

John Macgillivray



*Narrative of the Voyage
of H.M.S. Rattlesnake,
1846-50, Volume 1*

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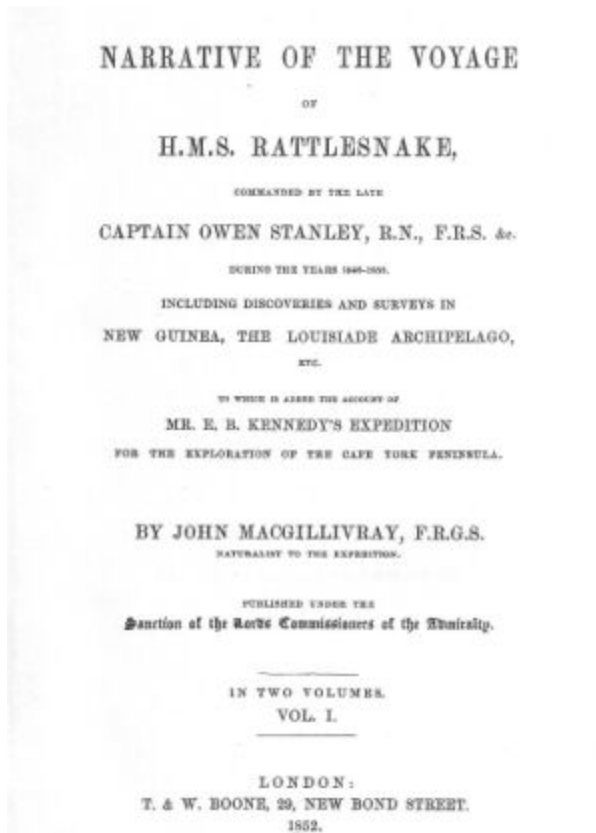
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LONDON:

T. & W. BOONE, 29, NEW BOND STREET.



**TO
MRS. STANLEY,
THIS WORK IS DEDICATED
AS A TRIBUTE OF RESPECT TO THE MEMORY OF**

**HER SON,
UNDER WHOSE DIRECTION THE PRINCIPAL
OBJECTS
OF THE
VOYAGE OF THE RATTLESNAKE
WERE SUCCESSFULLY ACCOMPLISHED.**



PREFACE.

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It was originally intended that an account of the Surveying Voyage of H.M.S. Rattlesnake should have been undertaken conjointly by the late Captain Owen Stanley and myself, in which case the narrative would have been constructed from the materials afforded by the journals of both, and the necessary remarks upon hydrographical subjects would have been furnished by that officer, whose lamented death in March, 1850, prevented this arrangement from being carried out. Not having had access to Captain Stanley's private journals, I considered myself fortunate, when the Lords Commissioners of the Admiralty--in addition to sanctioning the publication of my account of the Voyage in question--directed that every facility should be afforded me in consulting the manuscript charts and other hydrographical results at their disposal, and to Rear-Admiral Sir F. Beaufort, C.B., Commander C.B. Yule, R.N., and Lieutenant J. Dayman, R.N., I beg to express my thanks for the liberal manner in which they carried out their Lordships' intentions.

To the other gentlemen who have contributed Appendices to this work--George Busk, Esquire F.R.S., Dr. R.G. Latham, Professor Edward Forbes, F.R.S., and Adam White, Esquire, F.L.S.--I have also to offer my best thanks. It also affords me great pleasure to record my obligations to T. Huxley, Esquire R.N., F.R.S., late Assistant-Surgeon of the Rattlesnake, for the handsome manner in which he allowed me to select from his collection of drawings those which now appear as illustrations; and I may express the hope, which in common with many others I entertain, that the whole of his researches in marine zoology may speedily be laid before the scientific world. My own collections in Natural History have been submitted to the examination of various eminent naturalists. Many of the novelties have already been described, and the remainder will appear from time to time.

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H.M.S. Rattlesnake, one of the old class of 28-gun ships, was commissioned at Portsmouth on September 24th, 1846, by the late Captain Owen Stanley, with a complement of 180 officers and men. The nature and objects of the intended voyage will best be conveyed to the reader through the medium of the following instructions from the Admiralty, for the use of which I am indebted to Lieutenant C.B. Yule, who succeeded to the command of the Rattlesnake, upon the death of our late lamented Captain, at Sydney, in March 1850, after the successful accomplishment of the principal objects of the expedition.

