his will disobeyed, did not allow him to reflect. Blows from a cudgel, which
which he held in his hand, immediately succeeded his orders, and enforced instant obedience. We did not expect to see a man treated in this manner, in the midst of a crowd of people, who appeared to be so little removed from a state of nature. By way of comforting the poor fellow, our people gave him some bits of red stuff, a few nails, and a knife, with which he was greatly pleased. No sooner had he returned to the island, than curiosity collected all the rest around him, everyone wishing to see our presents. Canoes were immediately launched, many natives took to the water and swam, and in a short time there was a great concourse around our boats. We were surprised to see that neither the force of the surf, nor of the breakers, discouraged them from this attempt.

There was another chief distinguished by the same ornaments as he who has been already mentioned; and also by the blows, which he inflicted with his cudgel, on those to whom he gave his orders.

Those islanders, who signified the greatest satisfaction at the sight of our nails, and still more of our hatchets, had some difficulty in perceiving the value of our knives. At first they required them to be shut, before they would receive them; but their fears were very quickly banished, and they
they received them open as well as shut. Those people gave us some spears, armed with bits of vitreous, volcanic lava, terminating in a point, and very sharp in the edges. They also presented us with combs, having only three teeth, very distant from each other, very heavy bracelets, formed of large shells, and others consisting of small *buccinæ*, strung on a fibrous substance, as strong as the best hemp.

When asking for our articles in exchange for theirs, those savages often repeated the word *cappelle*. It appeared to us that this was their name for iron, which they preferred to every thing we could offer them.

Like the natives of Bouka, they repeated with much justness, the French words which they heard us pronounce.

One of their canoes was driven by the swell against one of our boats, and received some damage. One of our rowers taking hold of it to prevent a second shock, a chief, misapprehending our intention, made the signal to the canoe-men, the greater part of whom precipitately jumped into the sea, with a design to swim on shore; but they returned as soon as they perceived their error, and confidence was re-established.

The women kept at some distance, under the cocoab
cocoa-nut trees. Their whole cloathing consisted of a piece of mat, round their middle.

The men were very busy about our boats. Some swam towards them, showing their cocoa-nuts; and others seemed to be attracted by curiosity; but it was soon discovered that this was not their only passion; for they exerted all their address to get possession of our goods. Impunity increased their boldness; and, when they missed their aim, they were not discouraged; but presently endeavoured to seize something else.

One of those thieves seized upon a knife; but being caught in the fact, he was obliged to give it up. This did not make him abandon his enterprise, and he lost nothing by his failure. A flag, in which red predominated, attracted his regards: he found means to get possession of it, and the theft was not perceived till he had got a great way from the boat, and had almost reached the island.

A looking-glass having been given to one of those savages, he contemplated his image with surprise; but immediately broke the glass, hoping, no doubt, to find in it the objects which it reflected.

The complexion of those islanders is black, but not very deep. Their physiognomy is agreeable,
able, and not very different from that of the Europeans. Born in a fine climate, and a fertile island, they seem to be happy, if one may judge from the air of satisfaction, which is expressed in all their features. The hair of their heads is crisped, and they are in the practice of removing it from every other part of the body. It appeared that the volcanic glass, with which they pointed their spears, supplied them also with razors; for they made signs to one of our gunners, who wore whiskers, to shave them with this sort of glass.

The boats had orders to return about four o'clock. Their departure seemed sensibly to affect the natives, who redoubled their importunity in soliciting us to land in their island. All the women came to the beach, and joined their invitations to those of the men. They were, no doubt, much surprised that they had not more success; but the order had been given, and our boats could not delay their departure.

It was with regret that we left those people, at the moment when they had launched several canoes, loaded with cocoa nuts, and were bringing them to us. The delicious water of those fruits, would have been of the greatest utility in stopping the progress of the scurvy, which had already begun its ravages in both the ships. If our boats
boats could have stopped some minutes, they would have procured a great number of them.

The satisfaction with which those islanders received nails, and other articles of iron, and the anxiety they showed to obtain them, were proofs that they were acquainted with that metal.

Those people, at first, manifested every appearance of good faith; but they discovered their inclination to theft, as soon as they thought themselves certain of impunity. We had occasion to observe, that those who were the most advanced in years were the boldest thieves.

That little island, which is nearly circular, is about 25,000 toises in diameter, and is situated in $2^\circ 18'\text{S. lat.}$, and $145^\circ 46'\text{E. long.}$ It is extremely populous; for we saw about three hundred of its inhabitants.

The white appearance of several places of the island, where fractures discovered the strata, gave me reason to believe, that its base is of a calcareous nature, like the greater part of the South Sea islands.

As soon as the boats were hoisted on board, we directed our course towards the E. $\frac{1}{4}$ N. E.

30th. The next day we got to the northward of the Admiralty Islands. There we perceived, that an extensive mountainous island occupies the
the centre of the group, the circumference of which consists of a great number of little flat islands, which seem to have emerged from the bosom of the ocean, at no very distant period. Almost all of them are connected together by reefs and sand banks.

About sun-set we were 8,000 toises to the north-east of the little islands which were nearest to the principal one.

31st. As soon as day-light appeared, we steered W. S. W. standing in for the land. Some canoes, which a very high sail made to loom large, appeared at a distance.

We were to leeward of those islands, in a large bay, formed by their curvatures, and a short distance from the land. We anchored several times, with sixty-eight fathoms of line, but found no bottom.

There were many cocoa-nut trees on most of the little islands. A great concourse of natives came upon the beach, and some of them advanced as far as the adjoining reefs. The little islands where there were no cocoa-nut trees, did not seem to be inhabited; for we saw not a single savage upon them.

Several canoes were launched, many still lay on the sand, and six, which had set sail, were making towards our ship. We immediately lay
to, in order to receive them. Some of them were manned with seven natives, and others with nine. Having come within 300 toises of our ship, they furled their sail, and used the paddle to make a nearer approach. Each canoe had a commander, who stood on a platform, and gave his orders. When the canoes had paddled about 150 toises, they stopped, and from that distance one of the chiefs addressed us in a speech. His eloquence was wholly lost on us; but the signs with which it was accompanied, did not allow us to doubt that he wished to induce us to land. Probably the paddlers were not permitted to speak; but they joined their signs of invitation to those of the chief.

We endeavoured, on our part, to prevail on them to come nearer our ship. They could not resist the sight of our large pieces of red stuff; and, after appearing to deliberate upon the case, they advanced a little.

Some of our officers imagining that the sound of the bells would be agreeable them, they were immediately rung; but, as several persons had foreseen, the noise, instead of attracting the savages, made them take to flight. They were induced, however, to return, by the sight of several flags which we waved, and by some tunes played by our fiddler.
Presents might procure us their confidence. We therefore threw them an empty bottle, which we supposed they would immediately seize upon. But they appeared to look upon it as a fatal gift; for they paid no other attention to it, than to keep at a distance from it.

Nails and knives which were floated to them upon a board, occasioned loud expressions of joy, when the savage who took them up showed them to his companions. It appeared then, that those natives were acquainted with the use of iron.

None of them had hitherto ventured to touch the bottle; but the presents having won their confidence, one of them took possession of it, and cut the string by which it was held, with a piece of volcanic glass.

The natives now made no difficulty of coming alongside of the ship, but would not consent to come on board. The number of canoes by degrees increased, and our barter was carried on with the greatest fairness imaginable. We even saw some of those people, who were pushed at a distance from the ship, by the concourse of canoes, before they could give us the article which they had agreed to exchange for that which they had received, making their utmost efforts for that purpose. They carefully fought for the persons to whom they were indebted; and some of them,
after an interval of half an hour, came and delivered us the articles which they owed.

[In this place the Author has minutely described a singular custom which prevails among the natives, who, according to him, cover certain parts of their bodies with a white shell, denominated *bulla ovum*, (See Plate III.) which, however, they appeared willing to dispose of. Delicacy forbids the Translator from entering either into a description of the shell, or of its uses.]

The great number of canoes with which we were surrounded, prevented many of them from approaching the ship; but some of the canoe-men swam towards us with the objects of their barter. Those islanders preferred, to every thing that we offered them, bits of iron in whatever form they happened to be. They so well distinguished that metal from all other substances, that they recognized it, even when coated with rust.

I thought that habit must have rendered those people excellent swimmers. But their movements were too precipitate; though they differed in no other respect from our good European swimmers. They needed not, however, to have made great efforts to support themselves in the water; for, by keeping their mouths shut, they immersed a part of the head. Several supported themselves in the water, by the motion of their feet
Savage of the Admiralty Islands.

Pubd by I. Stockdale, Piccadilly, 25th April 1760.
feet only, till they tied to our ropes, the articles which they wished to barter.

If we may judge of the character of those natives, by their conduct towards us, their dispositions were excellent: an air of goodness was expressed in their features. Very different from the savages of the little island, which we had visited two days before, they gave us proofs of great probity. It was surprising to meet with so great a difference in the manners of savages, so little removed from each other, and who practised the same arts. The disparity of their conduct towards us might have proceeded from this; that the savages of the little island had dealt only with boats, whereas the others did business with large ships, which inspired respect.

The commanders of the canoes commonly made the paddlers surrender the articles which we had given them. We saw with pain, that they sometimes employed violence for this purpose. One of those poor people had received from us a bit of red serge, which he was not willing to deliver to one of the chiefs; but the latter forced it from him, by repeated blows with his cudgel.

At the same time, one of the islanders, in another canoe, was treated with similar harshness, by one of the chiefs, because the poor wretch had allowed his attention to be occupied in contemplating
plating our ships, and had forgotten to bale the water out of the canoe.

The natives who swam towards us, in order to exchange their commodities, were considered as competitors, and soon excited the jealousy of those in the canoes which surrounded the ship. These last took great care to preserve their situation: they endeavoured to keep off the swimmers, and would not allow them to rest, by taking hold of their canoes. The swimmers, being thus obliged to move about continually, in carrying on their barter gave a great deal of activity to this singular scene of commerce.

These natives, like those whom we had seen two days before, preferred nails to knives.

Several had in their hands calabashes of different shapes, filled with lime very finely pulverized. Others had their lime in pieces of bamboo. One of these last, who had a spoon in the shape of a spatula, filled it with lime, which he showed to us, no doubt by way of recommending its qualities. By making many motions with his mouth, and greatly inflating his cheeks, he seemed desirous to persuade us, that his lime produced very agreeable sensations.

Another chief had a little parcel of the leaves of the pepper tree, *piper spiriboa*, Linn.

They probably chew them without the addition
tion of arec nuts; for we saw in their mouths none of the marks which are produced by the mastication of betel. We observed those articles of luxury only in the possession of the chiefs, for whom they are probably reserved.

Some of those savages wore bracelets formed of large shells, among which we observed sea ears, ground in the middle and the edges.

Most of them had different kinds of shells appended to the inferior lobes of their ears, which, when pierced, they are in the habit of extending so prodigiously, that they descend lower than their shoulders, as appears in Plate III. It seemed that they produced this great distension, by introducing elastic hoops into the holes. The only child we saw was furnished with two such hoops.

Their hair is crisped and black; but they frequently render it red with a mixture of ochre and oil, and sometimes they tie it up with a fillet of bark. Their skin is a light black, which they sometimes adorn with red figures in different parts of the body.

They carried neither bows nor clubs but only spears, from about five feet to six feet and a half in length. (See Plate XXVIII. Fig. 25.) The vitreous volcanic lava, of which their heads were formed, was ground to a sharp edge on each side.
about three inches in length, and fastened with a string, coated with a kind of mastic.

This weapon must be dangerous among a people who wear no cloaths. Their skin, constantly exposed, must be ill able to resist so sharp a piece of glas, especially in places where it has a little tension.

This volcanic glass is perhaps not very common in the Admiralty Islands; for some of those savages had spears armed with sharp pieces of wood instead of glass.

Many had the septum of the nose pierced with a hole, which contained a string, to the extremities of which were suspended dogs' teeth twice as long as human ones. One of them, wishing to part with this ornament, a chief, in cutting the string awkwardly, which was too short, with a piece of volcanic glass, wounded the native.

An order issued by the General very much interrupted this bartering trade; although the natives still had a great many things which they wished to dispose of. One of the chiefs very much amused us with his calabash of lime, the properties of which he displayed with many ostentatious airs, thinking, no doubt, thereby to enhance its price. His gestures might have been considered, as a happy imitation of those of our most dextrous mountebank doctors.

We
We did not observe among those islanders any articles of European origin. As by this time, we bought scarcely any thing, they quitted our ship, and carried the rest of their manufactures alongside of the Esperance.

Their canoes are formed of the excavated trunk of a tree, with boards fitted to its sides. Their length is thirty-two feet, and their extreme breadth not more than twenty-six inches. Their sides are supported internally by cross boards, which form so many divisions, in the bottoms of which are the paddlers, towards the two extremities of the canoe.

Those canoes are furnished with an outrigger, about thirteen feet in length, which projects laterally and nearly at the same distance. On the opposite side is a counter-outrigger, which does not take the water, and which is eight feet in length. It serves as a place upon which to lay the sail; the commander sometimes sits upon it; but his station is commonly on an elevated platform or trellis, of the same extent as the outrigger.

The sail is a mat, in the form of a regular square, 13 feet in the side. Two opposite sides of it are fastened to poles of the same length, which serve for yards. When the sail is set, one of its diagonals is always vertical, and its upper angle is elevated three feet above the top of the maff, which
is about twenty feet in height. The wind acts strongly upon so lofty a sail, and gives to those canoes an impulse, which makes them plough the water with astonishing rapidity.

When this swift motion is not required, they only hoist about five feet of one side of their sail in a horizontal position, while the rest of it lies on the canoe. But in this way they can only sail right before the wind.

Their paddles are very broad, and are furnished with a handle six feet and a half in length. They use them as our sailors do their oars; for they act like levers, whose point of support is on one side of the canoe. The steersman is stationed in the stern, and directs the canoe with his paddle.

After lying to till half past ten in the morning, we continued to follow the coast in a westerly direction. It is everywhere bordered with islands connected together by reefs. We observed, beyond those reefs, several fishing places, constructed with stakes fixed in the bottom, at a certain distance from the beach, and which resembled those which we afterwards saw in the Moluccas.

As soon as we set sail, the canoes followed our example, in order to accompany us. We admired the celerity with which that flotilla ploughs the waters. Although we had a very fresh breeze, and
and a great deal of sail set, those little vessels failed a great deal faster than our ships.

Close to a fishing place, much larger than any that we had seen, were seventeen canoes which immediately paddled towards us. We hove to, in order to wait for them; but as, notwithstanding our invitations, they remained at the distance of five hundred toises from our ship, we resumed our course, directing it to the W. ¼ S. W.

At the close of the day, two canoes pushed off from the shore, and advanced towards us. It was night before they came within hearing. One of the commanders immediately addressed us in an elevated voice. It is proper to observe, that the voices of those natives are very shrill. As it was almost quite calm, we endeavoured to allure them to the ship; but they durst not venture near enough to receive our presents.

It was imagined that a squib would be a pleasing spectacle to them; but on the contrary it terrified them so much, that they retreated with precipitation.

Notwithstanding the darkness of the night, those two canoes, guided by our lights, returned towards us. We sent them some articles of hardware, upon a board along with a lighted taper. The light, which we soon left at a distance, engrossed their whole attention; but they durst not come
come nearer to it than about 200 toises. It was amusing enough to hear the two chiefs address long speeches to the taper. They spoke with much warmth, supposing, no doubt, that one of us was coming towards them with this light. Chagrined, perhaps, at its silence, which formed so direct a contrast to their babbling noise, they returned in about two hours towards their island. Fires were all the while kept burning upon the beach, perhaps to show the canoes the place to which they were to return.

We lay to all the night.

August 1st. In the morning we saw the western extremity of that little insular group, which extends about fifteen leagues from east to west. The most western island is in $2^\circ 11' 36''$ south latitude, and in $143^\circ 47' 38''$ east longitude.

Reefs and sand-banks extended beyond them 8,000 toises towards the south-west.

We soon came in sight of other reefs, which were 5,000 toises in extent from east to west. They are situated in $2^\circ 13' 36''$ south latitude, and $143^\circ 40' 36''$ east longitude.

We carried a little sail towards W. N. W. during the night.

At day-break we had sight of the Hermit islands, discovered in 1781, by the Spanish frigate the Princesa, which saw them at the distance of about
about 25,000 toises. Their high lands seemed, at a distance, to leave intervals between them sufficient to afford us a passage; but we soon perceived their low-lands advancing into the sea, and distinguished the reefs which connected them together.

That little cluster is composed of thirteen small islands, having in the middle, like the Admiralty Islands, a principal one, extending from south-west to north-east by east, about 15,000 toises. The islets which surround it on all sides, except the south, are very small and very low.

We were 10,000 toises to the northward of those islands, and to the leeward of the northern point of the great island, when we saw some canoes under sail. They were behind the reefs, in which we saw no opening through which they could pass, and we believed that they could not surmount such obstacles; but, having come close to the reefs, they took in their sail, and, going into the water, they carried their vessels fairly over the rocks into the open sea.

The canoe which was first got over steered towards our ship, and the rest, being five in number, presently followed; but as their motions were slow, they were soon nearer to the Esperance, which was in our wake, and they advanced towards her. After manoeuvring with much intelligence
telligence to bring their sail into a proper position, they still chose to keep at the distance of about 100 toises. All the means employed to bring them alongside were ineffectual; but they went near enough to throw some apples of the *fpondias cytherea*, and several other fruits of different species of the *eugenia*, all very proper to be eaten. The bottles and bits of stuff given to them were received with marks of the greatest satisfaction; but it was surprizing to observe that they had little value for iron.

Like all the other natives we had hitherto met with, they appeared extremely desirous that we should land on their island.

One of the canoes advanced towards our ship, while the rest returned to the shore. Notwithstanding our invitations, those natives kept at the distance of 150 toises from us. They durst not touch the different articles which we sent them with a view to gain their confidence. Some, however, appeared desirous that their canoe should be steered towards our presents in order to get possession of them; but the sentiment of fear prevailed among the majority.

It was noon before we resumed our course. All the canoes followed us for some time before they returned to our island. That which approached the nearest to our ship accompanied us with the greatest
greatest perseverance. It was a very large canoe, manned by thirty people, who all appeared more robust than the inhabitants of the Admiralty Islands, and of the same complexion.

Those natives advanced towards us with very pacific views; for they were not furnished with arms; and, from on board the Esperance, to which they approached much nearer than to our ship, no weapons were observed even in the bottoms of the canoes. Perhaps they thought that by this means they might induce us to land.

Those canoes, though similar in appearance to those of the Admiralty Islands, were not nearly such good failers. That which came nearest to us had at first but one fail; but they set another abaft it, in order to follow us. This after-fail was much smaller than the forward one; and they were both in the form of a rectangle, the length of which was almost double its breadth. They were trimmed like the square fails of our long boats.

Their large fail was as much raised as that of the canoes we saw at the Admiralty Islands, and descended lower, so as to offer a greater surface to the wind.

The whole of the Hermit Islands, including the reefs, occupy a space about twelve leagues in circuit.
circuit, the centre of which is in $1^\circ 35' 38''$ south latitude, and $142^\circ 41'$ east longitude.

In the evening we were very near the most eastern of that little group, to which General Bougainville gave the name of Exchequer Islands.

It is very low, and only nine leagues W. S. W. of the Hermit Islands. The reefs on its north-west side form a basin, in which there appeared to be water sufficient for anchoring.

A great number of other islands were seen from north to west.

We made but little sail during the night, while tacking in order to keep to windward of those islands.

3d. At day-break the most easterly of the Exchequer Islands bore south, distant 5,000 toises. It is in $1^\circ 29'$ of south latitude, and $142^\circ 26'$ of east longitude.

At eight o'clock A. M. we steered towards the west; and we already reckoned thirty little islands from the N. N. E. to the W. S. W.

We steered for that which appeared to be the most westerly, to which we approached within about 2,500 toises. It is in $1^\circ 34'$ south latitude, and $142^\circ 10'$ east longitude.

All those islands are connected together by reefs, which seem to deny all passage. They are very low, and covered with very lofty trees.
More islands came into view as we advanced; and at last we had sight of the most south-westerly island of that little cluster, which is not connected to the rest by any reef. It is in lat 1° 39' S. and in long. 141° 58' E.

We lay to during the whole night.

4th. This morning, we saw, towards the south, a low and very woody island, about 8,000 toises in extent. This new island was in 1° 31' S. lat. and 140° 47' E. longitude.

We soon discovered another island, still less than, and to the S. W. of, the former, from which it is 15,000 toises. It is equally low, and covered with large trees.

On those low islands near the Equator, the trees grow with astonishing rapidity and vigour;* as the atmosphere furnishes them at once with extreme heat and moisture.

Although we had been, for some days, very near the Line, and found the heat suffocating, the thermometer had not yet risen above 24½°.

* This is more particularly true of trees, which are of a spongy texture, as the silk cotton tree, Bombax, the sand-box tree, Hura, &c. But many of the hard woods, for example, the lignum vitae, or Gujacum, grow very slowly, and hence have been almost extirpated, in all the tropical islands, fully inhabited by Europeans.—Translator.
We saw large trees floating, which had been detached from the low islands by the waves. One of those trees adhering to the prow of our ship, for some time retarded her motion.

8th. At five o'clock P.M. being upon the Equator, in 1° 35° 4' E. long. we saw a very considerable water-spout, forming in the south-west, at the distance of about 2,000 toises: although the air about us was very tranquil, the waves were foaming with agitation, at the place where the water-spout originated, over which a very small cloud hovered, apparently at the distance of a few feet. This phænomenon was in the form of two very elongated cones, joined at their summits, the base of one being upon the sea, and that of the other lost in a very thick cloud.

The clouds appeared to me to be agitated by a whirlwind, which having held a great quantity of water suspended, discharged it again in torrents. Perhaps all water-spouts are formed in this manner. If, as some natural philosophers allege, a water-spout carried up the sea-water, in a great body, it ought to be as salt in the moment of its descent, as in that of its ascent, which does not seem to accord with observation. A person, worthy of credit, who saw two water-spouts fall upon a vessel, assured me that they discharged fresh
fresh water. On the contrary supposition, it would not be easy to explain this phænomenon.*

9th. The limpidity of the sea-water was very much diminished, during this day, by a fucus, the filaments of which were very loose and short. I met with it again on the 6th of September, and shall afterwards speak of it more particularly.

We found sharks very numerous in those parts. We caught several of the species Squalus carha-rias, which is the most extensively diffused through the ocean. One of them, of a moderate size, astonished us by its voracity. Although lacerated by four hooks, which it had taken within the space of half an hour, it followed us, till it was hooked successfully.†

Being near New Guinea, and but eight minutes distant from the Line, the thermometer only indicated 25°, although we suffered a heat much more oppressive than that which is experienced in Europe, when the thermometer is at

* It is not very easy to give a satisfactory explanation of this phænomenon, upon any principles; though those of electricity seem to afford, or rather to promise, the most probable solution of it.—Translator.