BY THE COMMISSIONERS FOR EXECUTING THE OFFICE OF LORD HIGH ADMIRAL OF THE UNITED KINGDOM OF GREAT BRITAIN AND IRELAND, ETC.

Whereas, it being the usual practice of vessels returning from the Australian Colonies, or from the South Sea, to proceed to India through Torres Strait; and most of those vessels preferring the chance of finding a convenient opening in the Barrier Reefs to the labour of frequent anchorage in the Inshore Passage, it was thought fit to send out an expedition under Captain Francis Blackwood, to determine which was the best opening that those reefs would afford, and to make such a survey thereof as would ensure the safety of all vessels which should continue to adopt that mode of reaching the Strait:

And whereas, although that specific object was successfully achieved by the survey of Raine Island Passage, and by the erection of a durable beacon there to render it the more accessible, yet it appears that much is still to be done in those seas in order to make the approach to the

Strait more secure and certain, as well as to afford the choice of another entrance farther to the northward in case of vessels overshooting the latitude of Raine Island by stress of wind, or current:

We have, therefore, thought proper to appoint you to the command of the Rattlesnake, for the purpose of carrying out these objects; and you are here by required and directed, when that ship is in every respect ready for sea, to proceed in her to Madeira for the verification of your chronometers--from thence to Simon's Bay at the Cape of Good Hope, for a supply of water, and to land the 50,000 pounds you have been ordered to convey to that colony; then to make the best of your way to the Mauritius, to land the treasure (15,000 pounds) entrusted to your charge for that island; and having so done, to proceed to King George Sound for the purpose of carrying its exact meridian distance to Sydney, where you will lose no time in preparing for the execution of the important service entrusted to you.

The several objects of that service have been drawn up under our direction by our Hydrographer; but notwithstanding the order in which they are placed, we leave to your own discretion the several periods of their performance, and likewise the times of your return to Sydney to revictual and refit--being satisfied that your zeal in pushing forward the survey will never outstrip your attention to the health and comfort of your crew.

You will take the Bramble and her tender, the Castlereagh, under your orders, and employ them in those places which require vessels of a lighter draft of water than the Rattlesnake. They are to be attached as tenders to the

Rattlesnake, and to be manned from that ship; and such of the present crew of the Bramble as may have served five years continuously, and volunteer to remain on the surveying service in Australia, are to be entered in the Rattlesnake under the provisions of the Act of Parliament. The books of the Bramble are to be closed, and she is to be considered as no longer in commission; and you are here by authorised, after being joined by her and by the Castlereagh, to enter ten supernumerary seaman for wages and victuals in the Rattlesnake (making her total complement 190) to enable you effectively to man the said two tenders.

In stretching off from the Barrier Reefs to the eastward, in order to explore the safety of the sea intervening between them and Louisiade and New Guinea, you will have occasion to approach those shores, in which case you must be constantly on your guard against the treacherous disposition of their inhabitants, all barter for refreshments should be conducted under the eye of an officer, and every pains be taken to avoid giving any just cause of offence to their prejudices, especially with respect to their women.

A naturalist having been permitted to accompany you, every reasonable facility is to be given him in making and preserving his collections.

In the event of this country being involved in hostilities during your absence, you will take care never to be surprised; but you are to refrain from any act of aggression towards the vessels or settlements of any nation with which we may be at war, as expeditions employed in behalf of

discovery and science have always been considered by all civilised communities as acting under a general safeguard.

You will consider yourself under the command of Rear-Admiral Inglefield, the Commander-in-Chief of Her Majesty's ships and vessels on the East India station, while you are within the limits of that station; and we have signified to him our desire that he should not divert you from the survey, nor interfere with your proceedings, except under the pressure of strong necessity; and that upon all fit occasions he should order you to be supplied with the stores and provisions of which you may stand in need; and all officers senior to yourself, with whom you may fall in, are hereby directed to give you any assistance which may be requisite.

Notwithstanding the 16th article of the 4th section of the 6th chapter of the Admiralty Instructions, you are, besides your reports to your Commander-in-Chief, to send brief accounts to our Secretary of your proceedings, state, and condition: and you will make known to him, in due time, the nature and quantity of any supplies of which you may be absolutely in want, and which may have to be forwarded to you from England.