† I knew a similar instance, in one of those monsters, which was eighteen feet in length. It was supposed to be the same which had devoured a man, some days before it was taken. Its liver hung up in a net dropped about ten gallons of oil.—Translator.
the same elevation.* In observing that that instrument is a very uncertain measure of sensible heat, I ought to apprise the reader that I always speak of the mercurial thermometer of Reaumur.

11th. This day, the Esperance ran foul of us, being the sixth accident of this kind, since we left Europe. She broke the foot rope of her sprit-sail yard, on the fore part of our rigging. Fortunately we kept the frigates asunder, by placing a boom between them. As it was a dead calm, we put out two boats, to tow the ships still farther from each other.† The boats, at the same time, observed the direction of the current, which carried us to the N. N. E. at the rate of half a knot in the hour.

12th. At day-break, we had sight of the largest of Schouten’s Islands, bearing S. S. W.

The surface of the water was violently agitated, in a large space, through which the Esperance had occasion to pass, in prosecuting her course. Fearing that it was caused by breakers, she put

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* I have very sensibly experienced the same effect myself. Is it owing to the greater quantity of water, which the air, constantly heated, holds in solution in tropical climates?—Translator.

* The difficulty of keeping ships asunder in a calm, is commonly, and very properly, given as an instance of the mutual attraction of bodies.—Translator.
About; but the deception soon ceased. This motion was produced by a large shoal of fishes, swimming near the surface, and which was pursued by a great number of birds.

Although it was now the season of the eastern monsoon, the winds blew, for four days, from the south-west to the north-west; but on the 14th, they resumed their south-east direction.

The same day, we saw a little island, very near New Guinea, and which is 10,000 toises distant from the island of Providence. That little island is in 2° 18' 48" S. lat. and 133° 8' 47" E. longitude.

The incessant and great heats in those latitudes, accelerated the decomposition of our water, which was so much the worse, as that to the use of which we were by that time reduced, was somewhat brackish. For the water which we first took in at Carteret harbour, was taken up too near the sea, and had been preserved, notwithstanding its bad quality. Besides, that the ballast may not be diminished, it is usual to fill the empty butts with salt-water, which ought to be well rinsed out, before they are again filled with fresh. But the boatswain's mate, who had the charge of the water, did not take so much trouble. It was easy to free the water from its inflammable
air, by the machine, which I have already described; but it always retained a brackish taste.

18th. A storm had howled, for a part of the night, on the coast of New Guinea, and had given us a great quantity of rain. The sky seemed to announce a tempest; but the storms near the Equator, are more menacing, than really formidable,* and we soon enjoyed a very clear sky.

We saw a fine chain of mountains which ranged towards the east. The highest of them appeared to be at least 750 toises in perpendicular altitude. The large trees, with which they were covered, added greatly to the picturesque appearance of the country.

19th. Being in 0° 18' south latitude, and 430° 52' east longitude and 1,000 toises distant from New Guinea, we sounded with one hundred fathoms of line, but found no bottom.

The first indication we had of the inhabitants of that island, was the smoke of two fires, which rose from among the large trees near the coast.

We were then near the promontory of New

* Should not the Author have excepted, at least, the hurricanes at Amboyna, mentioned below (Oct. 14.) not to speak of those, which too often rage in the West Indies?—Tranf.

Guinea,
Guinea, which is called the Cape of Good Hope, and which we doubled at the distance of 1,000 toises. It is $0^\circ 20'$ south latitude, and $130^\circ 34'$ east longitude. We were surprised that Foresf, in other respects an accurate navigator, should have so much mistaken its true latitude; for that which he gave, differed from ours more than $20'$ towards the north.

The variation of the compass, after a gradual diminution was now but $1^\circ 30'$ east.

We were prevented by calms from coasting along New Guinea, till a sea-breeze sprang up, about three o'clock P. M. The shore was generally broken and rocky; but we observed some sandy spots, of a gentle declivity, which presented convenient landing places.

21st. On the morning of this day we were very near the two little islands of Miss Palu. The least of them is in $0^\circ 20'$ south latitude, and in $130^\circ 7'$ east longitude. The largest is in $0^\circ 19'57''$ south latitude, and $130^\circ 4'30''$ east longitude.

23d. We steered close to the shore of New Guinea, with an intention to enter among the Moluccas, by Watson's Strait. It would have been agreeable to us to explore that strait, which is much less frequented than those further to the westward. Besides, we would have had the advantage of keeping more to the windward, than by passing
passing through Pitt’s Straits, which the continuation of the south winds induced us to take.

About eleven o’clock in the morning, being to the north-west, and very near it, we found that we were upon a shoal, which extends more than 5,000 toises from the coast of Bantana. We were strongly intangled in it, when the lead indicated eight fathoms water, rocky bottom. It was a bank of coral, which the transparency of the water displayed in all its whiteness. We were obliged to go about, in order to extricate ourselves from so dangerous a situation.

We entered the straits about half an hour past two P. M. A canoe which we saw at the entrance near the coast of Bantana, at one time appeared to us to be making for the Esperance; but it soon hastened towards the land.

Having lain to for some time to wait for the Esperance, we observed that the current carried us very rapidly through the strait. The tides very much influence those currents, which, about midnight, and early the next morning, were very considerably abated.

Five canoes were sailing along the eastern shore, at a good distance from one another. We observed, that one of them had a flag hoisted, which we took to be Portuguese. The wind was carrying us towards the coast of Salwaty, and hindered
hindered us from steering for those canoes. Besides, none of them seemed inclinable to meet us. These people did not know our intentions; and perhaps they were apprehensive that we were of the number of those Europeans, whose avarice induces them to employ every stratagem to entrap them, in order to make slaves of them.

High lands, every where covered with large trees, border the Straits of Pitt.

We lay to all night. At nine o’clock we heard from the western shore the voice of some natives, who seemed to address us. At the same time a fire appeared on the western point of the entrance, about the place from whence a canoe came off, when we entered the strait.

24th. At day break we were very near Passage Island, and we observed on the coast of Bantana, a little village, the inhabitants of which seemed to view us with much indifference.

The Strait of Pitt extends about 2,5000 toises from W. S. W. to E. N. E., and its mean breadth is about 5,000 toises. On heaving the lead from on board our ship, no bottom was found with seventy-five fathoms of line. But the boat, at 100 toises from the shore, had from fifteen to eighteen fathoms of water, the bottom being calcareous rock.

We went about, in order to avoid some shoals which
which we observed, on leaving the strait, very near the coast of Bantana. But several persons were of opinion, that there was water enough to carry over both the ships.

The opening of the strait on this end is near 15,000 toises in breadth. We observed in it two little islands, very near the Bantana shore.

The western point of Salwaty was found in 1° 2' 10" S. lat., and 128° 32' E. longitude.

The constancy of the wind from S. S. E. deprived us of all hope of getting round Mixoal island to the eastward. We were therefore obliged to endeavour to make the north of Ceram, in order to get round, by the western extremity of that island, to Amboyna.

About six o'clock P. M. we were 15,000 toises distant from the island of Popo, which bore S. 6° W.

The next day we steered with that island on our starboard, distant about 8,000 toises. It presented a flat surface, in the midst of which rose three hills, near one another. We had a near view of some little islands to the south-west, and which extend nearly from the north-east, to the south-west.

The island of Popo is in 1° 9' 14" S. lat., and 127° 40' E. longitude.

We saw the islands of Canary and Mixoal, with
with part of the little islands which surround them.

This morning we lost a young sailor of the name of Pichot, who died in a state of marasmus, the consequence of a dysentery, under which he had laboured for six months.

20th. This day the position of Canary Island was found to be in $1^\circ 51' 36''$ S. lat., and $127^\circ 35'$ E. longitude.

27th. Our ship was this day surrounded with a kind of whales, which were from twenty to twenty-five feet in length. They were sufficiently numerous to afford fishers, by their oil, an ample compensation for their labour and expense.

29th. Very early this morning we came in sight of the lofty mountains of Ceram, which extending from the S. E. to the S. S. W., presented us with a very fine landscape.

Such high mountains afford effectual protection to the independence of their inhabitants. Hence it is, that only a small number of the natives settled on low parts of the island, near the sea, endure the tyranny of the Dutch.

September 1st. The clouds having been entirely dissipated from the land of Ceram, we enjoyed the magnificent prospect of several chains of mountains running parallel to each other, in
the direction of east and west. The fine valleys which separate them, support a luxuriant vegetation, and have the appearance of the greatest fertility.

We observed many fires on the island of Ceram, some of them upon one of the highest mountains, which proves that their summits are frequented by the natives. That mountain appeared to us to be at least 1,200 toises in perpendicular elevation.

Availing ourselves of the calm, we sent a boat to ascertain the direction of the current, which then set to the N. E. 4 E. at the rate of three quarters of a knot in the hour. As, among those islands, the currents depend very much upon the tides, it may be supposed that their force and their direction vary extremely.

On the approach of night we were about 1,000 toises from the coast of Ceram, which becoming less elevated, seemed to indicate less depth of water on its coast. The lead, however, did not reach the bottom with thirty-seven fathoms of line.

Soon after this, we saw on the land side, several fires, which appeared to have been kindled by fishermen, in order to decoy the fish.

2d. About noon we descried the island of Bo-
noa, extending from W. 20° S. to S. 48° W. at the distance of near 20,000 toises. That island is in 2° 58' S. lat., and 125° 56' E. longitude.

We took care frequently to heave the lead, when we were near the land; but we had no soundings with sixty-six fathoms of line.

In the evening, a strong land breeze carried us into the channel between the islands of Ceram and Bonoa, in which, by moon light, we observed three small islands. Although it was quite calm, the current carried us almost to the other extremity of the channel.

About midnight, while the air scarcely moved, the waves which foamed very near our ship, made us apprehensive that we were approaching to breakers. But our alarm was of short continuance, having been only occasioned by the rapid current of the tide, which followed the direction of the channel, and opposed our progress.

5th. We were at a small distance from Kilang. The General intended to pass between that island and Ceram; but the channel, which at best is but strait, appeared to be additionally obstructed by reefs and a sand bank. We therefore made good our passage, very close to the westward of Kilang. The country presented beautiful plantations of cocoa-nut and banana trees, encircling a charming village.

We
We then continued our course between Kilang and Manipa.

About eleven o'clock A. M. the current of the tide raised a rapid succession of waves, tumbling over each other, in wild conflict. We were, in fact, several times witnesses of that phenomenon, which Dampier and Bougainville compare to the current of a large and very rapid river.

About four P. M. we had doubled the island of Manipa, which is not more than 2,500 toises in extent from north to south. Though very mountainous, that island appeared to be populous, and many canoes were plying along its shore. Its latitude is 3° 21' S., and its longitude 125° 47' E.

The island of Kilang is in latitude 3° 17' S. and longitude 125° 31' E.

4th. A breeze which arose in the offing, at ten o'clock A. M. favoured our progress towards the south; and we soon had sight of a part of the west coast of Amboyna, bearing S. S. E.

The south wind afterwards opposed us, and obliged us to tack.

5th. A very fresh breeze from the south-east put an end to our hopes of gaining our intended anchoring place this day. Our scorbutic patients, whose number was rapidly increasing, and whose condition became daily more alarming, made
made us ardently wish for a favourable wind. Their disorder had been greatly influenced by the perpetual rains at Carteret harbour; and most of them were afflicted with great pains in the loins.

One of their first symptoms was the appearance of whitish tubercles, frequently as large as a pullet's egg, in different parts of the body, particularly on the arms, and which were commonly succeeded by others on the lower extremities.

It was remarkable that the skins of those patients were not discoloured with what are called scurvy spots, as that disease, in hot climates, rapidly suffuses the cellular membrane with a lymphatic humour, which scarcely alters the colour of the skin.

I must farther observe, that, although salted provisions be one of the principal causes of the sea-scurvy, yet two of our men, who did not subsist on such provisions, were violently attacked by that disorder. But one of them worked in the hold, the humid and spoiled air of which is a powerful cause of the malady.

By means of tacking, we came near enough the western extremity of Amboyna, to allow us to enter the road in the night. By the direction of Valentin's plan of it, we kept along its eastern side, at the distance of about 510 toises.

As soon as we had passed Portuguese-bay, we brought
brought to, and waited till day light should discover to us a proper place to anchor in.

6th. The Esperance had not made such progress as our ship; but was 5,100 toises to the south-west of us, at seven o'clock this morning, when we were within a small distance of the principal establishment in the island.

Here I met with the _fucus_, which I had before observed near New Guinea. It resembled very fine tow, crossed by little pieces, somewhat more than an inch in length; the filaments are as fine as hairs. They are frequently seen united into a sort of bundles, and are so numerous that they fully the water in the road.

General Dentrecasteaux sent his second lieutenant to wait upon the Governor of Amboyna, in order to ask permission to stop at his island. The Governor immediately summoned the Council, and gave us leave to come to an anchor; but, as the act which the second lieutenant presented to them, in the name of the Commander, had not yet been communicated to them by the government of Batavia, they were inclined to impose conditions on us, to which we could not consent. Yet it was not difficult to make them sensible, that we had anticipated, by several months, the arrival of their dispatches from Europe, which seldom reach Amboyna, till eighteen months
months after their date. It appeared to us, that their caution originated in the desire of saving themselves from being blamed by the government of Batavia, to which that of Amboyna is subordinate; for as soon as they had adopted regulations in that respect, they rendered us every service in their power.

We found that little island much better provided than we could have expected, with every article necessary for the prosecution of our voyage.

A captain in the service of the Dutch East India Company was sent by the Governor, to point out to us a proper anchoring place; and having made some tacks, we let go our anchor about half an hour past one P. M. in twenty-five fathoms water, bottom mud and sand. The tower of Victory Fort bore from us E. 9° N. the nearest redoubt W. 35° S. and the western point of the entrance of the road, W. 26° 30' S. We were about 340 toises from the landing place, a wooden wharf, near which there is water for large ships. One of the Company's ships then lay at it, taking in a cargo of cloves.

At the same time there were in the road eighteen vessels under Dutch colours; but only one ship: most of the rest were brigs and sloops.

The Esperance came to an anchor half an hour after us, and bore N. E. ¾ N. of our position.
CHAP. VIII.

Stay at Amboyna—A Cabin-Boy belonging to the 
Recherche, is accidentally drowned—Visit to the 
Governor—Different Excursions into the Interior 
of the Island—One of the Naturalists falls danger-
ously ill—Description of his Disorder—Agreeable 
Liquor furnished by the Sago Palm—Sugar ex-
tracted from it—Uses of the different Parts of 
that valuable Tree—Means by which the Flying 
Dragon sustains itself in the Air—Explanation of 
Maté, which preserves the Crops from being plun-
dered—A Dutch Sailor flees into the Woods for 
fear of being sent to Batavia—Dextrous Manner 
of catching the Cancer Carcinus—Cabins of the 
Natives of Amboyna—Their Clothing, &c.— 
Their Method of procuring Fire; and of Fishing 
in the Night—Culture of Nutmegs and Cloves— 
A long Bamboo cut so as, with a brisk Gale, to 
emit a very agreeable Sound—Fisheries of the 
Inhabitants—A Sago-Work—Extraction of its 
faecula—Diseases common at Amboyna—Various 
Reflections on the Island and its Inhabitants.

At half an hour past three o'clock we saluted 
the place with nine guns, and the same 
number was immediately returned. 

The
The Commander had engaged all his officers to accompany him, about five in the evening, on a visit to the Governor. As I knew nothing of this appointment, I landed, along with some persons belonging to our ship, to view the town. It is encircled with gardens, in which trees are chiefly cultivated; because they favour the indolence natural to man in a sultry climate, and afford him a profusion of fruits, with little other trouble than that of gathering them.

Besides the kind of wild bread-fruit tree which we met with there, the inhabitants assured us that there was another which bore a fruit, the seeds of which all misgave; but that the fruit was only of a middling size, and the tree did not produce a great quantity of it.

Several kinds of banana trees, and many varieties of oranges grow in those charming gardens; and they produce delicious guavas, papaws, and different species of pine-apples (anones). We observed there some specimens of the *lawsonia inermis*, which rose to the height of ten or twelve feet.

Different odoriferous plants were profusely scattered around. We there found the *chalcas paniculata*, the *michelia champaca* and *tsiampaca*, and several species of the *uvaria*. The Arabian jessamine, *nyctanthes jambuc*, rising amidst those charming
charming trees, mixed its sweet odour with their delightful perfumes.

On our return into the town, one of the protestant ministers conducted us to his house, where he entertained us with several sorts of spirituous liquors. But limpid water, just drawn from the spring, was the most agreeable draught to persons, who had long been confined to brackish water and salted provisions. This excellent minister appeared to be much surprized at our being regaled at so small an expence. He informed us that earthquakes were frequent at Amboyna, and that some years ago one, among others, had been very forcibly felt; that it was accompanied with a hurricane which continued nearly three days, during which time the sea had overflowed, and inundated the ground on which the town is built.

This calamity is the most to be dreaded at the change of the monsoons, and particularly at the commencement of the western monsoon, which takes place, in those latitudes, in the month of November.

7th. One of the cabin-boys, of the name of Gabriel Abalen, who served the table of the marine officers, disappeared on the night of the 7th. He had been observed to be on board all day; but after dark was called several times in vain. He was
was a good-natured young man, and in general very temperate; but, during that day, had drunk so much strong liquor, as to justify serious apprehensions concerning him. He probably fell overboard, and it was known that he could not swim.

All of us had much need of remaining on shore, in order to recover our strength; and the Governor gave us leave to take lodgings in the town.

8th. It was a matter of importance to the naturalists to be acquainted with the Governor of Amboyna, in order that he might facilitate the researches which formed the object of their mission. It was, no doubt, owing to pure forgetfulness, that the Commander of our expedition did not make us acquainted with the hour of his first visit to the Governor. But I requested him to favour us with an introduction, and we accordingly set out for that purpose, about half an hour past six. M. Bourguelles and M. Van Smiehl pressed themselves upon us as our interpreters.

M. Van Smiehl was a German Baron, who had lately arrived in the island. He was then but aspiring, as he expressed it, to be a servant of the Dutch East India Company. In the sequel, we had reason to felicitate ourselves that he had not much influence on the Governor; for he had attempted to persuade him, that the Regency of
Batavia would not approve of our ships being allowed to remain at Amboyna. Yet the Baron very well knew that, in the preceding year, two small English vessels, fitted out at Bombay for the Pelew Islands, had been received without the least difficulty. They had first put in at Bourou; but, finding no provisions there, had been permitted to ship some at Amboyna; and those vessels were far from having so good a title as we had to such indulgence. But, perhaps, the appearance of foreign vessels in that road, for two years successively, made it necessary for the Governor to take every precaution, in order to save his responsibility. He received us very favourably; but we were unhappy that he appeared in his ceremonial dress on our account; for he was oppressed with heat, under a very heavy coat of black velvet. Such garments are extremely inconvenient near the Line, but the Dutch Governors wear them, as a prerogative annexed to their station.

Some refreshment was offered to us. I wished for nothing but water, and I poured out that which appeared the most limpid; but its flatish taste made me think that the domestics had, by mistake, brought me some medicinal water. It was in fact Seltzer-water, which the Dutch here usually drink as an agreeable potation; and it costs them
them as much as the best rhenish wine. Surely they were not aware of our repugnance to such a beverage; yet they might have supposed that, in a torrid climate, and after a long privation of fresh provisions, we would not be very fond of swallowing salt water.

The General proposed to introduce us to the members of the Council also, to which we readily assented; and they gave us a very kind reception.

10th. As we intended to remain at Amboyna, for a month at the least, I had conveyed to the place where we were to lodge, many things necessary for the preparation of the different productions, which I intended to collect in the island. The other naturalists and I had agreed to live in the same house. It was already prepared for our reception, and our things had been carried into it, when, to our great astonishment, we found it occupied by some officers from the two ships, who, however, knew very well that we had taken the house; but the man who had the key thought that they belonged to our party. The gentlemen made themselves very merry with this pitiful trick, of which we did not think them capable; but it was easy for us to find other lodgings.

Our apprehensions respecting the cabin-boy, who had disappeared three days before, were but
too well founded. His body had remained at the bottom of the water all that time; but, about half an hour past two in the afternoon, it was seen floating near the ship. This small distance from the place where he had fallen into the sea seemed to prove, contrary to the opinion of most of the Europeans settled at Amboyna, that the rapidity of the currents in the road is confined to the surface merely, and does not reach the bottom, a circumstance which, for other reasons, appears to me very probable. In fact the currents are determined by the tides, pouring their waters into and out of the road, only to restore their equilibrium, which, in these circumstances, is disturbed to but a small depth from the surface.

This young man was much regretted by all the ship’s company. Many exclaimed against the carelessness of those, who had had the charge of him in his early years, in neglecting to instruct him in swimming. A few lessons in that art would have saved the lad’s life; and it is to be wished that his fate may serve as an example to others; for I have observed with astonishment, that many of the sailors cannot swim.

Our observatory was this day established, in the western part of the town. As it could not be seen from the ship, it was found inconvenient to be
be obliged to go upon the beach, in order to compare the motion of the watches with that of the clocks.

This western part of the town, in which we also resided, formed the Chinese quarter, in which there are few natives of the island, and only one Dutchman. The rest of the Dutch inhabit the centre of the town, or its eastern part.

Our strength was so reduced, that we were obliged to content ourselves, for some days, with short excursions from the town.

We viewed the garden of the Company, where there is nothing remarkable but a very convenient bath, which the Governor visited regularly every third or fourth day. It is supplied with very pure water from a neighbouring hill. Near it is another bath appropriated to the use of the women.

The Dutch at Amboyna are in the habit of bathing every third or fourth day, when they carefully avoid exposing themselves to the excessive heat, which prevails from eleven in the morning till three in the afternoon. Indeed they are seldom seen abroad during those hours on other days. For our parts, we had not leisure to take so many precautions; and accordingly two of the naturalists were attacked with dangerous disorders.

We many times endeavoured to penetrate into the
the large plantations of fago trees; but the water with which they are floated often forced us to abandon the attempt. That tree, so useful for the support of man, forms a part of the riches of the island.

The flat strand, at low water, is covered in many places with a multitude of crabs, of the species denominated *cancer volans*, which then emerge from the holes which they dig in the soft ground. This singular creature, one of whose claws is sometimes larger than its body, often becomes the prey of birds. I believe the facility with which its claws are disjoined from its body is the reason why one of them is almost always much larger than the other.*

A little excursion to the south of the town, near the quarter inhabited by the Europeans, brought us to the tomb of Rumphius. The simplicity of this monument reminded us of the manners of that able observer of nature. It was encircled with the beautiful shrub, known by the name of *panax fruticosum*.

* The great disproportion of the claws to the body, and to one another, is more probably a distinctive characteristic of this curious species of crab. I have seen many thousands of them; but never an individual in which this disproportion did not exist. Places situated to leeward of the muddy salt-flats, in which those creatures breed, are justly reckoned extremely insalubrious.—Translator.
We saw, in the hands of some natives, the pretty lorry of the Philippines. These, however, were not procured from so great a distance, but from some islands a little to the eastward of Amboyna, and chiefly those of Arrou. They had also another species of the lorry, which breeds in the forests of Amboyna, and which differs from the former in its colours, which are less vivid, and not so beautifully blended. Most of those parrots pronounced some words of the Malayan language.

Towards noon, the heat of the sun affected us with such a head-ach, as forced us almost always to retire to some shade, in order to defend ourselves from his direct rays.

Very early on the morning of the 15th we proceeded towards the west; but about mid-day the heat was so very oppressive, that we were obliged to return home.

The naturalist who did the duty of chaplain, became so dangerously ill, that we could not leave him a single moment for four successive days. The symptoms of the malignant fever, with which he was attacked, were very dreadful. His stools were extremely fetid, and accompanied with frequent vomitings, starting of the tendons, a small pulse and great prostration of strength. The nervous affection of the patient came to such a height,
a height, that every evacuation was attended with a degree of weakness which deprived him of recollection. His lower extremities were affected with violent spasms, which occasioned very great pain.

Although the disease was exceedingly infectious, no danger ought to have prevented us from paying to our distressed ship-mate, all the attention which he had a right to expect from our friendship; and accordingly we suspended our researches in natural history, till we should see him out of danger.

16th. The next day the symptoms became still more alarming. The pulse more and more depressed, with frequent intermissions in its motion, the hiccups, sometimes continued for half a quarter of an hour, a great prostration of strength and an appearance altogether dis compose, made us entertain serious apprehensions for the life of our patient.

In the night, the symptoms were equally alarming.

About break of day, on the 17th, the pulse sensibly increased, and a certain flexibility in the stroke of the artery, afforded us the happy presage of an abundant perspiration, which accordingly succeeded in a few hours, and snatched our friend from the gates of death.

He
He was in a state of convalescence not more than eight days.

This species of fever, occasioned by stagnant waters, in a tropical climate, was treated with diluting draughts and antispasmodics. Ether given frequently, and in small doses, had a tendency to support the strength of the patient, while it moderated the violence of the symptoms.

M. Hoffman, surgeon of the military hospital, visited our patient several times a day. Our chief surgeon also regularly attended him.

M. Bourguellés, the Company's treasurer, persuaded the Commander of our expedition, that the united skill of all the physicians in Europe, was not equal to that of a Malay doctor, in the treatment of such diseases. One of the most able of them was therefore called in. He did not propose to perform the cure by internal remedies; for he gave the patient nothing to take; but after rubbing slightly the skin of different parts of the body, and properly adjusting the lower extremities, he pronounced, with a mysterious air, some words, which he seemed to address to the Supreme Being. Then he conjured, as we were told, the evil spirits, whom those islanders look upon as the authors of diseases. M. Bourguellés was overjoyed to see the doctor operate in his best manner, in order to obtain the desired success.

We
We allowed him to do every thing, from which no bad consequences could result; but it was our business to interrupt his operations, when he was proceeding to soufe the patient, with a pail of water, newly drawn from the well. It was but a very little time before the critical sweat, which terminated in his recovery.

The Malay doctor doubtless placed all his science in this experiment; but he did not know that it would have suppressed the critical perspiration, of which the pulse had given us the happy presage.

Our patient was sufficiently recovered on the 19th, no longer to require such assiduous care. We therefore proceeded westward into the country. After having long followed the course of a little river, which runs into the harbour at a short distance from the town, we were returning with a load of fine plants, when, at the approach of night, we met some native fishermen who had been equally fortunate, in their way, and who were proceeding to broil their fish. We had the pleasure of seeing them light up their fire, by means of two pieces of bamboo, rubbed against each other, after being cut in a manner which I shall presently explain.

20th. We employed half of the day in an excursion towards the south; and we made haste to ascend.
ascend a hill, where we found some young natives setting snares to catch birds. They consisted of hairs formed into nooses and tied to a very long rope, which lay on the ground, and was fastened to a wooden peg driven into the earth.

I supposed that they made use of baits to attract the game; but they told me that they did not, and at the same time confessed, that they caught but few birds.

At the bottoms of the hills, we observed the fine palm which the natives call the fago tree, and which Rumphius has described (vol. i. fig. 13,) under the name of faguerus. From the pedicles of the boughs (regimes) of this tree, when newly cut, a very agreeable liquor oozed, which was received in pieces of bamboo, tied to their extremities. In so hot a climate, this liquor very quickly ferments, and would become acid, if the inhabitants did not add to it some of the wood of the foulamea, which, by the fermentation, is entirely freed from its bitter taste, and preserves the liquor a long time.

One of these palms may yield daily, for above two months in the year, from a gallon and a half to two gallons of this liquor. In order to facilitate its efflux, the incisions of the pedicles are daily renewed.

As the heat of the sun favours the ascension of
of the sap, one would naturally suppose that the tree would yield a greater quantity of this liquor during the day than during the night. The fact, however, is quite otherwise, for the humidity which is absorbed by the leaves in the night, mixing with the juice, increases its apparent quantity; but that which is obtained during the day contains much more of the saccharine principle, which is to be extracted.

This extract forms a kind of sugar, which the Malays call goula itan (black sugar.) It is commonly met with in small loaves, which retain the shape of the hemispherical vessels, in which the redundant water is evaporated. Its colour approaches to that of chocolate; but it is deeper. On breaking those little loaves, there appear, especially towards the centre, yellowish shining grains, a circumstance which renders it probable, that there would be no great difficulty to bring it to the degree of crystallization, necessary to convert it into sugar of a good quality. Such as it is, the natives scarcely use any other, that which is extracted from the sugar-cane being sold for seven or eight times the price.

From this almost exclusive use of the goula itan, one would be apt to conclude, that the sugar-cane was not produced in the island. Almost all the inhabitants, however, devote small portions
portions of their gardens to this valuable plant; but they content themselves with regaling on its juice, which they express by mastication.

In addition to the agreeable and wholesome liquor afforded by this fine palm, the leaves (or limbs,*) are adorned, towards the base, with filaments which the natives convert into good cordage. From the form and black colour of those filaments, one would take them, at the first sight, for horse-hair, but they are almost twice as large. The young fruit, prepared with sugar, makes an excellent comfit.

Some fractures in the earth near the bottoms of the hills, disclosed to our view the hard, clear, grey fletite, which forms their bases.

22d. In an excursion which I made to the south-west, I found many rocks of very friable schistus, of a light grey colour, and near a very hard species of asbestos.

One would be apt to imagine, that, in an island so little removed from the Equator, the preparation of the subjects of natural history would be

* The French word is feuilles. But the English use the word limb, for the shoots of the cocoa-nut tree, the cabbage tree and other species of palm; and very properly: they are too large to be called leaves, and, being deciduous, cannot be called branches, in the ordinary sense of that term.

---Translator.
singularly facilitated by a quick desiccation. The contrary, however, was so much the case, that I was obliged to make great exertions to save the fruits of my botanical harvest from ruin. In fact, the air, in passing over the waters of the ocean, becomes charged with a degree of humidity, which greatly injures such preparations, and the heat of the climate quickly destroys those plants which are most retentive of their juices.

23d. At four in the morning, we directed our course towards the east.

We had several times to cross the beautiful rivulet, known by the name of Vai-Tomon, which enters the sea a little to the eastward of the town. Its banks were covered with a great number of plants, among which are several species of the *Jussiaea*. I observed on the surface of the brook, the species distinguished by the name of the *Jussiaea tenella*; and I admired the precaution taken by nature for its preservation, in disposing along the stalk large oval tubercles, filled with air, to make the plant swim. Those vessels are but little different from the air-bladders, with which most fish are furnished; only in this instance, each vessel is composed of a great number of smaller ones; because otherwise they would be in danger of being destroyed, by the shocks of the different bodies brought down by the stream.

Notwith-
Notwithstanding the shade of the surrounding trees, the *elecarpus monogynus* was covered, even to its lowest branches, with fine flowers, elegantly figured. In those solitary forests, where the sun does not easily penetrate the thick foliage, it is astonishing to observe the vivid colours of several kinds of parasite plants, of the genus of *orchiodes*, mostly cleaving to the trunks of the largest trees. In the least crowded spots, the tree of the *aralia* class, designated by the name of the *cushionia thyrsiflora*, adorned the forest with their large pinnated leaves.

Among the great number of lizards which were busily pursuing insects, I admired the agility of that called the flying dragon (*draco volans*, Linn.). During the greatest heat of the day, that pretty animal rapidly darted from branch to branch, by extending two membranes in the form of wings, by means of which it sustains itself for some time in the air. Nature having denied it the muscles necessary for the vibration of this kind of wings, it can only spread them out to counteract the rapidity of its descent. With its hind feet it gives its body an impulse, which not interfering with its defensive motion, sometimes carries it forward a few toises, and to a height nearly equal to that of the place whence it darted.

In my return, I wished to take some branches
from the different vegetables which grew in a
garden belonging to a native of the island. But
the guides who accompanied us, apprized me of
the danger to which they believed I would expose
myself. Pointing to a little shed, they several
times repeated, with an air of respect blended
with fear, the word *maté*, before our interpreter
could explain to us, that, by this term, which
means a dead person, they meant to signify the
ancient possessor of the garden, who lay buried
under the little shed, which we saw. The natives
are persuaded, that the soul of the deceased posses-
sors wander in the neighbourhood of such places,
in order to preserve their products for the pre-
cent proprietors. They believe, that any other
person who should take any part of such pro-
ducts would die within the year; and so gene-
really is this belief diffused, that seldom does any
inhabitant allow himself to touch the property
of another; so that this *maté* is a bugbear, which
almost always infures the harvest to its legitimate
possessor.

The General went on board to review the
ship's company, and he procured advances for
them all.

25th. My collection was already so numerous,
and called for so much care, that I spent almost
the whole of the 24th in preparing them; but
the
the next day Citizen Riche and I ascended the river called Batou Canton, which empties itself into the road on the west side of the town. It is confined in a very deep channel, excavated by its current between the hills, which in many places are of difficult access. We proposed to ascend as far as we could, endeavouring to follow exactly the windings of the banks; but their steepness obliged us to take to the channel itself, where the water was seldom less than eighteen inches in depth.

We had advanced but a few steps, when we met a Dutch sailor, who had made his escape from a large ship loaded with cloves, and which was on the point of failing for Batavia. The dread of perishing by the contagious malady so fatal to Europeans, who remain there even for a very short time, had made this unhappy man resolve to conceal himself in the woods till the ship should have failed. We lamented his unfortunate situation; but little did we foresee that the place which he dreaded so much, was to terminate our own peregrinations.

On the banks of this river; there grew in abundance, a new species of begonia, remarkable for the smallness of all its parts.

A beautiful granite, of a fine grain, formed the base of those hills. Quartz, generally very white,
white, was there in some cases tinged by the green fleatite, and in others by iron, which gave it the colour of rust. Mica was there disseminated in a very uniform manner, and we found schorl of a black colour, in minute slender fragments.

While we were employed in collecting objects of natural history, our guides took the opportunity of providing themselves with a repast of a species of crab (cancer carinus), with which this little river abounds. Their manner of catching them gave us a good opinion of their ingenuity.

This crab commonly seeks its food in the clearest water, which it slowly traverses, but the instant it is approached, it moves off with extreme rapidity. The islanders, however, managed to catch a great number of them by the eyes. Having tied to the end of a wand a horse hair with a noose, they render themselves masters of the animal by passing this noose over the basis of the spherical part of the eye. When they miss their aim, the crab seldom fails to return, and in the end is almost always taken.

Having early consumed all our provisions, we hoped to find some natives towards the latter part of the day, who would sell us some. It was about three in the afternoon, when we advanced confidently towards a small house, near the bank of the river. But what was our astonishment, when,
when, to every thing we asked for, we received no other answer than tarda; for thus the mistress of this little habitation signified, that she could not furnish us with any of the articles which we desired. Yet we took great pains to assure her, that we would pay her exactly for every thing she gave us. We were the more surprised at this pretended poverty, as the appearance of the natives announced abundance. In the sequel I learned, that those peaceable people have not always reason to be satisfied with the conduct of the Europeans, who govern their island. They thought their safest way was, not to trust to our promises. A few glases of arrack, however, and some trifling matters which we distributed among them, at last gained us their confidence.

They invited us to sit down under a shed formed by an elongation of the roof of the cabin. Crabs caught in the little river were set before us in abundance. They roasted for us potatoes and yams, and regaled us with the wine of the figo-palm, slightly fermented. This liquor, which, when newly drawn from the tree, is called jugour monda, and aper figuero monda, is much more agreeable than the milk of the cocoa-nut. The girl who was preparing our repast, to a figure and appearance extremely pleasing, joined an air of sincerity which gave charms to the interest which
She inspired. Having brought us some fruits, she immediately went and seated herself behind her mother, from whence she occasionally stole a glance at us, to satisfy her curiosity.

This frugal repast was not without its charms. To our reflections on the life of a man who undertakes long voyages, were added the pleasing idea which we had formed of the happiness of those islanders, whose wants nature has supplied with so liberal a hand.

The construction of their houses is adapted to the beauty of the climate; and the lightness of their materials renders it unnecessary to dig their foundations down to the rock.

As the inhabitants never experience severe weather, the walls are constructed in such a manner as to allow a free passage to the air. They consist of a sort of paling, frequently formed of twigs of bamboo, placed very near each other.

The cottage of our host, which occupied a space thirteen feet in length, and about ten in breadth, instead of bamboos, was wattled with the stems of the sago-tree limbs (feuilles), which, though near together, left some intervals, through which the external air had free access into the habitation.

Those stems, though very light, have a great deal of solidity, being covered with a very hard bark.
bark. The heart of them consists of a fungous substance, which the inhabitants use instead of corks.

Every part of this habitation was derived from the fago-tree, even to the roof, the top of which being about ten feet in height, was covered with the leaves (folioles) of that valuable tree. They were plaited and fixed to a pole, thus forming rectangles often the whole length of the house, and about eight inches in breadth, and as they overlapped each other, they were impenetrable by the hardest rain.

The two sides of the roof were inclined about forty-five degrees, and a part of it formed at the door a little shed, where the family enjoyed the fresh air, and where also they dressed their victuals; for, as the cottage was not furnished with a chimney, a fire would have rendered it uninhabitable.

It appeared strange that those people, who loved to be at their ease, should sleep on a sort of trellis formed of sticks, two inches asunder. This was but a hard bed, notwithstanding the mats with which it was covered; but it afforded them the pleasure of the fresh air, which circulated freely in the interstices. It was elevated about eighteen inches above the ground, and below it was deposited a part of the household utensils,
utensils, consisting of three earthen pots of their own manufacture, some square bottles, which they had bought from the Europeans, and spoons which they had formed of the large shells common at Amboyna. Among those shells we recognized different species of the nautilus, many pearl-oysters, and also a kind known by the name of pinna rudis.

We observed besides, under the bed, a pick-axe and a large knife, in the form of a butcher's chopping-knife, called pistiu in the Malayan language. They had both those instruments from the Europeans.

As the temperature of the climate renders clothing unnecessary, their wardrobe contains nothing but what is strictly requisite to conceal the parts which decency forbids them to expose to view.

A pair of drawers, which does not reach lower than the middle of the thigh, or a bit of blue stuff tied round the loins, is the only clothing of the men who are employed in agriculture.

The dress of the women is naturally more expensive. They wear a kind of shift of the same stuff which descends to the middle of the leg, and is fastened round the loins with a girdle.

Our presents had excited their gratitude. The girl, having disappeared for a few minutes, returned
turned to offer us some odoriferous flowers; but as she wanted a string to form them into nose-gays, we had an opportunity of observing the readiness, with which those natives obtain a fibrous substance from the bastard aloe, called *agave vivipara*. The master of the house ran out and cut a leaf of that plant, and placing it upon his thigh, in order to split it with his large knife, and to free it from the pith, he soon produced a parcel of filaments, as long as the leaf, and as strong as those of our best hemp.

In our return, we met a slave whose decrepitude excited our curiosity. But it was to no purpose that we asked him, how old he was; for he could not satisfy us in that particular, as he knew nothing about it. It appeared strange to us, that a man should not have counted the number of years which he had passed in slavery!!

28th. This day I took an airing in the road, in a canoe with a double outrigger. Some sportsmen, taking the opportunity of this rapid conveyance to the eastward of the town, joined our party. We followed the right bank of the road, at a little distance from the shore. The water was so limpid as to disclose to our view, at the depth of three and four fathoms, the bottom composed of white coral, on which we could perfectly distinguish the species of ray, or thornback, remarkable.
able for its large circular spots of azure blue, as well as several other fishes exhibiting the most brilliant colours. There was a Papow on board, who had the address to catch several of them. Standing in the fore part of the canoe, he darted his spear, consisting of a bamboo pointed with iron, at the fish which was his object. The spear, from its lightness, ascended nearly in the same direction; so that though it had gone to a great depth, our Papow seldom failed to catch it, notwithstanding the way we were making.

When we were about 1,500 toises from the town, we admired the charming situation of the Governor's country house, at the foot of a chain of mountains, which terminate in a gentle declivity near the road.

A cottage of the natives, half way up this slope, encircled with clove and banana trees, added greatly to the beauty of this rural scene.

The depth diminished so much that, though our canoe scarcely drew more than eight inches of water, we were obliged to keep off shore, in order to avoid the rocks.

At the distance of more than 5,100 toises from the town, after passing some fishing boats, we landed on the right bank near a cottage, the owner of which furnished us with as many coconuts as we wished. Some sailors who were with us,
us, finding their liquor too sweet, mixed with it as much brandy as suited their taste, and we had the satisfaction of observing, that this potation was by no means disagreeable to our host.

After this breakfast, each of us entered on the business which had brought him thither; and we agreed to rendezvous at the place where we landed.

For my own part, I resolved to make an attempt on the mountains to the eastward.

I followed a path very much frequented by the natives, leaving it, however, and penetrating into the forest at every clear interval, which facilitated my entrance.

In several places the earth had rushed down, and exposed to view the hard grey stone, which formed the bases of those mountains. I had also observed the same kind of stone on the shore of the road-stead, along which we had just been walking.

Among the different shrubs which grew on the low lands, I obtained a very fine mixed species of the genus conyza, remarkable for having three principal nerves on each leaf, as in several species of the melastoma. It had also the general appearance of the plants of that genus, to which I should have been inclined to refer it, if I had not seen the flower.
The phalanger of Buffon (*didelphis orientalis*, Linn.) inhabited the foot of those mountains. I had a near view of several of them as they rapidly flew past me.

When I had gained about 150 toises of perpendicular elevation, I remarked a total change in the nature of the soil. Beds of calcareous stones, perfectly pure and white, crowned those high grounds, which now presented a great extent of very level surface.

There I saw a garden surrounded with a paling of bamboo, and very well cultivated, although at a great distance from any habitation. There appeared to be no possible means of watering it; yet the vegetation was very vigorous, owing to the humidity of the atmosphere in this elevated situation. Large fields were allotted to the culture of the species of pimento, called *capsicum grossum*, of which the inhabitants of the island consume a great quantity.

A little shed on the west side of the garden afforded us its shelter, and in it my thirsty guides found a supply of good water in long bamboos, which appeared to be designed for some other purpose. This water had been brought from the foot of the mountain, and we made as free with it as if it had been our own.

Although it was very hot, they thought proper
to kindle a fire. I was far from foreseeing the intention of those people, who, like the greatest savages, took pleasure in seeing the flames devour the dry plants in the clear spots. Presently one of my guides had the imprudence to set fire to a large bush. The air was then very calm; but a light breeze soon after springing up, drove the flames towards the garden, and I had the mortification to see a part of its paling consumed, without being able to stop the progress of the conflagration.

The manner in which those natives produce fire, well deserves to be described. Their method is not so expeditious as a good flint and steel; but they have the advantage of finding their material almost everywhere, a piece of bamboo being sufficient.

The following is the way in which they perform it. They split into two equal parts, a bit of bamboo eighteen inches in length. In one of the parts they form a longitudinal slit, and cut the other tapering to about an inch and a half in breadth. They put scrapings of the same wood under the slit, and in the concavity of the largest piece, which they place horizontally, with the convex side uppermost; then introducing the other piece into the middle of the slit, where there is a notch to receive it, and supporting it strongly, they give it
of the motion of a saw, and in less than a minute the scrapings catch fire.

The *canarium commune* overtopped all the trees in those elevated forests. I was surprised to see the calcareous rock naked in the midst of those extensive woods, the rotten remains of the trees not having yet covered them with a stratum of vegetative mould; and the rents contained nothing but stones, which time had broken asunder. Those stones resembled vast plates, of the same nature with those which I had many times observed in our Alps. Their numerous cavities seemed to indicate, that the most soluble parts of them had been washed away by the rain.

Having been driven from this spot by the smoke of the spreading conflagration, I proceeded towards the south-west, where I found, in the midst of the woods, many individuals of the *nann* of the Malays (*cynomctra cauliflora*, Linn.), which they raise in their gardens, on account of its fruit, the taste of which approaches to that of a good apple, slightly acid.

Having followed the banks of a rivulet, which discharged its waters near the place where we landed, curiosity induced me to visit a cottage situated near the sea. There I found an old man, who, contrary to the custom of those islanders, wore a long beard. He was boiling, in a large earthen
earthen vessel, some shell fish, which he had collected at low water, among the mangrove trees near his habitation. The respectable old man, without being surprized at my visit, immediately invited me to partake of his repast. A long splinter of a fago-tree limb was put into my hand, and I imitated my host in using it to dig out of the shell the fish, which were set before me on a banana-leaf.

The old man's wife soon after joined us, and I should have been extremely surprized at the rodigious inequality of their ages, if I had not learned that those islanders place their happiness in marrying very young girls. Their physiognomy becomes singularly animated whenever they speak of a young woman (in Malay, paranpouang monda), and, on the other hand, it is truly diverting to observe the frightful grimace which discomposes their whole countenance, when they speak of an old woman, (paranpouang toua).

I endeavoured to make the old man sensible of the extreme insalubrity of his situation so near to mangrove-trees; where the stagnant waters might affect him with violent disorders. But I could not prevail on him to consent to remove his cottage to a more elevated spot. All the answer which he made was, That the sea afforded him his livelihood.

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The palm-tree, named *nipa*, grew in those salt marshes. Its leaves are of great use in covering the cottages.

The hunters had already arrived at the place of rendezvous. We were all extremely thirsty; and we expected to procure cocoa-nuts, with as much facility as when we came to the same place in the morning. But the owner of the garden was absent, and there was no one in the cottage but his wife. It was in vain that we endeavoured to prevail upon her to sell us some cocoa-nuts, for which we would have made one of our guides climb the trees. She gave us to understand that she had not liberty to sell them to us. Besides, not one of our guides would have dared to climb the trees in the absence of the owner, and, if he had not come home, we should have had no cocoa-nuts; for he had placed among the trees a *maté*, for which our guides showed as much respect as for the one I have already mentioned. This one was also in the form of a little shed, the roof of which might be about twenty-six inches in height, covered with the leaves of the nipa palm, and supported by four posts, about eighteen inches distant from each other.

From the middle of the roof was suspended by a rope a piece of bamboo, about eight inches in length, and covered with half a cocoa-nut. In this
this bamboo were contained, as I was told, some things which had been the property of the person who was buried under the little shed. I complied with their request not to touch them; for I did not wish to treat their usages with disrespect.

When it was near sun-set, we went on board, in order to return to the town. Our Papow gave us fresh proofs of his dexterity, by transfixed, while we were making considerable way, different kinds of fish.

It was dark when we arrived at the town.

I was employed for most of the 29th, in preparing and describing the objects which I had collected on the preceding day.

One of the fruits of my excursion was the beautiful lizard, called *lacerta Amboinensis*. I observed that it changed its colour like the chameleon: it was most commonly green, but it frequently assumed a deep brown. This animal is easily taken; for it allows one to approach it near enough to catch it by the extremity of the tail, which is of an extraordinary length.

In the evening I repaired to the beach, in order to examine the marine productions thrown on shore by the waters, and there I remained till night. I saw many fishermen in their canoes near the beach, and who, taking advantage of the dark-
nes, decoyed the fish by torches held near the surface of the water. Pieces of wood, supported by the levers of the double outrigger of the canoe produced a very clear flame. One of the fishermen attended those torches, and carefully diffused their light, which it was easy for him to do, by only letting bits of the flaming wood fall into the water; while others were employed in encircling with their nets, the fishes collected from afar by this brilliant light: we did not hesitate to conclude, from what we observed, that those islanders were very skilful fishermen.

Very early in the morning of the 30th, we set out to survey the other shore of the road. It was necessary for us to go about 3,000 toises by water, and this transit was dangerous in a canoe, whose outriggers were not sufficiently strong to preserve the equilibrium of the vessel, when loaded with so great a weight. We were anxious to visit those places which we had not yet viewed; and we went on board without knowing all the danger of our enterprise. But presently we saw one of the outriggers dip under the water, when one of us leaned a little, and without the greatest care we should have been overthrown. If this accident had happened, towards the middle of the road, it would have been difficult, on account of the rapidity of the current, even for the most ex-
pert swimmer of our number, to have reached the shore. The danger diminished as we approached the place where we wished to land. But we were much astonished at the imprudence of one of the people belonging to the Esperance, who, although he could not swim, and was certain of being drowned, if we had been overset, several times deranged the equilibrium of our little vessel. At last, however, we got on shore.

The coast was there covered with the shrub called secovola lobelia. It delights in such a situation; and I also found it in New Ireland.

At high water, the sea washed the root of the beautiful tree whose denomination, heritiera, recalled the name of one of our most able botanists, Citizen l’Heritier.

In proceeding westward I found, among the shells upon the beach, some lavas very porous, but yet too heavy to swim in water. As I had not observed, in the inland parts of the island, any stones which had been subjected to the action of fire, it seems reasonable to suppose, that those had been brought into their present situation, by the waters, agitated by some volcanic eruption; for earthquakes are frequent in those parts, and the inhabitants still mention with dread, one, among others, which, twelve years before our arrival in their island, had been attended with great
devastation: the houses could not be inhabited for several days, and some of them were even overthrown.

In the island of Banda, a little to the eastward of Amboyna, there is an open volcano.

At Karuku a little island, also to the eastward of Amboyna, and at the distance of about 5,100 toises from it, are hot springs which, according to the accounts of several Europeans, will completely coagulate an egg in five minutes. The hot vapour which issues from those waters does not injure the trees which are continually bathed in it; but on the contrary they exhibit proofs of a vigorous vegetation.

This little island of Karuku is principally allotted to the culture of the clove-tree.

I found, in the gardens of the natives some nutmeg-trees, the largest of which did not exceed twenty-two feet in height, the trunk having been about three inches in diameter. They already bore a great quantity of fruit. The nutmeg-tree delights in the shade of large trees; and these enjoyed the shelter of the canarium commune. The same tree affords them its shade, in the island of Banda, which is chiefly applied to their culture by the Dutch.

The Council of the Dutch East India Company, which is established at Batavia, finding the produce
produce of the nutmeg plantations at Banda sufficient for exportation, and wishing, besides, to prevent all contraband trade in that precious commodity, ordered, some years before we arrived in Amboyna, all the nutmeg-trees in that island to be destroyed. This order was executed, and very few of the devoted trees escaped destruction; but a hurricane which happened the same year, deranged all their avaricious calculations. It completed in Banda, the devastation which the Council had executed at Amboyna.

The same Council afterwards issued orders to endeavour to repair the havoc which they had committed at Amboyna. They now wished to re-establish the culture of the nutmeg there. Hence those which we saw near the road, are still very young. Yet we observed several in the gardens of the town, and even opposite to the house of the Commander of the place, which were much larger, having escaped the destructive orders issued by the government at Batavia.

We found the beautiful laurel, called laurus culilaban, which yields, by distillation, an aromatic oil very much in request. The natives know how to extract this precious oil, and make it an article of commerce.

The largest clove trees which we saw in this excursion, were not above twenty-two feet in height;
height; and their trunks not above eight inches in thickness. The natives are obliged to deliver their produce to the Dutch Company, for about the hundred and fiftieth part of the price for which it is sold in Europe. We saw great quantities of the cloves which the natives had spread on mats, under their sheds, in order to be properly dried before being delivered to the agents of the Company. Those people took special care not to expose them to the rays of the sun, which would have dissipated part of the essential oil of that excellent aromatic.

Being upon the beach, I heard the sound of wind instruments, the harmony of which was sometimes very just, and blended with dissonances by no means displeasing. Those fine and harmonious sounds seemed to come from such a distance, as to make me believe, for some time, that the natives were entertaining themselves with their music, on the other side of the road, and near 5,000 toises from the place where I stood. My ear was much deceived as to the distance; for I was not fifty toises from the instrument. It was a bamboo, at least sixty feet in height, fixed in a vertical position, close to the sea. Between every joint was a hole near an inch and 2-10ths long, and somewhat above half an inch broad. These holes formed so many mouths, which, by the action
tion of the wind emitted agreeable and varied sounds. As the joints of this long bamboo were very numerous, care had been taken to pierce it in different directions; so that from whatever point the wind blew, it always met with some holes. The sound of this instrument more nearly resembles that of the harmonica, than any other to which I can compare it.

The experience which we had had of our canoe, in traversing the road, had given us the hint to prepare it better for our return. Accordingly the outriggers were strengthened, and we proceeded towards the town, without any apprehensions of being drowned.

October 2d. Some hours of this day were employed in visiting the Governor's cabinet of natural history, in which I admired a numerous collection of fine papilios, in perfect preservation. I observed many duplicates of very rare ones, and a large box entirely filled with the beautiful species called *papilio agamemnon*. This cabinet also contained a great variety of shells, among which were above twenty *scalata* (*turbo scalaris*, Linn.)

The Secretary of the Council also possessed great collections of this kind. A taste for procuring objects of natural history is very much diffused among the Dutch, who find it a powerful mean of obtaining them. preferment, when they know how
how to address their acquisitions, properly, to persons possessing influence with the Council at Batavia, or in Europe.

Captain Huon obtained many rare shells from the Secretary of the Council, who gave him, among others, one of the most precious and scarce shells, the glazed or glassy nautilus, (la nautilë vitrée) which he has made over by will to the museum of natural history in Paris.

3d. The next day we proceeded towards the entrance of the road, following the shore in the canoe which we commonly made use of.

At the same time, the tide rising with great force, produced a rapid current, particularly towards the middle of the road. Notwithstanding the skill of our paddlers, we would have gained nothing by struggling against such an obstacle. As its force was much diminished towards the shore, we kept as near it as we could, a manoeuvre which was much facilitated by the shallowness of our vessel.

I was at some pains in observing the great diminution of the current towards the shore; but I did not expect to find it so considerable. The principal cause appeared to me to be the proximity of the land, which detained the water by a kind of adhesion; whereas, at a greater distance, the sea being much deeper, its upper strata, which
which form the current, glide with facility upon
the lower, and thus the friction is extremely di-
minished.

While there is a very rapid current towards
the middle of the road, there is frequently none
close to the shore; and sometimes one in a con-
trary direction, which ought to be ascribed to
the different points of land, protruding into the
sea.

In a deep part, bordered by a sandy bottom,
we observed some fishing places; formed by a
paling of bamboos so close together, that the fish
could not escape through it. The entrance was
dry at low water; so that the fishes which were
thus encircled at high water could not get out
when the tide had a little subsided. Besides, the
fishes, which commonly prefer the deepest water,
advanced towards the farther part of the inclo-
sure, where the depth, even at low water, was
still about three feet. This reservoir imprisoned
those fishes which were most easily decoyed, and
man was not the only fisher who frequented it;
for we observed there several species of herons.
Our presence drove some of them away, but
others still remained, with their long legs deeply
immersed in the water, patiently waiting till the
fishes came within their reach. The fishing mar-
tens are also frequent attendants at those inclo-
sures;
fures; some of them were perched upon the bamboos, from whence we saw them dart, from time to time, upon the fishes, which afforded them an abundant supply of food.

We then hastened to a point of land sufficiently advanced into the sea, to induce the Dutch to build a redoubt upon it. But they had abandoned this fortification, as well as another which we observed on the opposite shore nearer to the entrance of the road. We went on board at a small distance from the former redoubt, and steered for the country-house of M. Hoffman, chief surgeon of the hospital, with whom we had formed an acquaintance.

After making a hasty breakfast, at which spices were served up with a profusion, which made us remember we were in the Moluccas, I went to view the vicinity of this habitation, where a marshy situation afforded me, among a great number of other plants, the beautiful species of acanthus, with leaves like those of holly (*acanthus ilicifolius*, Linn.), and also its variety, with whole leaves.

We then returned towards the redoubt, the form of which, on the side next the sea, is semicircular, being not more than eighty-one toises in length and fifty-one in breadth. The walls are above six feet in height, above three in thickness.
on the land side, and fix towards the road, with embrasures to receive forty pieces of cannon.

While I was on shore; Citizen Riche set our canoe-men a diving, and they frequently brought him up very valuable marine productions. The road of Amboyna abounds with beautiful shells, which are seldom met with elsewhere; the most delicate being protected, in its numerous deep recesses, from the motion of the waters, are often found in perfect preservation.

Our Papow proved to be not only the best diver, but the merriest of all our guides. His humour, which was truly laughable, very much diverted his comrades. He acted several scenes of comedy, which he told us was a favourite amusement among his countrymen. One of those which he repeated the ofteneft, because it produced general applause, represented a woman ready to lye in. He entertained us, when we were taking some refreshment, with the finest part of the piece, and he seemed to do great justice to the character.

Some of the inhabitants of the South Sea Islands act similar comedies. Captain Cook, in his second voyage, relates, that at the Society Islands, he was present at such an exhibition.

I took the opportunity, while our Papow was in so good a humour, to ask him, What method
the people of his country took to separate the umbilical cord? He told me, that they burnt it, above an inch from the body, a mode of operation which has been practised by some surgeons, and that, for this purpose, the Papows employed a well kindled torch.

We re-embarked, in order to proceed farther, always following the same bank. Some of the *erythrina coralloidendron* made themselves remarkable by their fine bright red flowers.

On the steep sides of the hard grey rocks, which formed the neighbouring shore, grew some trees of the *vacoua pandanus odoratissima*, which overhanging the sea, gave those places a very picturesque appearance. The large spherical fruit, depending from the extremities of their branches, increased their natural inclination towards the water, the surface of which was always covered with ripe fruit.

These delightful scenes gave us reason to be pleased with our excursion. Having passed some time there, we re-embarked, in order to advance still nearer to the entrance of the road.

A charming situation, in the vicinity of a cottage occupied by a native, induced us to go on shore. The master of the cottage was absent; but we found in this peaceful habitation, a young woman, encircled by her children, whom she was amusing,
amusing, with a very simple stringed instrument, which the accompanied with her agreeable voice. It was formed of a joint of bamboo, about six inches in length, covered at one end with a piece of parchment, like a drum. Three strings of bark, each of them stretched by a bridge, were fixed to the two extremities of this cylinder, which was placed upon the knees. The two most distant chords sounded an octave, and the intermediate one a fifth with the farthest chord. A circle at each extremity, about 4-10ths of an inch in height, supported other strings, intended to render the instrument more sonorous. These strings were more or less stretched, by a slider, which connected two and two together, and which could be moved at pleasure, through almost whole length, as in our drums. A little slip of bamboo bark, put the chords supported by the bridges into vibration. The accompaniment, although monotonous, seemed infinitely pleasing to our guides, whose ears were accustomed to this species of music.

This habitation was encircled with nutmeg-trees, not far advanced in growth, but already well proportioned; although at Amboyna, their culture is not generally relished. The vicinity formed a beautiful orchard, in which the brilliant flowers of the eugenia malaccensis attracted our admiration;
miration; and there we also partook of the agreeably acid fruit of the *avrrhoa carambola*.

The shore was embellished, almost to the edge of the water, by a large plantation of the species of tree called *aeschynomene grandiflora*, which bears the largest flower of all the leguminous plants, and which is commonly of a beautiful white, but also sometimes red. The natives frequently eat it boiled, and in some cases they use it raw, by way of a salad.

The bark of this tree yields a bitter extract, which they administer as a tonic in fevers.

The day was drawing to a close, and the current set against us. We were therefore obliged to keep close in shore, and it was night before we got back to the town.

4th. As soon as I had disposed, in the most convenient manner, the produce of my last excursions, I went towards the south-east, to a little distance from the town, and I still found plants to add to my collections. At my return, I saw a white negro, of Papow origin. His hair was white, and his skin fair, and marked in some places with red, like those of the red-haired Europeans; but his height was not weak, as it commonly is in other Albinoses.

This young Papow, was a slave to a Dutchman, and had been but a short time at Amboyna. Where
When I first cast my eyes on him, he was playing on an instrument, which I was surprized to see among those people: it was a jew's harp, cut out of the hardest part of a bamboo, but was not quite so large as the iron ones which we use. As the tongue of it could not be bent, to make it vibrate with the fingers, a little string tied to one of the extremities of the instrument communicated the impulse necessary to agitate the tongue, which then gave the same sound as the iron blades of our jew's harps. I was told that this instrument was very agreeable to the Papows.

5th. We had, for some days, formed the design of visiting the country house belonging to the Commander of the place, situated near the farthest end of the road; and his son favoured us with his company.

We set off before day-break; and it was scarcely five o'clock, before we were seated in our canoes.

We soon arrived under a shed, surrounded with trees, which afforded a salutary protection from the scorching heat; and they were by no means a vain decoration to this delightful retreat, for most of them bore excellent fruit. Among the different anonas which were offered to us, the best was of the species known by the name of \textit{anona muricata}.

In a little time, we re-embarked, and we were near
near 5,000 toises from the town, when we passed a point of land, beyond which the road extends itself greatly towards the north.

A fresh breeze from the south-east impeded our progress, and drove the waves against our flight vessel, which proved very inconvenient.

At the same time, a large boat, loaded with water for the Esperance, came out of the creek, into which runs a river which affords that article to the shipping. They bring the water from that great distance, because it is much more easily obtained there than near the town, where, however, the water is also very good.

The current occasioned by the return of the tide opposed our course; but our boatmen redoubled their efforts, and we at last reached the end of that long branch of the road.

We walked for some time under the shade of nutmeg trees, which, as well as the young plants, were much more numerous there, than in any other part of the country which we had hitherto visited.

The Commander's son was here in the midst of his relations. We were near the house of one of his cousins, who was a native of the island; and there we behoved to dine after their manner. Fish, bread, fago, rice, and some fruits, formed our repast. As we were not served with spoons,
we were obliged to imitate our host by taking up the victuals with our fingers; but we did not eat the less on that account, nor with a worse appetite.

All of us reconciled ourselves very well to bread made of fago; the fish was strongly seasoned with pimento, but some glasses of the water of the fago-tree diminished the violence of its effects.

While we sat at dinner, we were entertained with music. A kind of spinet was accompanied by a man's voice; a drum served as a base, and a tamtam as a counter-base.

After dinner our host carried us in his canoe about 500 toises towards the east.

There we saw a man employed in preparing a fago-tree. This tree, which was about eighteen inches in thickness, had been cut down a little time before. It was already opened for a part of its length, the whole of which did not exceed forty feet, and it had afforded a great deal of fago. This palm, like the other trees of this genus, preserving nearly the same diameter for its whole length, yields nearly as much fago towards the top of the trunk as towards the root. (Fig. A. Plate xlii, is an exact figure of a young fago tree.) The external part of its trunk is formed of a very hard ligneous shell or crust, four lines and a half
in thickness. The trunk is a large cylinder filled with pith, which is interspersed, through the whole length of the trunk, with ligneous fibres, about the thirteen-thousandth part of an inch in thickness, and often above two lines distant from each other.

They pound the fago after taking it out of the tree; they then put it into bags made of a sort of canvas, furnished by the bases of the limbs of the cocoa-nut tree. On those bags they throw, from time to time, pure water, which carries off the fæculæ (or sediment), while this kind of scarf, or stranger, partly retains the woody fibres.

The water replenished with the fæculæ is received into troughs, about three feet in length, formed of the lower part of the limbs of the fago tree. On the end of each trough they fasten a stranger, to retain that part of the fæculæ which has subsided, and the ligneous fibres which have escaped the first washing, swim on the water.

This last stranger required no preparation: it was of the same nature with the other; both being a fibrous contexture, which differs from our stuffs in this, that its component fibres are simply applied, and run parallel to each other throughout the whole length; but some short lateral fibres, which traverse the longitudinal ones, bind them
them together, and form a firm contexture of the whole.*

To clear the sacculae of the sago of the ligneous fibres which still remain, after having been washed in the sacks or bags, it is again put into troughs, commonly four in number, and arranged; one higher than the other; so that what is not deposited in the first, may be received into the second, and so on.

The texture of the sago tree well deserves examination, and therefore I dissected the trunk of one, in which I observed the conformation of parts common to many other species of palms, as Citizen Desfontaines has so well described, in a memoir on plants with seminal leaves.

6th and 7th. I could not go any great distance from the town on the two following days, on account of the assiduous care necessary to preserve my collections. An intelligent assistant to each naturalist, would have saved that precious time,

* The reader will observe, that the kind of saccrae here described, is merely a natural production, which is not over plainly intimated by the Author. They are commonly called by the English cocoa-nut strainers. They resemble fragments of very coarse brown linen, but are not so pliable. If I rightly remember, they are from two to three feet in length, and where broadest, which is about the middle, from a foot to about fifteen inches in breadth.—Translator.
which should have been employed to a much better purpose.

8th. But this day, light had scarcely appeared, when we were upon the road. In crossing it we directed our course towards its entrance, and very nearly approached a redoubt, about 5,000 toises distant from the town. In that place, the road was at least 3,500 toises in breadth; so that an enemy had nothing more to fear from this battery, than from the first which I have described. This is constructed exactly in the same manner; but it is situated nearer to the entrance of the road.

Near this spot was a hamlet, composed of some cottages, the neatness of which indicated the easy circumstances of the inhabitants. The sea supplied them copiously with food, and most of the houses were encircled with well cultivated gardens.

Some of those islanders raised fowls, and disposed of them at the market in the town. We accepted the invitation of one of those honest people, who insisted on treating us with new laid eggs.

Most of the gardens were surrounded with shrubs, among which we distinguished the *Jatropha curcas*, which being planted close together,
formed a good fence. Its seeds have a very agreeable taste, resembling that of the hazle-nut. The natives apprized us, that, when eaten even in a small quantity, they induced great drowsiness. They did not know that the narcotic quality resides in the part, known to the botanists by the name of the embryo; and I had the pleasure of showing them, that, when this part is removed, the kernel may be eaten, without any inconvenience.

Advancing farther into the country, we observed some individuals of the arnotto, *bixa orellana*, which were cultivated with little care. When we had reached the entrance of the road, we saw at a distance several large canoes striving to make it, and some others which had nearly gained that object.

Our little canoe had arrived at the place of rendezvous, when the boisterous tide raised waves, which did not a little embarrass the steersman; the sea being at the same time very much broken. It was, in short, absolutely necessary for us to wait till it was calmed, before we could go on board, in order to proceed to the other side of the road, which was the most distant excursion we had hitherto made.

For some time we kept along the shore, in order that we might the more easily oppose the tide,
tide, and compensate the lee-way, which was occasioned by the force of the current. Near the extremity of the road, a great number of dolphins (delphinus delphis), darting rapidly through the water, passed us at so small a distance, as to make such of us as could not swim, seriously afraid that we should be overset.

We immediately landed near a little habitation, situated near one of the finest parts of the island.

The fishermen on the other side had provided us abundantly with their article, which one of our number had a mind to dress, after the fashion of the inhabitants of the South Sea Islands, who use the milk of the cocoa-nut as their only sauce. To this dish, so much praised by Captain Cook, he made an addition of pimento. We had the satisfaction to observe, that this composition was extremely agreeable to our hosts, to whom it was unknown; and they cheerfully furnished our guides with every thing necessary to succeed compleatly in preparing it. He who gave directions for the composition of this excellent mess, acquired among the inhabitants the reputation of being a very good cook; and we were much diverted by their perpetually asking us, if he was not the chief cook on board of our ship.

In the vicinity of this cottage, I admired the beauties
beauties of the shrub, known by the name of\textit{abroma augusta}. The \textit{hedyuarum umbellatum} made a distinguished figure, amidst several new species of the same genus. The nutmeg-trees invited to this spot pigeons, of the species \textit{columba alba}, Linn. The crops of those which we killed were full of nutmegs.

The excessive perspiration, occasioned by the heat of the climate, often induce cutaneous diseases. The bodies of five of our hosts were covered with dry tetter, the scales of which falling off, were immediately succeeded by fresh ones, and appeared the more conspicuous, on account of the colour being a contrast to the copper tint of their skins. This malady frequently invades every part of the body. We also saw some children, who were affected by another cutaneous disorder, from which they did not appear to suffer any pain: almost the whole of their bodies were covered with large warts, not much more than an inch distant from each other.

I seldom visited a cottage at Amboyna, in which I did not find instruments of music; and I met with one here, which I never saw anywhere else. It was a sort of hautboy, the lower extremity of which terminated in two diverging branches pierced with holes in the same order in each, and thus forming two flutes, both sounding the
the same notes. The natives love to play in unison, and apply one hand to each branch.

I returned to the town, in a dark night, when the water in the road, presented to my view collections of little bodies, which illuminated large portions of the surface. The water which I took up in the most luminous parts, left on the filter, through which they were passed, little molecules which differed in no respect from those which I had already examined, before our arrival at the Cape of Good Hope, and in other places, at a great distance from land. We made the land near the town, at the moment of high water, and were obliged to wade, more than 150 toises, through the water, which was so shallow as not to admit our canoes to come near enough the shore to land us. The fishermen were kindling their fires to decoy the fish, which the tide had brought thither in such numbers, that we saw their nets filled with them.

9th and 10th. The two next days were employed in viewing the vicinity of the town. I was surprised to find in so small an island, so many different species of vegetables; but doubtless its proximity to Ceram had enriched it with part of the plants of that extensive island.

In the evening, the Governor gave an entertainment, this having been the anniversary of one of
of his sons, who was in Europe finishing his education. All the naturalists were invited, and we made our appearance at the Government-house, an hour after sun-set. As the coolness of the atmosphere was not then inconsistent with dancing, the ball had already begun, and several country dances were formed in the great saloon, in which the Governor received us, on our first visit along with General Dentrecasteaux.

This saloon was a kind of gallery, which was decorated with some engravings, and a few very indifferent pictures, placed at a great distance from each other. The walls were only plastered with some coats of lime; although it would not have been difficult to have adorned them with fine wainscoting at a small expense; as the island produces several kinds of wood proper for inlaid work.*

* The number of scorpions and solopendræ (or forty-legs) before observed to have been brought on board with the wood taken in at Carteret harbour, might have suggested to the Author, that wainscoting only serves as an asylum to those and other vile insects, which swarm in most tropical countries. For the same reason, a great number of prints and pictures are inconvenient, and it is scarcely possible to preserve paper from the attacks and the excrements of insects. Plain painting and white-washing are almost the only decorations, which the insides of houses conveniently admit in those climates; as the Author would have discovered, if he had continued to reside in them.—Translator.
Almost all the daughters of the Company's servants were at the ball. The heat of the clime certainly forbade all violent motion; yet we were surprised to see the young ladies dance in a manner so very unfavourable to the display of their graces. They contented themselves with walking slowly, scarcely observing the figures, and their supine air formed a strong contrast with the extreme quickness, which the composer had given to the country dances which they performed.

The orchestra consisted of four negroes, who played on the violin, and another who performed on the bass.

The ball was succeeded by a splendid supper, which was served up in the same apartment.

From the small number present at half an hour past nine, I supposed that the party at supper would not be numerous; but the greater part of the guests, not caring for the dance, did not come till about ten at night.

Gaiety prevailed at this entertainment, which lasted a good part of the night; and the dancing was resumed, and continued till sun-rise.

We were surprised that we had not the company of M. Strampfer, one of the ministers of the Protestant persuasion, who had received us so kindly; but we soon learned that he had lately incurred the displeasure of the Governor, because forsooth,
forsooth, after having diligently attended to the education of that gentleman's children, for several years, the poor man had requested payment! It might well be supposed, that the boasted honour of having educated the children of the Governor, was a compensation not quite sufficient for a man who had a family of his own; but he could obtain nothing more!!

11th. I employed a part of this day, in surveying the beauties of several gardens, and among the plants which adorned them, I observed the Chinese box-tree, murraya exotica, which formed very fine avenues, also the mixed carmanthine, justitia variegata, and the variegated turnsole, croton variegatum, so remarkable for the beauty of their flowers and their foliage.

The lawsonia inermis, called by the natives, honungia laca, is employed as on the continent of Asia, to stain certain parts of the body, and particularly the extremities of the fingers. The Chinese make the most use of this article.

Soon afterwards I came to a cottage, surrounded with a great number of cocoa-nuts, suspended from the leaves of the roof, and from the adjoining trees. The owner of this cabin, pointing to his numerous family, told me that he was preparing to make a large plantation of cocoa-nut trees. Most of those nuts had germinated,
minated, and he said that the plants must be about eighteen inches in height, before they were committed to the earth, assuring me that, but for this precaution, many of them would rot, without sprouting up.

As the moment of our departure from Ambroya approached, I sent on board the collections, which I had made in that charming island, and on the 13th I followed them in person.

14th. The express orders, which had been issued the evening before, for every one belonging to the expedition to repair on board the frigates, made us suppose that every thing was ready for our departure, and that nothing but contrary winds could prevent us from failing. A part, however, of the water, which had been consumed while we lay at anchor, still remained to be replaced; and, as this business was not finished till the afternoon, we could not take our departure till the next day.

The people belonging to the ships were very well satisfied with this relaxation. They had enjoyed as much leisures as they could desire, and slaves had even been employed to bring on board our complement of wood and water, in the large shallops which they call yacon.

Our ship had been caulked, and having been surveyed,
surveyed with scrupulous attention, was found to be generally in good condition.

The island of Amboyna, called Ambon by the natives, was then the Dutch government in India, which ranked next to the general one of Batavia.

The latitude of the place of the observatory, towards the western extremity of the town, was found to be 3° 41' 40" S. and its longitude 126° 9' E.

The variation of the compass there, was 1° 13' 20" W.

A flat dipping needle gave 3° of inclination.

Although the heat was oppressive, the thermometer varied regularly every day, only from 22° to 25°.

The barometer kept constantly at 28 inches two lines, its variation not exceeding one line.

At the place where we lay at anchor, the time of high water, at the full and change of the moon, was at half an hour past twelve at noon, and the water rose about eight feet. The tides take place twice a day.

The road of Amboyna forms a channel about 10,200 toises in length, and its mean breadth is about 3,400 toises. In many places, towards the fides, there is good anchorage, notwithstanding that the bottom, in some situations, is coral.
About the middle, the depth is too great for anchoring.

The fort, which is called Victory Fort, is built with bricks, and the Governor and some of the members of the council reside in it. It was then falling into ruin, and from every gun which was fired, it sustained some damage.

The garrison was composed of about two hundred men; the greater part of them natives of the island; the rest were European soldiers in the Company's service, and a weak detachment of the regiment of Wurtemberg.

Most of the European soldiers were tormented with the desire of revisiting their native country; but none of them had yet seen the happy moment of return. Some who had been amused with this vain hope, for many years, were a source of dejection to the rest.

The small number of soldiers who survive any long residence in India, renders those who have passed some years there, still more valuable; and hence the Dutch East India Company seldom fulfil their promise to allow the men, whose time is expired, to return to Europe. Every method is tried, in order to induce them to make a fresh engagement; and they who carefully avoid every stipulation, which can tend to prolong their confinement in the island, do not the sooner obtain
tain their liberty. I have met some of those unhappy men who had been detained in the island more than twenty years; although, in conformity with the terms of their agreement, they ought to have been then free.

The Island of Amboyna is divided into several districts, which in many places, form so many villages, called nygri. The command of each nygri is conferred on a native, who is decorated with the title of orancaye. This man, to whom the police of his little canton is entrusted, is himself altogether subordinate to the Dutch government, to whom all weighty cases are referred. The Dutch commonly choose for orancayes, natives who profess the Protestant religion, preferring the ancient chiefs, or their nearest relations, and above all those who are richest.

Each of those orancayes has the government of about one hundred natives. The Dutch Company, when they invest them with their authority, present them with a silver-hilted sword. Those chiefs are cloathed in the European style, all in black, and they wear three-cocked hats, very much pointed and depressed. Of this dress of ceremony, shoes form a part, which they wear when they are obliged to appear in public, or in the presence of their Dutch superiors.

The title orancaye is compounded of two Malay.
layan words *oran kaya*, the literal translation of which is, a rich man.

The dignity of orancaye, is by no means an empty title: it gives those petty chiefs the means of making their fortune, which they seldom fail to do, although very vexatiously to those who are subjected to them; for when raising contributions on the poor Amboynians, on account of the agents of the Company, they take care not to neglect their own interests. It nevertheless happens sometimes, that their fortunes decline faster than they increased, when the agents of the Company find the means of turning the avarice of the orancayes to their own advantage.

The inhabitants of Amboyna speak the Malay language, which is very soft. Its analogy with the language spoken in the South Sea Islands, has induced me to present the reader, at the end of the second volume, with a very copious vocabulary, which I collected at Amboyna and in the island of Java, where I remained a long time, at the close of this expedition.

The use of betel has been established among those people, time immemorial. They take some young leaves of the pepper tree called *piper frifboa*, in Malay *firi*, and having covered them with a little very fine lime, made of burnt shells, and newly flaked, they chew them with the arec-nut.
nut. Some of them always continue this amusement, except when they are eating or sleeping. I was much surprised that, notwithstanding their incessant use of lime, those people had in general very sound teeth. They become, however, of a blackish colour, which penetrates the enamel without diminishing its polish. They are in the practice of cleaning them frequently with a powder which is not very far fetched; for it consists merely of a calcareous stone of moderate hardness, which they pound between two pieces of hard grey stone. They also use a small quantity of this last stone, to rub the external part of their incisive teeth.

Those people, not content with chewing the betel, import from Malacca an extract of a bitter plant, known by the name of gamber, which they use for mastication.

Mountains of moderate elevation cover Amboyna, and principally the eastern part of that island.

The coffee which they gather appeared to us inferior to that of the Isles of France and of the Re-union. Besides, the Dutch settled in the Moluccas, are very careless in its preparation. Their domestics are in the practice of subjecting it to a degree of torrefaction, which almost reduces it to a cinder, in order that they may have the
the less trouble in pounding it, with the wooden pestles and mortars, which are the only machines they use for this purpose.

The greater part of the marshy grounds are allotted to the cultivation of the sago tree, which furnishes the inhabitants with wholesome food. It forms an article of their sea-stores for long voyages, as does also the Canary almond, which they dry for preservation. That almond has likewise a very agreeable taste when newly gathered.

The rice consumed at Amboyna is not the produce of that island. Yet it would succeed well, on most of the low lands, where the water which issues from the bases of the mountains, presents very convenient situations for its culture. But the Dutch East India Company has prohibited the application of the land to this article; because the purchase of it drains from the island the specie paid by the Company for cloves. Thus those monopolists prevent the accumulation of ready money, and procure, at a very moderate rate, the produce of the labour of the inhabitants. Besides, as rice is much used by persons in tolerable circumstances, it is found to be a branch of lucrative commerce to the Company's agents, who import it chiefly from the island of Java.

By such means that Government, exclusively consulting its own interests, cramps the industry of
of the natives, by obliging them to abandon, so to speak, every sort of cultivation, except those of cloves and nutmegs.

The Dutch also take care to limit the cultivation of spices, in order that the quantity produced may not much exceed the ordinary demand. Those measures, though destructive of all activity, are, however, well suited to the supine disposition of those people.

Many farinaceous roots, and a variety of trees, afford them abundant supplies of food, almost without cultivation; as if nature had thus intended to compensate man, for the inactivity to which she seems to have condemned him, in so sultry a climate.

Engrafting would doubtless contribute to improve the various fruits produced in this island; but no person, even among the Europeans, has yet succeeded in that experiment; for they have always allowed the joint to dry, before the circulation of the sap was fairly established between the stock and the scion. It would, however, have been easy to prevent that accident by keeping the part in a suitable state of moisture, till the junction was fairly formed.

The European kinds of pulse are but little adapted to the heat of the climate.

A very small banana, called *pisang radja*, is looked
looked upon as the best kind. Next to the *litchi* and the mango, it appeared to me the best fruit in Amboyna. They have several species of the *litchi*, among which ought to be reckoned the *nephelium lappaceum*, or the *ramb-outan* of the Malays. Those celebrated botanists, Linnaeus, Jussieu and Gaertner, were mistaken in the classification of that genus; doubtless, because they had not an opportunity of examining its parts of fructification, in a state of perfection.

Linnaeus has classified it among the euphorbia, Jussieu among the composites, and Gaertner among the amentaceae; but it evidently belongs to the tribe of soap-berry trees (*Sapindus sapoaria*, Linn.).

The same restrictive system, which we experienced at the Cape of Good Hope, also prevails at Amboyna. In order to prevent any augmentation in the price of commodities, the Company undertook to furnish us with provisions; and gave the natives a trifling price, for articles which they sold to us at a very great advance.

The Dutch have transformed a custom still more pernicious into a law, which authorizes the chiefs employed by the Company to take from the natives, without any payment, the provisions necessary for their daily consumption. Nothing can be imagined more oppressive than this
this arbitrary contribution. The most laborious man, like the most lazy, is almost sure of being stripped of every thing but a scanty subsistence. Hence most of the natives content themselves with the easiest species of cultivation, passing in idleness that time which, under a different government, they might have employed in placing themselves in easy circumstances.

The fiscal, who superintends the police, compleats the oppression of the inhabitants. That officer has the power of imposing, for his own benefit, pecuniary fines, which he fixes according to the measure of his own rapacity, and the circumstances of the natives, whom he is often pleased to find guilty, when they have not committed the slightest offence!! A Mr. M'Kay, however, then exercised that office in a manner very different from that of most of his predecessors. The inhabitants very much extolled his humanity, which was the more praise-worthy, as he had it in his power to do them every possible mischief with impunity. That brave man told us, that he preferred mediocrity of fortune to riches obtained by such means. Mr. M'Kay, when explaining to us one day the prerogatives of his office, informed us that some of our sailors had caused a riot, at an unseasonable hour of the night, in the house of a very rich Chinese, who sold arrack
arrack and other spirituous liquors; adding, with much frankness, that the powers with which he was invested entitled him to extort a large sum from the Chinese, by way of fine, and to convert it to his own use. Others, said he, would not have scrupled to have availed themselves of such an opportunity; but I never had occasion to repent of my moderation.

The clove is the principal article of produce at Amboyna, and several little islands to the eastward of it, where it succeeds extremely well. The Dutch have placed residents there, to prevent the exportation of that precious commodity.

The nature of the soil of Banda appeared to me more favourable to the cultivation of nutmegs than that of Amboyna; for it is generally acknowledged that the nutmegs of the latter island are inferior to those of the former.

Nutmeg-trees and clove-trees were formerly diffused over the islands of Ternate, Tidor, Makian, &c. in much greater abundance than in Amboyna and Banda; but the Dutch, determined to appropriate to themselves the exclusive benefit of those precious trees, obliged the chiefs of the first-mentioned islands to destroy the plantations of them. Their agents, who reside there, make very rigorous visitations, in order to see this order executed; and those articles are only cultivated at Amboyna,
Amboyna, and the other islands immediately dependent on the Company, where they can exercise continual vigilance. This inquisition, imposed by Dutch avarice, is very much frustrated by the birds, which convey to the neighbouring islands the seeds of the spice-trees from those where they are cultivated. This circumstance made the Company resolve to settle residents in those islands, whose principal business it is, continually to search for and destroy all the young spice-trees they can meet with. But it also often happens that the seeds are dropped in situations so precipitous, as to escape the most active vigilance.

The slaves introduced into the Moluccas, are chiefly brought from Macassar and Ceram. The women of Macassar are generally of a middling stature, and have agreeable features. Their hair is not crisped; and their complexion, though still more yellow than that of European women labouring under the chlorosis, yet procures them, from the natives of the Moluccas, the name of white women, _paranpouang pouti._

Before the Dutch established the slave-trade, the islanders of Ceram were in the barbarous practice of devouring their prisoners of war. It is melancholy to learn that they have abandoned that atrocious custom, only because they turn their captives to better account by felling them.
If this change of system has been attended with an apparent good, it must also give rise to more frequent wars. Man must indeed have sunk to extreme degradation, when the introduction of slavery becomes instrumental to his civilization! This, however, may be said of a people who were formerly cannibals.

The Dutch settled in the Moluccas, speak the Malayan language to their slaves; taking special care not to teach them their own mother-tongue, left the slaves should understand their conversation among themselves.

As soon as the Dutch had secured the exclusive commerce of the Moluccas, they endeavoured to ascertain the population of those islands, and, by exaggeration in that particular, in order to convey a great idea of the subjugated country, they stated it at 150,000 souls, which, according to universal opinion, and the most recent estimates, is double the number of people in the Moluccas.

The quantity of cloves annually produced in that settlement is about 2,000 packages, each 534 pounds avoirdupois. The crop of two years forms the cargoes of three ships, two of which are sent in one year, and the third in the year following. The quantity of cloves and nutmegs exported sometimes exceeds the consumption; and, in that case, it is well known that the Dutch East
East India Company burn the overplus, in order to keep those commodities always at the same price.

In spite of all their anxiety to monopolize the spice trade, it is computed that one-fiftieth part of the crop is annually smuggled. As the small salaries of the Company's agents do not allow them to make their fortunes rapidly, several of them have recourse to means of improving their situation, which, though certainly dangerous, are easily put in practice. And, notwithstanding all the vigilance of the Company, their servants succeed in depriving them of a small part of the spices.

It is not long since the Governor and Lieutenant-Governor of Banda were deposed and sent to Batavia, for having converted to their own uses part of the produce of that island. But those abuses are come to such a pitch, that this example will only serve to make others conduct their operations with more address, in order to prevent a discovery.

That contraband trade is more particularly carried on by means of the canoes of Ceram, in the vicinity of which the spice islands are situated; and the spices thus procured are bartered, with English ships, for Indian silks, opium, firearms, gunpowder, lead, hardware and tin, which the
the inhabitants of Ceram exceedingly value, converting it into bracelets, ear-rings, &c. Some of those articles are again sold at Amboyna.

The Dutch have two factories at Ceram, one of them at its north-west extremity, and the other at Savay. General Bougainville had been misinformed when he said, that they had been expelled from this last post. They have lost, it is true, very extensive possessions in other parts of that large island; but they still retain their establishment at Savay.

The resident who entertained General Bougainville, during his stay at Bourou, had been dead several years. At Amboyna, we had the pleasure of seeing his widow, who has preserved an agreeable remembrance of that French gentleman. Such is her taste for our language, that she has employed all the means in her power, at that distance from Europe, to have her children instructed in it.

The Chinese are almost the only strangers who are permitted to reside at Amboyna; but they are obliged to submit to naturalization, and thus can never return to their own country. They are permitted to trade among the Moluccas; but it is only at Macassar and Batavia, where vessels from China are permitted to enter, that they can procure Chinese commodities. They are all of
a commercial turn; and some of them have purchased, at a very high price, the exclusive privilege of dealing in certain articles; and hence they fell them at exorbitant rates. They practise all sorts of expedients to get money, and hence their reputation often suffers exceedingly; but, on that head, they seem to have lost all sensibility. Some Jews, whom the Company permit to reside in the island, enter into commercial competitions with those Chinese; but the Israelites are no matches for them, the Chinese having greatly the advantage, in point of numbers and connections.

The collector of the Company's revenue is a Chinese, who is likewise charged with preserving the police among his countrymen established in the island, and takes cognizance of such cases as are not sufficiently important to be reserved for the decision of the government of Amboyna. We one day paid him a visit, in company with one of the ministers of the Protestant persuasion; and he entertained us with excellent tea. The table was covered with a great variety of well-preserved comfits: one of the best was the young nut of the fruit of the sago-palm. That chief, who is called the Chinese Captain, showed us, with an air of satisfaction, his armorial escutcheons, variegated with a great number of colours. Those ornaments were profusely displayed in
in the apartment where he received us, and his bed was hung round with them.

His house, like those of his countrymen, was in no respect similar to those of the natives. The Chinese build much more solidly. Their houses are constructed like those of the Europeans, with some difference in the distribution of the apartments. The body of the building is of wood, and the walls of clay, thickly rough-cast, and afterwards covered with several coats of lime.

The frequency of earthquakes and hurricanes makes the inhabitants prefer wooden houses; and scarcely any other than the public buildings are of stone. It almost always happens, that in those moments of consternation the inhabitants are obliged to quit their habitations, and to betake themselves to little cabins very slightly constructed, where they are much more safe than in their houses, which the tempests and the earthquakes sometimes overturn.

We enjoyed excellent weather at Amboyna; the winds were never violent, and those which we had from the south-east and north-west, were very weak.

The market for the different fruits of the country is in the Chinese quarter. The Malays, like the Arabians, call it by the name of bazar. The dealers assemble there, chiefly in the evening, and remain
remain till nine at night, each of them being lighted with one or two torches, composed of the resin called dammer, furnished by a species of cycas, of the same name: (dammara alba, Rumph. Amb. vol. ii. chap. xii, tab. 57.) They inclose this resin in sago tree leaves, without any central wick. It burns with very little smoke; but care must be taken to remove the covering, as it is reduced into a cinder, and to trim it level with the resin. Those people are lighted at a very small expence; for a dammer torch, eight inches in length, and about an inch and a quarter in thickness, costs them not one-sixtieth of a penny fterling, and yields a very clear light for three hours. Their cottages are lighted with the same resin.

Besides the fruit, there are some other eatables fold in that Bazar. In a sultry climate, and an extremely humid atmosphere, fish would soon putrefy, if it was not quickly dried; and hence more dried than fresh fish is fold in that market. When the fish is prepared with the smoke of a small fire, its taste is preferred by the inhabitants to that of fresh fish.

The Molucca islands, after having been long under the dominion of the Arabians, the Moors, and the Malays, came at last under that of the Europeans. The Portuguefc, the Spaniards, and the Dutch, contended for that dominion, and established
established their factories and their forts in those
islands. The Dutch finally prevailed, and have
for many years enjoyed the monopoly of their
spices. Those different sovereigns have produced
such a change in the manners of the natives of
Amboyna, that it is now difficult to discover
any traces of their original character. The Por-
teguese introduced among those people the ca-
tholic religion. The Dutch have used their ut-
most efforts to render them Protestants, thinking
that one of the most likely means to subjugate
them. Hence they have a great number of
schools, where the children of the natives are in-
structed in that religion, and in reading and
writing Malayan. Service is performed in that
language, in a church appropriated to the use of
the natives; and in Dutch in another church, at-
tended by the Europeans. There are two ministers
belonging to each.

The Chinese, as may well be supposed, have a
pagoda in this place.

Some natives, who still adhere to the religion
introduced by the Arabs and the Moors, are pro-
vided with a mosque. The greatest number of
ture believers are settled on the other side of the
road, to the northward of the town. The Dutch
have succeeded much better in making proselytes
to their religion, in the vicinity of their principal
settlement.
settlement. The iron rod, with which they crush those miserable people, has reduced them so nearly to the condition of slavery, that it will not excite surprize, if we observe in them some of the vices which originate in that state of human degradation.

Although those people be habituated to resign almost every thing they possess to the Europeans, there is one article which they are not disposed to resign to them. Jealousy reigns among them to an extreme, which makes any indiscreet proposal to their women very dangerous. In such a case no dread of punishment would prevent them from executing their vengeance.

The Dutch men preserve their European clothes as a sort of ceremonial dress; but they have all vests with sleeves, in order that they may conveniently throw off their coats, when the master of the house, to which they happen to be invited, sets them the example. On such occasions, those who wear wigs, lay them aside, and put on large caps of very fine linen. The European women over a petticoat, which falls very low, wear a gown made like a shirt, as long as the petticoat, and which being divided in the fore part, is kept close to the body by a girdle. Their hair is formed into a spiral behind the head, and fastened with two large pins, which cross each other.
Such is the ordinary dress of the European ladies. The native women, in good circumstances, who live in the town, wear dresses of the same form, but commonly black: by the country women, blue is preferred to every other colour.

The female slaves wear a sort of shift, by way of a gown; but it is not divided before, like that of the free women.

The free men dress their hair with a bent comb. The slaves tie it up with a handkerchief.

The Chinese, it is well known, received spices from the Moluccas many ages before those islands were seized upon by the Europeans. The Greeks and Romans were also acquainted with them; and they were long objects of research with the navigators who first penetrated into the oriental seas.

Those precious aromatics were then confined to a small number of islands; but have been since transplanted into very distant countries, where they succeed perfectly well. We have grounds to hope, that our colony of Cayenne, will one day rival the Moluccas, and by producing a much greater quantity of spices, will diminish their price, and bring them into more general use. Those articles are also successfully cultivated in the isles of France and Bourbon.

We took on board the Recherche two hinds and
and a flag, with a design to enrich New Holland with that beautiful species of quadrupeds.

We provided a good stock of fowls, common ducks, and Senegal ducks, (oies de Guinée.)

The 

The cazoard was not included among our live stock. That bird, though kept in the poultry-yards at Amboyna, is not very easily procured, not being a native of that island, but imported from the great islands to the eastward. It does not well agree with long voyages, and besides its flesh is black, tough and dry. In proportion to the room, which it would have occupied on board, that bird would have afforded us much less food than the poultry which we had already provided; for except its thighs which are muscular, being intended by nature for running, the rest of its body is of a very moderate size, in proportion to its height.

Our roots were chiefly potatoes and yams.

The beautiful leaves of the banana tree, and different kinds of melons adorned the stern of our ship.

We bought a good number of hogs and goats.

We took much care of our cow; although her milk was exhausted; for it would have been impossible to have procured another. The species of buffalo common in India, is indeed a sort of domestic
domestic animal at Amboyna; but the female of that quadruped gives little milk, and being almost untameable, would have been very troublesome, not to say dangerous, on board.

Our butcher, whose business it was to take care of the quadrupeds, could procure them little food but what was hard and dry, consisting, in a great measure, of the anthifiria ciliata; but happily, before we failed, he was enabled to provide the large stocks of banana trees which, for a long time, afforded those animals succulent food. As they were allowed but little water, the abundant juice of those plants were extremely serviceable to them.

The flour which we procured at Amboyna, was but of a middling quality, and the quantity with which they could furnish us, was but about 11,600lbs avoirdupois. This scarcity, whether real or pretended, obliged us to purchase it at an exorbitant price.

We found at Amboyna but few articles of European provision. The Lieutenant-Governor, however, had a considerable quantity of Hamburgh beef, which is in great request among navigators. That officer very willingly let our Commander have a part of it; but when we had got out to sea, we discovered that his servants had dishonestly
dishonestly withheld the most juicy pieces of the beef, and had substituted the same weight of the bony and tendinous parts.

The young shoots of the bamboo, cut into slices, and preserved in vinegar, are excellent pickles, in a long voyage, and we provided abundance of them. Those young shoots are generally very tender, if care be taken to gather them in proper time. They are sold in the market as pulse, for which they are a good substitute. They are often above three feet in length, and considerably more than an inch in thickness.

We also furnished ourselves with cloves and nutmegs, preserved in sugar. The rind of the nutmeg is the only part fit for this purpose; and unfortunately the blundering confectioners had chosen such as were too far advanced, as were also the cloves, which, having reached the size of middling olives, had acquired too much of the aromatic flavour to form an agreeable preserve. A man must have an Indian palace, who wishes to enjoy those delicacies. I may say the same thing of the preserved ginger, with which we were provided:

Our store of sago was by far too great; for we used only a small part of it. Our people never could reconcile themselves to that food, wholesome as it was; and, notwithstanding all the arguments
guments of our chief surgeon, they, in some months, conceived such an aversion to it, as to give the preference to salted provisions of the worst quality.

We had but few hogsheds of wine remaining, which were fit for use. The only spirituous liquor we could procure was arrack, of which we purchased several hogsheds. Some navigators are too lavish in their praises of that liquor, which is not even so good as middling French brandy.

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C H A P. IX.

Departure from Amboyna—Singular Effect of the Tides—View of different Islands—Ravages on Board, by the Species of Cockroach called Blatta Germanica—Run along the South-West Coast of New Holland—Death of the Blacksmith belonging to the Recherche—A Storm drives us towards the Coast—We anchor in Legrand Bay—The Esperance, while at Anchor, loses two of her Rudder-irons—Her Mooring-chain gives Way—Different Excursions on the neighbouring Land—New Species of Swan—Sea-salt found at more than one hundred Toises in perpendicular Height—That Phenomenon accounted for—Citizen Riche loses himself on the Continent more than two Days
Days—Departure from Legrand Bay, and Continuation of our Run along the Coast—Want of Water obliges us to leave it—Arrival at Cape Diemen—Cast Anchor in the Bay of Rocks.

**October 15th.**

We only waited for a fair wind, to take our departure. At half an hour past seven A. M. having a small breeze from the south-east we immediately weighed anchor, and about eleven o'clock, we had reached the entrance of the road, the western point of which bore W. 6° 15' N. and the eastern E. 6° 15' S. our distance from this last being about 1,200 toises.

Our meridian observations gave the latitude of the most westerly part of Amboyna, 3° 46' 54" south, and its longitude 125° 53' 28' east.

The breeze continuing all the day at south-east, we kept close to the wind, on the larboard-tack.

One of the boys of the large Dutch East-India-man, which had just failed for Batavia, had hid himself on board the Recherche, and made his appearance at the very instant when the Captain of the Esperance, acquainted the General, that he had discovered, on board his ship, six fugitives from Amboyna, namely, three of the Company's soldiers, a sailor and two negro slaves. Those unhappy men had made their escape from a country, where...
where they groaned under an almost equal state of servitude!

The Commodore had allowed the people to bring pigs and fowls on board, for their private use; and all parts of the ship were lumbered with them, but especially between decks; and they were the more troublesome, as the disagreeable odour which they diffused, was considerably increased by the heat of the climate.

19th. This evening, when we were in latitude 7° 10' south, and longitude 123° 14' east, the compass had no variation.

21st. This morning early, we saw a phenomenon, which we had already observed several times, and which never fails to alarm navigators, who sometimes, during the night, take it for the effect of breakers. The air being scarcely in motion, we observed the sea foaming at some distance. Waves followed each other in quick succession, and we were fast approaching to the spot. A very heavy swell, occasioned by the sea receiving an impulse contrary to that communicated to it in the preceding night, succeeded the agitation of the water. The cause appeared to me to depend on the tide struggling between lands, where the currents acquire a velocity proportioned to the confinement of the channel.

About nine o'clock in the morning, we saw
Kisser island, extending from S. to E $\frac{1}{2}$ S. E. It is very mountainous, especially on the western side. Its greatest dimension is from W. S. W. to E. N. E. It is situated in $8^\circ 13' 2''$ south latitude and $123^\circ 32' 17''$ east longitude.

Dark weather prevented us, till about three o'clock P. M. from seeing the north side of the island of Timor, although our distance from it was then but about 5,000 toises. Its lofty mountains rose above the clouds, and during the night we had observed, fires at different elevations, on their sides. Doubtless the inhabitants, at those altitudes, find it comfortable to correct by fires the cold air of the night, and perhaps also they may use them to fray away the wild beasts. Those fires served as so many light-houses to direct our course along shore, when some gentle breezes interrupted the calm which prevailed for a great part of the night.

24th. About seven in the morning, we were within 2,500 toises of Laphao, a little Portuguese settlement, on the west side of Timor, in lat. $9^\circ 22' 45''$ S. and long. $122^\circ 23' 36''$ E.

The Portuguese flag hoisted there, bore S. $30^\circ$E. They saluted us with five guns. A canoe with a double outrigger, immediately came off to view our ships, to which it very nearly approached; but
but instantly returned towards the shore, without hailing us. On coming still nearer the land, we saw both natives and canoes, upon the sandy beach. We sounded several times, with thirty fathoms of line; but found no bottom.

About four o'clock P.M. we saw the Island of Batou, bearing south-east, distant about 10,000 toises. It is separated from Timor, only by an interval of 2,500 toises.

26th. Calms being frequent on the coast of Timor, we stood off shore this afternoon, by help of a breeze from the south, and steered towards the west; but without finding a steadier wind. Those calms appear to be caused by the heats, which at that season of the year are the more violent, as the sun darts his rays almost perpendicularly.

The continuance of the calms renders the navigation very troublesome along those coasts, on which there is always danger of being thrown by the currents. The great irregularity of those currents, renders it very difficult to construct charts of those coasts; and hence the great disagreement between those which have been hitherto offered to the public.

A great number of whales of different species, several times surrounded our ship, and leaped out of
of the water close alongside. From the little fear with which they approached us, we concluded that they had never been pursued by fishers.

We were pestered with the species of parrot called lorries, of which our people had bought a great number at Amboyna. Their piercing cries gave us no rest in the day time. Their new situation, on board ship, did not agree with them, for they died daily. They were seized with convulsions for which we found vitriolic ether a palliative; but it did not preserve their lives.

The mortality also spread among our feathered stock, the greater part of which were seized with violent diseases in the eyes, in consequence of the coldness of the nights; and those which were deprived of sight, soon died of hunger. It would, however, have been very easy to have prevented that disagreeable circumstance, by sheltering them from the night air, with a sail properly spread over their coops.

The water, which we took in at Amboyna, did not justify the great encomiums bestowed upon it, for keeping well at sea. It had already become so putrid, that it could not be drunk, till the inflammable air, with which fortunately it was but weakly united, had been expelled by strong agitation. This unexpected decomposition certainly arose from the negligence with which
the casks had been cleansed. There remained enough of the fermentative principle of the old water, quickly to corrupt the new.

It is certainly very disagreeable to be obliged to drink the corrupted water of salt marshes; but it is encouraging to know that by agitating it some minutes, as I have shown, it resumes its original purity.

At half an hour past four A. M. we saw, by star light, the island of Savu, extending from W. 13° S. to S. 27° W. at the distance of 1,000 toises. We steered west, in order to pass to the northward of that little island; and about half past nine, we were abreast of the bay in which Captain Cook anchored, in his second voyage, after having passed Endeavour Straits. We distinguished five canoes plying very near the shore, where they were sheltered from the waves, which spent their force upon a little reef, level with the water.

The island of Savu presents an enchanting prospect; being intersected, especially towards the south-west, by very beautiful hills, whose gentle declivity seems to offer to the natives a foil of easy and favourable cultivation.

Groups of cocoa-nut trees scattered on the shore, afford shelter to some cottages, which additionally embellish those charming plantations.

That
That island, on which the Dutch have a small settlement, is in $10^\circ 25' 48''$ S. lat. and $119^\circ 45' 19''$ E. longitude.

About noon, a little island, within our view, extended from S. $46^\circ 30' W.$ to S. $57^\circ 30' W.$ at the distance of 7,500 toises. It appeared to us not to exceed 5,100 toises in length. Its latitude is $10^\circ 28' 50''$ S. and its longitude $119^\circ 50' 17''$ E.

29th. At six o'clock A. M. New Savu bore E. $31^\circ 30' S.$ at the distance of about 5,100 toises. That little island, which is very low, is in $10^\circ 37' 28''$ S. lat. and $119^\circ 2' 47''$ E. longitude.

At sun-set, we saw a part of the island of San del Bofe, in the N. N. E. distant about 20,500 toises. It is covered with mountains of a moderate elevation, and is situated in $10^\circ 27' 4''$ S. lat. and $118^\circ 6' 34''$ E. longitude.

The position of a little island, which bore from N. $1^\circ E.$ to N. $3^\circ 30' W.$ at 20,500 toises distance, was ascertained to be $10^\circ 27' S.$ lat. and $118^\circ 7' 5''$ E. longitude.

30th. This day the current ceased to set westward, and carried us ten minutes northward. The bight in the coast of New Holland to the southward of Timor, probably causes this different direction of the currents, which constantly set from east to west through Endeavour Strait; for they
they soon resumed their westerly direction, and carried us from 20 to 24 minutes daily.

It must be observed, that Captain Cook, after having passed Endeavour Strait, experienced, like us, a change in the currents, for twenty-four hours, but in a still greater degree than we did.

31st. After losing sight of San del Bofe, we met with no other land till our arrival on the south-west coast of New Holland. The light winds which we experienced, made us apprehensive, that we should arrive on that coast, too late to finish our survey of it.

November 3d. In the afternoon of this day, we were probably at no great distance from some rocks, for we were surrounded with a great number of birds, which never venture far from the land, and we did not lose sight of them, till the approach of night.

4th. We continued to see many birds this day. Navigators in traversing those seas, ought to redouble their vigilance, in order to avoid the rocks, which those birds frequent.

16th. Our stag fell over board during the night, through an opening, left at the extremity of the gangway, much larger than necessity required. Besides this loss, we had to regret that one of our hinds had been delivered over to the butcher's knife, because it was dying with sickness.
nels. We acquainted Captain Huon with this accident, begging him to take all possible care of his stag; but it died before our arrival in New Holland.

We passed the Trials at too great a distance to have a view of them; but we saw a great number of birds, which doubtless took shelter there during the night.

The species of cockroach, called *blatta germanica*, had multiplied to such a degree, during the months we had passed between the tropics, as to incommode us exceedingly. Those insects, not contented with our biscuits, gnawed our linen, paper, &c. Nothing came amiss to them. Their taste for vegetable acids was surprizing; no sooner was a citron opened than they attacked it; but it was still more astonishing to observe the rapidity with which they emptied my ink-glass, when I happened to leave it open. The causticity of the vitriol which they swallowed, appeared to have no bad effect on them.

The sugar extracted from the fago-tree, which we brought from Amboyna was a bait, which they could not resist. We destroyed great numbers of them, by mixing a small quantity of that sugar with water in a vessel, into which they tumbled.

Those insects tormented us still more in the night.
night than in the day. They continually disturbed our repose, by passing over any part of our bodies which happened to be uncovered.

The cockroach, called *blatta orientalis*, made its appearance on board soon after our departure from Brest; but it soon took leave of us, and its place was supplied by the first mentioned species.

17th. This day we were carried 38° to the north-west. The Trials, from which we were not far distant, and some shoals, doubtless caused very strong currents.

19th. This day we passed the tropic of Capricorn. The mercury in the barometer rose, on the same day, to 28 inches 5 lines, which appeared the more surprising, as it varies but little in the tropical regions. It was besides the only instance, in our whole voyage, in which it rose so high in such a latitude. Although the thermometer was not lower than 18°, we experienced a keen sensation of cold.

21st. We began to meet with variable winds, being in latitude 26° S.

Our goats daily perished for want of proper food. We lost at the rate of two in the day.

28th. About five o'clock P. M. the Esperance being to windward, had very nearly run foul of us; though the wind was favourable for steering. That piece of negligence in the officer of the watch,
watch, might greatly have injured the ships, and might have obliged us to abandon our design of visiting the south-west coast of New Holland, which it was our business to explore, without loss of time. But fortunately a boom, placed in the critical moment between the ships, prevented the accident.

December 6th. The appearance of several species of sea-gulls, and other birds, which never stray far from the coast, indicated our proximity to land. The wind blew too violently from the S. S. W. to permit us immediately to stand in for it with safety. Besides, the sea having been strongly agitated, and the horizon much obscured with clouds, we resolved to steer S. E. \(\frac{1}{2}\) S. hoping that next day circumstances would be more favourable.

At noon, we found our latitude to be 34° 12' south, and our longitude 112° east.

We lay to all night, sounding many times with 112 fathoms of line, without finding any bottom.

7th. About half past two in the morning, we were steering E. S. E. and at day-break, the Esperance made the signal for land at N. E. distant about 15,400 toises. It was the western extremity of the south-west coast of New Holland,
discovered by Lewen in 1622; being a low land, extending from N. W. to S. W.*

At six o'clock we tried, E. 4 S. E. and when we came within 5,000 toises of the coast, we followed its direction towards the S. E. A very strong gale at W. N. W. drove us at the rate of 15,400 toises in the hour.

The interior country was interspersed with sandy downs, which had the appearance of the greatest sterility. Those small hills, scattered on a flat country, looked at a distance like little islands. In the intervals which separated them were some shrubs, the blackish foliage of which, indicated a state of suffering.

The peaked rocks, which rose in the midst of those sandy plains, the explained formation of the downs, the bases of which were doubtless composed of other rocks of the same nature, but of forms more favourable to the accumulation of the sand by the winds.

Fresh water must be scarce in such sandy regions, where that which falls from the clouds doubtless penetrates to great depths, without meeting with strata to stop their progress.

This morning our blacksmith was found dead

* Should not this last bearing be S. E.? — Translator.
in his hammock. The preceding evening he had partaken of a feast, which the gunners formerly used to celebrate with exactness. They had long been saving a considerable part of their provisions for this entertainment. The unfortunate son of Vulcan, extenuated, like the rest of us, by the abstinence to which we had been condemned since our departure from Amboyna, had too much indulged his appetite, and we were deprived of him by a stroke of the apoplexy. This loss would have been irreparable, if good fortune had not conducted on board of our ship, at the Cape of Good Hope, the very intelligent workman who succeeded him.

At noon, being in latitude 34° 45' 36" south, and longitude 113° 38' 56", the nearest part of the coast bore N. E. distant 5,100 toises; and the land we saw, set from W. 15° S. to E. 40° 30' S.

The mountains now began to assume the appearance of a regular chain, the highest of which did not seem to exceed 200 toises in perpendicular elevation. We observed large tracts of them entirely denuded of vegetation: in other places: feeble shrubs were sparingly scattered, with here and there a tree of moderate height.

The mountains sometimes presented several chains, rising by degrees above each other.
At four o'clock P. M. we saw some breakers near the coast, and a little to the eastward, two rocks 510 toises from the beach, and which we passed at a very small distance. The largest was remarkable for a separation in the middle, from which rose perpendicularly, about twenty-five toises above the level of the sea, an isolated piece, in the form of a very flat plate. I took it and its base, to be composed of a sort of hard grey stone. We admired the fine effect of the waves, which rising to the very summit of the rock, assumed a colour perfectly white, and descending again in foam, displayed that singular rock, as if it had just emerged from the bosom of the deep.

The coast then extended very regularly towards E. S. E. its little bights being terminated by points, the most prominent of which scarcely advanced 1,000 toises into the sea.

Being driven by an impetuous wind, we were not without apprehensions, on finding ourselves so near a coast which offered us not the least shelter; but we clawed off during the night, by steering S. S. W. A very rough sea from the W. N. W. made our ship labour prodigiously. Having been so long accustomed to navigate smooth seas, we had lost the habit of supporting such violent agitation: the wind blew in impetuous
Impetuous squalls, and allowed us to carry very little sail.

8th. About half an hour past six this morning we stood to the north-east, towards the land, near to which a strong breeze at west soon carried us; but we fell to leeward. The coast then stretched almost directly eastward; and the interior land presented the same appearance as on the preceding day. We observed vast yellowish tracks, which appeared to consist of hard stone, on which we did not distinguish the smallest trace of vegetation.

At noon our latitude was $35^\circ 17'$ south, and our longitude $115^\circ 12'$ east. In a little time the mountains subsided, and we came in sight of a vast plain of sand, in which were interspersed, at great distances, little hills, of which some formed capes, advancing a small way into the sea.

About four o'clock P. M. we passed a cluster of rocks, situated near the coast, and scarcely covered with shrubs, the dismal green of which was a proof of the sterility of the soil. At six, we were abreast of a bay, of which we could not see the farthest extremity. It would have afforded us perfect security against the impetuous winds which blew, while we were upon that coast. A foreland, which advanced from the north-west to

**E e 3**
the south-east, near 5,000 toises into the sea, some little islands and several rocks, situated at the entrance of that bay, presented abundant protection from the winds in the offing; but the waves ran so high as to prevent us from sending a boat to found it.

We lay to during the whole night.

Being about 2,500 toises from the shore, we had foundings with 42 fathoms of line, the bottom being shells and bits of coral mixed with very transparent quartzose sand, which seemed to me an indication that we should have found a good bottom in the bay which we had passed.

9th. During the night, a clear sky permitted us to see the land, from which we stood off a little, having still the same kind of bottom.

The west wind was not very violent, and at half past four in the morning, we made sail, in order to stand along the coast, which trended towards the north-east, and a little farther on, towards the east and the south-east.

At eight o'clock we passed a bay, which appeared to reach 15,100 toises into the land, and to have an opening of at least equal extent. It is exposed to the south-east wind, but secure against that of the west.

Farther on, we saw in the offing some little rocks, not very distant from the shore.
At noon, being in latitude 34° 48' south, and longitude 116° 52' east, we saw, within the land, N. 4° W. a mountain more elevated than any which we had observed; on the preceding days. Being isolated amidst vast plains of sand, it produced a very picturesque effect, and appeared to be about 25,500 toises distant from the coast. Its shattered summit exposed to view many irregular peaks, most of them perpendicular. Such peaks indeed extended over the whole mountain, which stretched 7,600 toises from east to west. This configuration left no room to doubt, that the rocks of which it consisted were not extremely hard.

We had not yet seen the least indication of inhabitants, since we began to coast those sterile shores. It was to be supposed, that some springs of fresh water would attract them to the base of that mountain; and accordingly the smoke of two fires, which they had kindled, convinced us of their presence.

About half past four o'clock P. M. after having doubled a cape terminated by some rocks near the shore, we came abreast of a bay as wide as that which we had seen in the morning, but not reaching so far into the land. The surrounding land was generally very low; but we observed, towards its eastern part, some little hills detached from
from each other. It offers excellent shelter from west and south-west winds; but it is entirely exposed to those of the south-east.

Tropical birds with red streaks, and some albatrosses, of a darker colour than those commonly seen at the Cape of Good Hope, flew around the ship.

We lay to all night, and sounding every hour, we had constantly thirty-three fathoms of water, with a bottom of grey sand.

10th. At half past four in the morning, we stood towards N. 1/2 N. E to get in with the coast, and we soon saw it extending from N. 2° E. to W. 25° N. A clear horizon permitted us to see other low lands, stretching towards the north-east.

We soon after passed between the main land and the reefs, which were 10,200 toises distant from it. About eight o'clock, we left others, 12,800 toises distant; and it was not long till we saw, that a little island which we perceived towards the east, was connected to the land by a chain of reefs which, advancing into the offing, obliged us to keep on its south side till we had doubled it.

Three fires successively kindled on the point of land, where the reefs originated, apprized us that the natives were on that spot. The produce of the
the sea is doubtless the principal resource of those people, who inhabit so barren a soil.

At noon, we were in 34° 11' south latitude, and 118° 22' east longitude, when the little island already mentioned bore N. 38° W. at the distance of 1,020 toises.

Other fires lighted along the coast, sent up large columns of smoke, intended no doubt, by the inhabitants, to let us know that they were there.

About half past four o'clock, we stood away from a little island, distant 20,500 toises from the coast. It was joined to a series of reefs, which extended above 510 toises towards the east. The lead then indicated ten fathoms water, but some time afterwards, twenty-one fathoms of line did not reach the bottom.

We were becalmed, a short space, towards the close of the day; but a small breeze at south-east soon sprung up, and permitted us to stretch to the south-west, which course we held during the whole night.

We hove the lead every hour, and had a bottom of quartzose sand, mixed with broken shells and coral, at a depth varying from twenty-five to thirty-three fathoms.

11th. This morning, we stood towards the east,
east, with all sails set, having a fresh breeze from
the W. N. W.

At six o'clock A. M. The mercury in the ba-
rometer had fallen more than three lines. Al-
though the weather was fine, this certain indica-
tion of a great loss of equilibrium in the atmo-
sphere, merited serious attention. We neverthe-
less advanced before the wind, towards the centre
of a group of little islands, about 5,100 toises from
the coast, although we were uncertain of finding
a passage between them, when we saw them at
a distance. About ten o'clock, when we were
intangled among them, we discovered that they
were joined together by reefs. The sky assumed
a menacing aspect, the horizon lowered in the
W. S. W. and presently the wind blew from that
point, with the greatest impetuosity. It was to
no purpose, that we spent a long time in seeking
among those reefs an opening, which might al-
low us a passage into the open sea; and as we had
no other than that by which we had entered, we
put about, in order to gain it. The impetuosity
of the tempest having forced us to furl most of
our sails, the ship fell off so much, that we went
to leeward of our intended exit. Our running
rigging giving way on all sides, our manoeuvres
were much retarded. Our repeated attempts to
extricate ourselves, were unsuccessful: we always fell back into our dangerous situation, there to beat about, in a space abounding with sunken rocks, at different depths, on which the ship was in danger every instant of being dashed to pieces; and it required an experienced eye to distinguish those rocks, in a sea so strongly agitated. Citizen Raoul, a very skilful young mariner, in whom our Commander had great confidence, was at the mast head, directing the movements of the ship. Many times we were carried close to rocks concealed by the waves; but he conducted us safely past them all, though it was very difficult to distinguish them, even at a small distance.

The Esperance, which did not keep to windward so well as our ship, was close in with the shore, having no other alternative than to cast anchor or be stranded. About one P. M. we saw her at a considerable distance, in a place where we did not think she could come to an anchor. She had clued up all her sails; and we were very uneasy about her, being apprehensive that she had struck. But the steadiness of her masts soon removed our fears, by shewing us that she was riding at anchor. Her distance, however, and the force of the wind, hindered us from distinguishing her signals.

We did not hesitate to have recourse to the
same shelter. The Commodore immediately gave orders to bear down under the fore-sail; and we were soon alongside of the Esperance, which was feebly defended from the waves by a little island. We were advised by those on board that frigate, to steer close to the land, in order to obtain a better station than they. In approaching near to the little island, we had the frightful spectacle of an impetuous sea which, when it had cleared the south point, opened, by its precipitate fury, a gulph which exposed to view part of the base of the rock. The dread of coming too near the land induced us to let go our anchor to windward of the Esperance, but not sufficiently within the anchoring place, to avoid falling foul of her, if our ship should drag her anchors. The danger was so much the greater, as our sheet-anchor could not hold fast the ship. The axes were in readiness to cut the masts, in order to give less hold to the wind, when our best bower secured us in our position.

We now rode at anchor in nineteen fathoms of water, with a bottom of quartzose sand, mixed with broken shells.

We were violently agitated by the waves, and exposed to almost the whole force of the wind; and we were apprehensive that our cables would give way, in which case we must have been dash-
ed upon the rocks, where the waves broke in a tremendous manner.

In the evening, we let go a third anchor, to give us more security against such violent agitation.

12th. The mercury in the barometer, which had sunk to 27 inches 8½ lines, sensibly rose, as soon as day light appeared, and announced to us the termination of the tempest.

The surge having considerably abated, Captain Huon sent his boat to tell us, that on the preceding day, the Esperance was driving towards the land so rapidly, that she was on the point of being stranded, when Citizen Legrand, an officer of distinguished merit, went to the maste-head, in the very midst of the tempest, and almost immediately came down, exclaiming with enthusiasm, that the ship was out of danger! He then pointed out the anchoring-place, which he had viewed, and in which he was certain that she would ride in safety. This discovery saved both the ships; for the Recherche, obliged to beat about in the night among dangerous rocks, after struggling as long as she could, against the tempest, in hopes that a change of the wind would enable her to get into the open sea, would at last have been infallibly wrecked.

We gave to that bay the name of Citizen Le-

grand,
grand, which will recall the signal service which that able mariner rendered to our expedition. His advice was to come to nearer the land, and it was to be regretted that it was not followed, for the larboard chain by which the Esperance rode gave way in the night by the force of the waves, and that frigate swinging by one anchor, would soon have been driven ashore, if another anchor had not fortunately taken hold. That ship had also lost two of her rudder-irons, and had no spare ones to replace them. They were broken by the violent shocks of the waves against the rudder, in the combined motion of pitching and rolling. The motion of pitching, all things else alike, is much quicker at anchor than at sea.

From the place where we lay at anchor, we reckoned twelve little islands, besides the rocks and breakers, which afforded us shelter. The sea, in that vast basin, sent in very heavy waves; but fortunately we were anchored in good holding ground.

The little island, to leeward of which we lay at anchor, bore from S. 25° W. to W. 3° N.

In the morning, a boat was sent thither from each ship, to take the soundings; for we intended to come nearer to it. They found everywhere an excellent bottom, and eight fathoms of water, at a small distance from the land.
Some persons, in order to get on shore, were obliged to plunge into the water, for the boat would have been stove, if it had gone near enough to set them on shore dry.

Many seals, of the species which Buffon denominates petit phoque, and Linnaeus phoca pusilla, basked quietly in the sun, upon the rocks and the sandy beach; and some of them allowed themselves to be knocked on the head. It is proper to observe, that the figure which Buffon gives this amphibious animal, has undoubtedly been taken from a skin badly stuffed; for it represents the neck much smaller than the head, as is the case in most quadrupeds; but the seal being formed for swimming, has nearly the shape of a fish, the head being less than the neck.

In the same figure, the ears are represented as very open, whereas they are nearly of a conical shape, without any other aperture than a longitudinal slit. It would seem that nature intended to hinder the water from entering the ears of that animal; for he has the power of shutting them closely when under the water, and of opening them, though slightly, when he emerges.

On the same island, there was a numerous flock of swans, several of which allowed themselves to be taken by the hand; but the rest, apprized of the danger, immediately flew away. This new species,
species, is somewhat smaller than our wild swan, and of an ash-coloured grey. A little lighter on the belly. The bill is blackish, with a tumour of a sulphur-yellow at its base. The legs are slightly tinged with red.

Our main-sail had suffered a small rent when we were struggling against the tempest the preceding day. This morning we availed ourselves of the fine weather, and shifted it.

13th. A small breeze at south-east, succeeded the tempest. As the moment was favourable, we warped, early in the morning, nearer to the shore, from whence we were then distant but about 150 toises.

I landed on the little island on the south-west of us. It is mountainous, and not more than 2,050 toises in length, and 1,025 in breadth.

The swell was not yet sufficiently abated to allow us to land with facility. It was necessary for us to seize the moment of the highest surge for allowing our wherry, kept fast by a small painter, to come close to the beach, and each time one of us leapt on shore. As the edge of the wherry, on which it was necessary to place the foot, in order to jump out, presented an inclined plane, and the beach was steep, we ran the risk of tumbling into the water, and being carried off by the surges, which followed each other very quickly,
quickly, and from which even a good swimmer would have found it difficult to escape. That was not the only danger we had to apprehend; for we might have fallen a prey to a large shark, which kept at a small distance a-f stern. We had observed him hovering about the ship ever since day-break, and he followed our boat as if he longed for one of us. The chaplain of the Recherche fell into the water, and would have been devoured by that animal, if the coxswain of the boat had not rescued him from the danger.

Some sailors belonging to the Esperance, when strolling upon the rocks, killed a number of seals of different colours; white, grey more or less deep, and brown, bordering upon black. They were, however, all of the same species, which has been denominated by Buffon *petit phoque*. Their flesh was found very good eating.

The little island on which we were, was composed of fine granite or quartz. There were also quantities of feldspar and mica; this last in blackish plates. We also observed some few *spiculae* of black schorl. The granite lay bare in many places. The vegetable mould, collected in the least precipitous situations, was covered with shrubs, sometimes so close together, as not to be easily penetrated. I plucked a magnificent species of
of *leptospermum*, remarkable for its silvery leaves, and bright red flowers.

I found there several new species, belonging to the tribe of *thymeleae* (mezereons), which have but two *flamina*, and of which Forster has composed a new genus, under the denomination of *bank sia*. I also observed new species of the *rumex*, the *lobelia* and the *buplevrum*.

The western part of that little island presents, in one of its highest parts, a plain surface of calcareous stone, the *strata* of which follow the gentle declivity of the mountain. Strata of the same stone doubtless formerly covered the other parts of the island, and masses of granite served as their bases; but probably they have tumbled down, and have left the steep places exposed; for in the north-east, where the mountains fall with a very gentle declivity, there are still some calcareous stones, at a small distance from the beach. I was not able to discover any shells, by all the search I could make.

From the summit of that little island, we had a distant view of a part of the reefs and rocks on which our ships were in danger of being wrecked, before they arrived at this anchorage. Their number still appalled us, and we were astonished at having effected our escape from so many dangers.
Two sea-gulls, a male and a female, of the species called by Buffon, *bourgmestre*, and by Linnaeus, *larus fuscus*, perched upon the heights at a small distance from us. The female having been shot, the male frightened by the noise of the explosion, took to flight; but presently returned, and being determined not to abandon his mate, was killed by her side!

I also fired at a seal, which lay at a distance from me. Feeling himself wounded, and distrust- ing his strength, he durst not take to the water. Immediately another very large one, hearing the cries of that which I had wounded, came and licked the blood with apparent satisfaction; but at the sight of a long-boat, which was steering towards them, they plunged into the sea.

Soon afterwards, I saw more of those animals advancing towards the beach. Before they ventured upon the land, they never failed to raise their bodies nearly half out of the water, and they remained some time in that attitude, smelling and gazing all round, in order to discover whether or not they could safely come and repose upon the rocks.

14th. As on the preceding day, I had gathered an abundant harvest of objects of natural history, of different *genera*, it became necessary for me to
pafs a part of this day on board, in order to describe and prepare them.

About five o'clock P. M. the tents belonging to the observatory were sent on shore to be pitched. I wished to embrace this opportunity to make another visit to the little island. As the tide was only beginning to rise, a landing could still be effected; but in a little time it would been impossible to get back to the boat, and we should have been obliged to pass the night on shore. This consideration prevented several of my companions from landing. The interval to be got over before reaching the shore, was about twenty feet, and at every surge, the water rose there above six feet perpendicularly. There was a necessity for seizing the moment between the two surges, or of running the risk of being swept into the sea, an accident which actually happened to the surgeon's mate of the Recherche. He had told us before hand, that he would get on shore with dry feet; but not being sufficiently quick in his motion, he was hurried along the shore by a violent surge. Fortunately he could swim, and returned towards the boat; but in a very different plight from what he had supposed, when he boasted of his agility.

Those who had landed were obliged to pass the
the night on shore, without any other provisions than a few biscuits. Urged by thirst, they scrambled in a very dark night, above 1,000 toises, over rocks, in order to procure water, and, to add to their misfortune, they found it brackish.

Enormous sharks, of the most common species, the *squalus carcharias*, frequently appeared in the basin where we lay at anchor. On board the *Esperance*, they caught one which was about thirteen feet in length, and of more than proportionable bulk.

As every circumstance convinced us of the impossibility of renewing our stock of water, the officer second in command ordered, that each person should be allowed only three quarters of a bottle daily. At the same time he, as well as the Commander in Chief, used it without restriction. I thought, however, that water was one of those articles, the enjoyment or privation of which ought to have been extended to all, without distinction.

15th. The geographical engineer of the *Recherche*, set out at day-break, in the barge, to survey the little group of islands, to examine whether there was any passage to the eastward, between the rocks, and to look out for a proper watering place. I ardently wished to have joined this expedition; but as geographical operations
have but little connection with researches in natural history, we were not apprized of the hour of departure, for which every thing was arranged so clandestinely, that I knew nothing of it, till the barge was pushing off from the frigate.

The impossibility of getting a boat to convey me to the main land, made me resolve to pass this day, on the island in the south-west, the seashore of which I traced, setting out in a north-westerly direction. I soon arrived in the south-west part of the island, near the most elevated land, where I found a little rill of fresh water, issuing from a fissure in a granite rock. This discovery diffused great joy among us; for we had been for some time reduced to very short allowance of that article.

Very near that rill, I saw some cavities full of limpid water, which I had reason to believe as fresh as that which issued from the rock; for it was more than 200 toises above the level of the sea. But I was mistaken: it was very salt, and farther on, other excavations filled with the same water, were bordered with crystals of sea salt in laminae so thin, that at a certain distance, they resembled glass. This fact having been mentioned on board by those who accompanied me, some persons, in order to account for the phenomenon affirmed, that the waves must beat up to that height
height in bad weather, notwithstanding the coast was guarded by very large rocks; although indeed they were but at a small distance from the bases of the mountains.

As the rill, which was very weak, furnished slowly the water necessary to quench our thirst, we were obliged to remain beside it, when presently some little drops of the salt water with which we were wetted, convinced me that the air raised to the place where we stood, the sea water, attenuated by impinging against the rocks. It was not long till our clothes were covered with it, as if we had been exposed to a slight fog; and this water had lost none of its saltiness.

Some birds came to our retreat to quench their thirst. There I killed the charming yellow turtle dove, remarkable for six or eight golden feathers towards the bases of its wings, and which induced White to call it The golden winged pigeon (see page 43, where he has given a good figure of it); I had before found the same species at Cape Die-

men.

There we also caught many penguins, of the species called aptenodyta minor, and which Captain Cook likewise met with at New Zealand. They were in the same manner concealed in very deep holes in the rocks, from whence it was frequently very difficult to expel them.
The summit of one of the highest mountains, which I visited this day, for the first time, was formed of calcareous stone disposed in strata almost horizontal, similar to those which I had before met with on those heights. It was of a very fine grain, with some few small cavities. I did not there observe any shells. It may be presumed, that that conformation was the effect of a slow deposition of calcareous matter in a state of solution.

The change of the soil presented me with some plants, which I had not yet found.

I gathered a new species of very tall (faillante) eucalyptus, of which the following is a description:

The most elevated twigs of that shrub, are not above thirteen feet in height. They are smooth, are furnished, chiefly towards the extremity, with leaves, alternate, oval, elongated, slightly bent, and about four inches in length.

The flowers are sessile, and generally eight or ten in number, at the extremity of a common peduncle, about an inch and one-fifth in length, having all the characters of the genus eucalyptus. Their stamens, which are very numerous, have long filaments of a yellow colour. The style projects a little over the stamina.

The calix is very much elongated, and is pushed
pushed outwards by the stamina, in proportion as they are developed, and it falls when they have acquired their full growth.

The capsule is open at top, and furnished with three cells and sometimes four. It is surmounted by a small portion of the base of the style, which is divided into as many parts as there are cells.

Every cell contains a great number of angular seeds.

The form of the calix has induced me to give it the name of the *eucalyptus cornuta*.

Explanation of the Figures. Plate XVII.

*Fig.* 1. A branch of the *eucalyptus cornuta*.

*Fig.* 2. A flower disengaged from its calix, in order to expose to view the stamina and the style.

*Fig.* 3. A flower, whose detached calix still envelopes the stamina.

*Fig.* 4. The calix.

*Fig.* 5. The ovarium.

*Fig.* 6. The capsule.

After having resolved to pass the night on shore, we fought for a commodious retreat, and found at last an excavation in a rock, where we were for some time perfectly sheltered from the wind and the rain which overtook us at the close of the day. The cold was sufficiently keen to induce us to kindle a fire, and as we had not much provisions,
visions, after I had chosen from among the birds I had shot, those which I wished to preserve for my collection, I gave the rest to my companions to be broiled. We were expecting to make a hearty supper, and to sleep soundly, when all on a sudden, the wind chopped about and blew directly into our grotto, which we were immediately obliged to abandon, to avoid being stifled by the smoke of our fire. This change of weather made us regret that we had not returned on board; for the wind was so strong as to extinguish our fire, before our penguins were sufficiently broiled, but yet we found them very good.

At this repast, the ample supply of water, which we had brought from the top of the mountain, agreeably reminded us, that here at least, we could drink without restraint.

16th. At day-break I advanced towards the south-west. Among many other vegetable productions, I discovered at the base of the mountains, in a marly soil, a leguminous plant, which ought to be ranked among those the corolla of which is papilionaceous, and the filaments of their flamina separate from each other.

It forms a new genus, which I call chorizema.

The calix is in one piece, and divided into four parts on its borders. The upper division is large, hollowed, and longer than the rest. The three
Chorizema Hiepfolia.

[Image of Chorizema Hiepfolia plant with annotations and a label at the bottom.]
three lower ones are equal among themselves, strait and terminated by a point.

The superior border of the vexillum is hollowed, and almost entirely covers the alæ of the carina.

The stamina, which are fix in number, are all separated from one another.

The ovarium is oval, elongated, and terminated by a recurvated style.

The pod is oval, and filled with a great number of black and almost spherical seeds.

This plant is perennial, and its leaves are simple, alternate, sessile, coriaceous, long, dentated, and have two little spines for stipulae.

The form of the leaves has induced me to delineate this species, under the name of chorizena elicifolia.

Explanation of the Figures. Plate XXI.

Fig. 1. The plant.
Fig. 2. The flower.
Fig. 3. The expansion of the petals.
Fig. 4. The stamina; the corolla and the calix having been removed.
Fig. 5. The ovarium.
Fig. 6. The pod.

Very early in the morning the Esperance had sent a boat to the main land, with a view to some astronomical
astronomical observations. Citizen Riche had also landed there. The rendezvous was fixed for two o'clock in the afternoon, at the landing place; but the boat's crew waited in vain till seven in the evening, when they were obliged to return to the ship, from their want of provisions, and the dangerous situation of the boat, if the surge had risen ever so little. They left upon the beach a written note, acquainting Citizen Riche, in case he should return thither, that they would return and take him off very early the next morning, if the weather would permit.

The geographical engineer, who had been sent to survey the little islands, returned in the evening, having determined the position of more than twenty of them, scattered in the space of a degree in longitude, and as much in latitude. He landed in several places, without finding a commodious watering place, and the only rill of fresh water which he discovered could scarcely furnish a sufficiency for the daily consumption of the ships. But he had found an anchoring place, behind the point of the main land, which bore from us, E. N. E. but it was not so deep as that which we occupied.

The discoveries of Nuyts terminated at this archipelago. We were astonished at the precision with which the latitudes had been determined by
by that navigator, at a time when nautical and astronomical instruments were so imperfect. I ought to extend the same observation, to almost all those ascertained by Lewen on this coast.

For some days the winds had blown from the east, inclining to the north in the morning, and to the south in the afternoon. The sands, strongly heated by the solar rays, caused this diurnal variation. The equilibrium of the atmosphere was not affected by those winds, and hence the mercury in the barometer commonly stood at 28 inches, 3 or 4 lines.

17th. This day the weather being favourable, a boat was sent in quest of Citizen Riche. That naturalist, enraptured with the riches and novelty of all the productions of that region, which no observer had hitherto visited, had doubtless been so absorbed in admiration of them, that he had quickly lost his way; and he had not yet returned to the appointed rendezvous.

When advancing in the direction which he was seen to take on the preceding day, our people saw, at a small distance, some savages, with whom, however, any communication was impossible; for they always fled when our people offered to approach them.

The situation of Riche was so much the more alarming, as he had been absent nearly a day and a half,
a half, and as we knew that he had landed upon that sterile soil without provisions.

The boat, which returned about two o’clock in the afternoon, brought the dismal intelligence that he was not to be found. Captain Huon immediately waited on the Commodore, in order to concert with him the measures, which it would be advisable to take, on this disagreeable occasion. The Commodore having sent for the naturalist Deschamps and me, Captain Huon told us the methods he had taken to recover our unfortunate colleague; stating to us the dangers to which he must necessarily be exposed, in advancing alone into the interior country, where, perhaps, he had fallen by the attacks of the savages; in short, he said, he could not but apprehend the most fatal event, believing it to be impossible that he could willingly have absented himself so long.

The nature of those burning sands, which are totally destitute of water, rendered all the conjectures, which we could form concerning him, still more melancholy.

As our stock of water was partly consumed, and we had found no means of renewing it, at that anchoring-place, Captain Huon, after representing to us the disadvantages of prolonging our stay, added, that it was evident any farther search could only injure the expedition, without expressing
expressing the least hope of finding our unhappy associate.

Deschamps, upon whom those arguments had the desired effect, espoused the opinion of the Captain, and seconded his proposition for failing, by declaring that it could not be dissembled, that we could now do nothing more than lament the loss of our friend.

Those probabilities had not the same weight with me. But it was necessary for me to persuade the sailors; and I employed what I thought the most proper argument for that purpose, by citing, in support of my opinion, an instance taken from the voyages of the most celebrated of navigators. I reminded them that, in December 1777, two sailors strayed from Captain Cook, into the island of Noel, one of whom was absent a whole day, and the other eight and forty hours; that Cook had ordered several detachments to search for them with the greatest care; that Noel, however, was but a little low island, scarcely covered with shrubs, whereas New Holland, where Riche had lost himself, was an immense region. I requested, therefore, that the same time should be allowed to search for our unhappy friend, as Captain Cook had employed in seeking one of his sailors.

This reasoning produced all the effect which I could desire.

A boat
A boat was immediately dispatched, from each ship, for the main land; and I had the pleasure to be of the party, whose business it was to use every method, and to make every effort, to recover our unfortunate mess-mate.

The Commodore ordered guns to be fired every half hour, to enable Riche, if still alive, to direct his steps with the more certainty towards the anchoring place.

The wind favoured us, and, in a short time, we made good our landing.

After having advanced into the country, in different directions, we returned to the landing place, on the approach of night.

We traversed a track wholly covered with sand, where we found extensive spaces absolutely destitute of vegetables. But I saw with surprize, on those distant shores, the grass known by the name of *spinifex squarrosum*; and thus had a new and an admirable instance of the facility with which plants, which grow on the sea shore, diffuse themselves to prodigious distances.

In those arid wastes, grows a fine plant which nearly resembles the *iris*, and which naturally classes itself with the genera *dilatris* and *argolasia*. It forms, however, a new and a very distinct genus, principally by its irregular corolla.

I have
Anigozanthos Rusa
I have delineated it under the name of anigozanthos.

Its flowers have no calix.
The corolla has the form of a tube, the edges of which are divided into six unequal parts recurved inwards. It is covered with reddish pili.

The stamina, which are six in number, are inserted under the divisions of the corolla, which is placed upon the ovarium.

The style is simple, as well as the stigma.
The capsule is nearly spherical, and of the same colour with the flower by which it is furmounted. It has three cells filled with a great number of angular seeds.

The top of the stalk is covered with reddish pili, like the flowers.

I have denominated this species anigozanthos rufa.

Explanation of the Figures, Plate XXII.

Fig. 1. The plant.
Fig. 2. The flower.
Fig. 3. The flower divided longitudinally, and expanded, in order to expose the stamina to view.
Fig. 4. The stamina.
Fig. 5. The capsule.
Although in the day, the heat was very powerful.
ful upon the land, we experienced a very keen cold in the night.

As soon as day began to dawn, we divided ourselves into two parties. That which I accompanied advanced towards the north, and the other towards the north-west.

Directing our steps by the compass, we had proceeded at least 5,100 toises across plains of calcareous sand, heaped up in different places, when we arrived in a very narrow bottom, where the verdure of the plants formed a very pleasing contrast with the dismal places we had traversed, and they grew in a very rich soil. There we saw some cavities which afforded us a little fresh water, but they were too distant to be of any use to the ships.

Continuing our route, I observed in the midst of those sands, some rocks of a calcareous nature, where I collected some fine plants, which still resisted the aridity of the soil. Among the great number of the tribe of the protea, which I observed there, I shall mention two species of banksia, which I call banksia repens, and banksia nivea.

The first has a creeping stalk, thickly covered with reddish down, terminated by flowers joined together in a conical form.

The leaves are pinnatifid, and when very young,
Banksia Nivea.

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are coated with the same down as the stalk; so that one would take that plant for some species of acrostichum; but when more advanced in age, they are very smooth.

Explanation of the Figures, Plate XXIII.

Fig. 1. The plant.
Fig. 2. The flower.
Fig. 3. The corolla divided transversely, and viewed through a magnifying glass.
Fig. 4. The stamena magnified.
Fig. 5. The ovarium, with the style and the stigma.

The species of bankisia, which I call nivea, is remarkable for its long leaves, dentated very deeply, and white on the under side.

Explanation of the Figures, Plate XXIV.

Fig. 1. The plant.
Fig. 2. The flower.
Fig. 3. The corolla expanded.
Fig. 4. A part of one of the divisions of the corolla, viewed through a magnifying glass.
Fig. 5. The stamen, viewed through a magnifying glass.
Fig. 6. The ovarium surmounted by its style.

I also found there the eucalyptus cornuta, and many other plants of the myrtle tribe.
At the end of four hours very quick walking, we arrived on the banks of a great lake which has a communication with the sea.

The natives had recently made fires in many places which we passed.

We saw no kangarous; but their excrements, which we saw everywhere in great abundance, convinced us that that quadruped has multiplied greatly on that coast. We also observed excrements which very much resembled those of the cow; but we did not see the animal to which they belonged. We saw in the sand the prints of a cloven hoof, more than three inches in breadth. There is no doubt that that region is inhabited by animals much larger than the kangarous. It affords but little food for birds; and accordingly I found none in this excursion except two species, a *musictera*, which I afterwards met with in the Moluccas, and the fine species of red crested cockatoes, *Psittacus moluccensis*, which are met with in the same islands, in flocks of many hundreds. When I attempted to approach them, they always removed to a great distance, flying rapidly, with sudden starts, and emitting loud and very disagreeable shricks.

The banks of the lake, which we followed for some time in approaching the sea, are somewhat marshy. The lake extends a great way into the land;
land; for the other party, who proceeded towards the north-west, also arrived on its banks. Some of them came to our rendezvous to acquaint us, that they had observed on the very edge of the lake, towards the part farthest from the sea, the prints of shoes, which left no doubt that Riche had passed that way; but that the marks of naked feet which appeared near his, gave grounds for apprehending that he had been dragged by the savages into the interior country. What tended to give still more probability to this conjecture was, that they soon found his handkerchief upon the sand, and a little farther on, one of his pistols. At a small distance, they saw a little smoke from a deserted fire, around which they found some bits of paper, on which they recognized the handwriting of Riche; and besides, the sand still bore the marks of one who had been resting himself on the spot.

We returned towards the landing place, lamenting the fate of our unfortunate mess-mate, and had very nearly reached the shore, in a hopeless state of mind, when we saw one of those who had been left to take care of the boat, running to meet us with the pleasing intelligence, that Riche was still alive, and that he had just arrived at the landing-place, extenuated with hunger and fatigue. He had been above fifty-four hours on
shore, with no other provision than some bits of biscuit. The famished state to which he was reduced, rendered it imprudent for his friends to allow him to indulge his appetite, and in giving him food we tried gradually to bring into action the digestive powers of his stomach. His appearance, at first entirely discomposed, became by degrees re-animated. When he had recovered from the state of stupor into which he had been thrown by so long a privation of nourishment, he told us that, near the fire which we had found still burning, there was a little rill of fresh water, at which he had quenched his thirst; and that, by dint of searching among the plants, analogous to those which yield esculent fruits, he had discovered a shrub of the tribe of plaqueminiers which furnished him with some small fruits; but in a quantity insufficient for the supply of his necessities. On the first day of his absence, he found the spring, near which his things had been picked up. There he passed the night, and the next day he spent wholly in seeking the anchoring-place, without being able to find it. In all this painful peregrination, he had not met with a drop of water; but chance happily conducted him in the evening to the same spring, where he passed the second night. Having seen savages at a distance, he had attempted to obtain some intercourse with them,
them, in order to know their manner of subsistence, and to ask them for some food; for he was violently tormented with hunger; but they always fled, when he was advancing towards them. They frequently set fire to the dried grass which was diffused over the sand. In that climate, men not being under the necessity of wearing cloaths, they were all absolutely naked.

Some cazoards and kangarous of the large species, were the only animals seen by Riche. Although in a state of weakness, he had carried for two days a numerous collection of very interesting productions; but, during the third day, his strength sunk so rapidly, that it was with great difficulty he could trail himself along the shore, in quest of the ships, and in those circumstances, he was obliged to abandon his whole collection, not being able to reserve even the most precious articles.

As soon as he had a little recovered his strength, we conveyed him towards the ships. It was to little purpose that we made the signals agreed upon to announce our success. Every one was so convinced before hand of the inutility of our researches, that they did not understand the meaning of them, till we had come close to the ships, and Riche was seen in the midst of us. The horrible situation in which he would have been,
if the opinion entertained by some persons concerning him had prevailed, ought to be an alarming and dreadful lesson to captains and naturalists who undertake long voyages; for, if we had quitted that anchoring place the day before, his existence would have been terminated by a most frightful death, in all the anguish of the most terrible despair.

Though it was demonstrated by this fact, that it was possible for a man to lose himself for more than two days in that country, the greater part of our sailors chose to be of a different opinion; some of them being more willing to believe and to say, that Riche had designedly absented himself; as if it could be believed, that he would wantonly expose himself to all the horrors of famine.

During our stay at that anchoring place, we could not fish with the seine. But on board the ships, some fishes were caught with the hook, among which were the *labrus cyprinoides*, and several new species of the genus *perca*.

We lay at anchor, in latitude 33° 55' south, and longitude 110° 82' east.

The variation of the compass was found to be 6° west.

19th. All the boats having been got on board over night, we waited for the morning to weigh anchor,
anchor, if the wind should serve. It shifted from the N. E. to the E. S. E. and at six o'clock A. M. we were under sail.

Passing to the northward of the little island which had sheltered us, we advanced into the open sea.

At noon, being in latitude 34° 12' 54" south, and in longitude 119° 21' east, the most southerly of the rocks bore E. 2° S. distant about 3,400 toises, and the most northerly land bore N. 1° E.

For some days, east winds prevailed, which made us apprehend great difficulties, in exploring that coast; and analogy gave much probability to that supposition; for at the Cape of Good Hope, which even extends some degrees farther to the southward than that part of New Holland, east winds also predominate at the same season of the year.

24th. About noon this day, we had only reached 34° 24' south latitude, and 120° 22' east longitude; and the little islands at which we had anchored were still in sight.

The east wind blew very fresh in the afternoon, but in the evening, we had a hot suffocating breeze from the land. Immediately we were enveloped in a very thick fog, the air being loaded with a humidity which pervaded every thing. I can compare it to nothing so properly, as to those fogs
fogs which southerly winds diffuse over the Mediterranean, near the African coast, in a very hot season. The sands, heated by the solar rays, had communicated to the atmosphere an additional power of retaining water, and we found ourselves immersed, as it were, in a vapour bath of a moderate temperature.

About eleven at night, we lost sight of the Esperance, which did not answer the signals we made, till three hours afterwards, when we heard a very distant report of a gun.

25th. The breeze was weak: we plied close to windward; and when day-light appeared, we saw the Esperance at a small distance. The wind soon began to blow forcibly from the south-west; and for some time, we went at a great rate towards the east.

At noon, we were in $34^\circ 14'$ south latitude, and $121^\circ$ east longitude; and two hours afterwards, we perceived behind some little islands, a large bight, which appeared to offer us excellent shelter.

The natives announced their presence by the smoke of fires, a great way from the shore, and from each other.

The barometer having descended still lower than when it foretold the tempest, which forced us to anchor in Legrand road, we stood off shore,
to avoid being embayed on that dangerous coast. We afterwards lay to, for the whole night, keeping the ship's head towards the south and S. S. E.

There was a very heavy sea: the wind blew impetuously from the S. W. and the W. S. W., and increasing gradually, it raged with the greatest violence for almost the whole night, raising the waves to a prodigious height. We had never yet been so violently tossed by a tempest.

The south-west winds there are almost always impetuous, and add very much to the dangers to which ships are exposed, in coasting from west to east, along that low shore, frequently lined with shoals; and there is danger of their not being perceived soon enough to be able to double them.

When day-light appeared, we stood in for the land. A wind from W. S. W. brought us back fine weather.

Towards noon, we were in latitude 33° 42' south, and longitude 122° 4' east, when we saw from the mast-head, beyond several little islands, a part of the coast, extending from west to north-west, and which still appeared low. Presently it assumed the appearance of a bank, raised in a very uniform manner, trending towards the east, and intercepting our view of the land. At the approach of night, we clung off shore, and afterwards lay to.

27th.
27th. The next morning, we continued to follow the coast, and about three o'clock P. M. our distance from it was but 1,000 toises. It uniformly presented the same appearance, for more than 15,400 toises. We perfectly distinguished thin horizontal strata, of the same form with the calcareous rocks, which I found in Legrand road.

I am inclined to believe, that this interruption of mountains, through so great an extent, is the work of the waters, which appear to have undermined the strata, making them rush into the sea, where they form a rampart which renders that coast inaccessible. We observed little slopes, which they had formed in rushing down, but which it would have been very difficult to climb. We had approached it so nearly, that it became necessary to get into the offing, where we found twenty fathoms of water, with a bottom of calcareous sand.

28th. Very early in the morning, we saw the land trending towards the north-east, and with the wind at south-west, it was easy for us to follow all its windings. It always presented the same steep rampart, which rose very uniformly to the height of about forty-five toises, and presented, from its top to the level of the sea, the parallel strata of which it is composed.

About
About noon, the coast inclined a little towards the south-east, and changed its appearance, being then interpersed with little sandy hills, which, falling with a gentle declivity, were bounded by a very low beach. The sea then assuming a greenish appearance, even in the distant offing, indicated a change of bottom; but a line of fourteen fathoms could not reach it.

The wind soon began to blow very fresh. Experience had taught us to dread the south-west winds, on that coast, which had almost always become impetuous; and therefore we stood S. E. ¼ E. to get into the offing.

The want of water began to be severely felt on board of both the ships, and it was evident that if we could not immediately find a supply of that article, we must in a short time abandon that coast. But if we had begun with its most easterly part, and coasted it from east to west, we would have had the advantage of getting a full supply of water at Cape Diemen; whereas, the half of our's was consumed, when we began to explore the coast, at its most westerly point. This consideration, among many others, is a strong inducement to coast it from east to west. Besides, the impetuosity of the west winds exposes ships to the greatest dangers; while the east winds, which
which are the most constant, never blow with violence.

29th. We were but 1,020 toises from the coast, when the lead indicated a bottom, sometimes of coarse sand, sometimes of rock, the depth varying from nine to twelve fathoms.

At noon, our latitude was 32° 19' south, and our longitude 124° 32' east, the nearest land bearing N. N. W. distant 340 toises. It set by compass from N. 69° W. to E. 20° N. In a little time, it reassumed the form of a rampart, like that which we had already coasted; but with this difference, that its upper part rose by a gentle elevation into the interior country. We observed some shrubs, which did not seem to be in so suffering a state, as those which we had seen hither to on the same coast.

The sea was covered with the species of fucus, called fucus natans, and by the French raisin de mer.

January 1st, 1793. Having been opposed by the easterly winds, we had only reached, about noon this day, 32° 8' south latitude, and 126° 42' east longitude, when we saw a fog rise, which every where represented a flat shore; and so striking was the illusion, that persons who came from between decks, thought that we had enter-
ed into a vast basin. We were, however, at the distance of 10,200 toises from the coast, which the fog concealed from our view.

In the evening, the sky lowered on the land side, and flashes of lightning darted from the thickest clouds. Then the fog, which encircled the horizon, dissipated, and the wind shifting to the west, became very fresh.

4th. In the evening, Captain Huon acquainted the Commodore with the damage which the rudder of the Esperance had sustained. At the same time, he told us, that on board of his ship, they had long been reduced to an allowance of three quarters of a bottle of water per day; that they had been obliged to discontinue the distribution of antiscorbutic draughts; and that thirty butts of water then composed the whole stock on board the Esperance.

5th. About six o'clock this morning, our Commander sent Captain Huon a letter, letting him know the resolution which he had come to, respecting the situation of the two ships.

At noon, our latitude was 31° 52' south, and our longitude 129° 10' east, and we had sight of the land from E. to N. 10° W. being 5,100 toises from the nearest part of it.

As soon as the boat was hoisted in, we stood close
close on our course on the larboard tack, with the wind at E. S. E., steering for Cape Diemen, and abandoning an extremely arid coast, along which we had held our course, above 320,000 toises, in the general direction of W. ¼ S. W. to E. ¼ N. E. Fifteen months before us, Vancouver, equally opposed by the east winds, had been forced to abandon his enterprise, after having explored only about 360,000 toises of the coast.

Before we approached that coast, we did not expect to find boisterous winds so frequent, especially at that season, which might have been supposed the finest, in those latitudes, the sun having been then above two months in the southern hemisphere. Is this impetuosity of the winds caused by the prodigious difference, which exists between the cool temperature of the atmosphere over the sea, and the ardour of the solar rays concentrated by the burning sands on the main land?

The currents, experienced on that coast, always conform to the direction of the winds.

The Esperance was in still greater distress than we. Besides, that frigate had sustained several injuries, when left at anchor, and needed an excellent harbour, where she might receive all the necessary repairs.

At
At four o'clock no land could be seen, even from the mast-head; and, at the same time, a line of thirty fathoms reached a bottom of fine sand, mixed with broken shells and lythophites. The lead was hove every two hours, and each time it was found that the depth increased two or three fathoms; insensibly augmenting with our distance from the coast.

6th. At six this evening, being then 102,000 toises from the land, a line of seventy-two fathoms indicated a bottom of very fine sand mixed with gravel; and from that moment, no bottom was found, though we founded at different times. This gradual augmentation of the depth of the sea near that coast, proves that the land subsides under the water by an almost insensible declivity, and gives us reason to believe, that it rises in the interior by an acclivity equally gentle, so that those heights are too distant to be perceived from the coast.

8th. We were carried on the 7th, 23° to the westward, and this day 21° in the same direction. At noon, we were in 35° 30' south latitude. The rapidity of those currents towards the west, perhaps depends on some channel, which separates the lands of New Holland and those of Cape Diemen, between Point Hick and Furneaux's Islands.
Islands. Captain Cook, in exploring the eastern part of New Holland, saw no land in that space, the extent of which is about 102,000 toises, and believed it to be the entrance of a great gulph. Perhaps on that part of the coast, a channel commences, which, after forming different sinuosities, opens westward in the same latitude, in which we experienced such strong currents.

We had no westerly winds, till we reached the fortieth degree of south latitude; and they carried us to Cape Diemen, varying from the south-west to the north-west.

About ten o'clock, we saw at a small distance, a great number of cetaceous fishes, of a new species, which appeared to me to be of the genus *delphinus*. They were easily distinguished by a large white spot, behind the dorsal fin. The upper part of the body is of a blackish brown, and the belly white. The largest were above nine feet in length. They were preceded by a great number of dolphins (*delphinus delphis*), and they swam in shoals like them, making, with great rapidity, nearly the same movements with those cetaceous fishes.

We lay to during the night, designing in the morning to make the land, a degree lower in latitude than Cape Diemen. We hoped to discover
cover there a harbour which would afford great advantages to future navigators, who might intend to reconnoitre the south-west coast of New Holland, by availing themselves of the south-west wind.

19th. By half past four in the morning, we saw the land, extending from N. E. ¾ N. to E. ¾ S. E. the nearest part bearing E. N. E., distant 15,400 toises.

For some time we stood on the starboard tack, close upon the wind, which blew from south-west. Two hours afterwards, when we were not more than 7,800 toises from the shore, a line of seventy-five fathoms indicated a bottom of very coarse sand, and broken shells.

The shore we saw was steep, and at a little distance, was a chain of mountains, of moderate elevation, which nearly followed the same direction. The land was almost wholly covered with large trees.

At noon, we were in 42° 51' S. lat., and 142° 49' E. long. The land to the north-east, could only be seen through a thick fog, which obscured the whole horizon.

20th. The variation of the compass had very rapidly increased since it became easterly; for it was now observed to be 7° easterly.
The coast presented no bight, in which we could hope to find good anchorage. At noon, we had arrived in latitude 43° 22' S., and longitude 143° 28' E., being but 5,100 toises distant from the land, which, from N. 7° W. to E. 23° S. always presented very high mountains to our view.

At six o'clock in the evening, we doubled the southern cape, at the distance of 10,200 toises. It is remarkable, that in the different windings of the coast, which we followed, we had always the wind a-ftern. It appeared to me, that the high mountains, opposing a barrier to the wind, forced them to observe the direction of the coast.

All the other mountains were surpassed in altitude, by that which we saw covered with snow, when we anchored in Port Dentrecaustexaux, the preceding year. But as this was a much warmer season, we observed snow only in great excavations, where it was screened from the solar rays, for a considerable part of the day. That mountain is remarkable for a little conical peak, which forms its summit.

At the approach of night, we passed very near the Mew-stone, and soon after we brought to, before a very fresh breeze at west.

We found several times with a line of eighty-three fathoms, without reaching the bottom.
As we were embayed upon the coast, by a wind at S. S. W. we were obliged to tack.

21st. At noon, we were in latitude 43° 44' S. and longitude 144° 10' W., when the Mew-stone bore W. 16° 30' S., the Eddy-stone S. S. E. 1° E. and the nearest land about N. N. W. at the distance of 1,540 toises.

22d. Very early this morning, we were at the entrance of the Bay of Tempefts. The wind blowing from the E. S. E. hindered us from entering Dentrecastéaux's Strait, where we intended to anchor in a bay which we had explored the preceding year, and which was extremely commodious for giving our ships all the necessary repairs. But we were obliged to enter the Bay of Rocks, a name, which some rocks almost level with the water, situated near its middle, had induced us to give that bay, which is the first on the larboard, on entering the Bay of Tempefts, and lies in the direction of north-east and south-west. The Esperance anchored there in very good time.

Having proceeded up this bay, about one-third part of its length, we found but sixteen feet of water; and consequently it would not have been prudent for us to go farther, without founding all the way, which was the easier to be done, as
we had several boats afloat. Cretin, who had taken foundings in this road the preceding year, told our Commander that he would not find less water in it than sixteen feet; and this prevented all farther search. That assertion, however, ought not to have been entirely adopted; for, besides that Cretin had not founded the bay so deliberately as to be able to inform us respecting its depth within a foot or two, he was in doubt whether or not he had performed that operation at low water, a circumstance which would produce a difference of at least six feet, and consequently would not have left sufficient water for our ship. Notwithstanding these considerations, we did not hesitate to steer to the larboard, and to approach still nearer to the low shore. The consequence was, that we ran a-ground, but fortunately upon a sandy bottom. This accident happened at half an hour past nine o’clock. The wind blowing in heavy squalls, from the high mountains, drove the ship violently towards the shore, and fixed her deeper and deeper into the sand.

The Esperance immediately sent her long-boat and her pinnace, which, in conjunction with our own boats, made vain efforts, on the starboard side of our ship, to tow her off. It then became necessary to carry out an anchor to the W. N. W. and
and to fix the ship by a hawser, to prevent her from being carried nearer the land. Next, in order to lighten her, the salt-water, with which most of our casks were filled, was emptied into the hold, and all the pumps set a-going to pump it out. As soon as we had discharged this ballast, we set the capstan to work upon a large anchor, which had been put down close to the first; but, with our utmost efforts, it was near one P. M. before we could disengage the ship from the sand-bank, and get her fairly afloat.

END OF THE FIRST VOLUME.

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Ulloa's voyage to South America—vol. 1, page 196—go on to 178—
Part of Florida—on this coast is found that exquisite purple so much esteemed by the ancient by the shell fish growing on the rocks, something larger than a nut is.

The Limetree, described by Cotton, in his history of Somersetshire, said to be found at Portlock, this equally plenty on the coasts in the parish of Old Sleev, St Brevno, and so on to the Eastward. From the above act, by Ulloa's, the two methods may be compared so as to produce, perhaps, the proper method of obtaining the dye.

Page 194—see a curious act of an alligator, continued to the end of the chapter. Bottom of page 127 read of the horrible death of the Tamaricos de Cintorenas, and the mantles or quilts who make their fire cause a main & instantly squeeze him to death, when diving for them.

Page 207 hazard of travelling—great judgment of the mules on which the rider's life depends. One may say again...
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