With our Hydrographer you are by every opportunity in your power to keep up a constant correspondence; you are to report to him in full detail all your proceedings; and you are to transmit to him, whenever possible, tracings of all charts and plans that you may have completed, accompanied by sailing directions, and with notices of any facts or discoveries which may be of interest to navigation.

Having completed the service herein set forth, you are to return in the Rattlesnake, along with the Bramble, to Spithead, when you will receive directions for your further proceedings. If the Bramble should, however, by that time be in an unfit state to undertake the voyage to Europe, it may perhaps be prudent to dispose of her, under the sanction of the Commander-in-Chief.

In the event of any unfortunate accident befalling yourself, the officer on whom the command may in consequence devolve, is hereby required and directed to carry out, as far as in him lies, the foregoing orders and instructions.

Given under our hands, this 1st December 1846.

Signed:

CHARLES ADAM.

JNO. D. DUNDAS.

To OWEN STANLEY, Esquire,
Captain of her Majesty's Surveying Vessel Rattlesnake, at
Plymouth, By command of their Lordships,
Signed: H.G. WARD.

HYDROGRAPHER'S INSTRUCTIONS.

In connection with the preceding general instructions to Captain Stanley, it will be necessary to give a portion of those more explicit directions furnished by the Hydrographer, Rear-Admiral Sir Francis Beaufort.

EXTRACTS FROM HYDROGRAPHIC INSTRUCTIONS FOR CAPTAIN STANLEY.

On your arrival at Sydney you should take the earliest opportunity of communicating with Lieutenant Yule, in order

to learn how much has been executed, by the Bramble and her tender, of the orders which he received from Captain Blackwood, and you will no doubt avail yourself of his long experience in those seas in digesting your plan of future operations.

A letter from the Colonial Office having recently apprised their Lordships that it is the intention of her Majesty's Government to form a new settlement at Hervey Bay, and having requested that it may be duly examined with that view, your first undertaking, after leaving Sydney, should be to repair to that place, and to make an efficient survey of the whole bay, extending it down through the channel into Wide Bay, and marking the best anchorages, the most convenient landing-places, and the several parts where water may be found. And as it appears that Colonel Barney, R.E. is engaged in the same inquiry, it will be prudent to act in concert with him, and to give him a copy of such parts of it as may suit his purposes.

In your way to this district, and indeed on every part of the shores of Australia, you should lose no fair opportunity of verifying the positions--of multiplying the soundings--and of improving the smaller details of the coast as laid down by Captain P.P. King in his excellent Survey, but which he had not time or means to effect with the same accuracy that will be in your power. By carrying on this system of correction and improvement in our present charts from Hervey Bay along the narrow navigation which is generally known by the name of the Inshore Passage, between the coast and the Barrier Reefs, a very great benefit will be conferred on those masters of vessels who would be the more readily inclined

to adopt that channel, if certain parts of it were so clearly delineated, and the soundings so spread on either side of the tracks, that they could sometimes continue under sail during the night. However necessary it was, and is, to contribute as much as possible to the safety of those vessels who choose the outer voyage by the Barrier Reefs, it is not the less our duty to facilitate the navigation of the Inshore Passage to all vessels who prefer its tranquillity and security to the risk of the former; and your labours for the accomplishment of this object will prove to be of peculiar importance when steam communication between Singapore and Sydney shall be established.

In the general and searching examination of those parts of the Coral Sea which are likely to be traversed by ships steering for Torres Strait, you will be obliged to regulate your movements by the periodic changes of the weather and monsoons--probably beginning to windward, and dropping gently to leeward by close and well-arranged traverses, and by spreading out your three vessels to a convenient distance apart. This great expanse of sea, which may be said to stretch from Lord Howe's Island to New Caledonia and to the Louisiade, would no doubt require many years work in order to accomplish that object; but, by dividing it into definite zones or squares, and by fully sifting those which you may undertake, a certain quantity of distinct knowledge will be gained. Navigators in crossing those zones will then be sure of their safety, and future surveyors will know exactly on what parts to expend their labours.

In carefully exploring the northernmost, and apparently the safest entrance from the Pacific, which may be called

Bligh's Channel, you will connect the islands with a survey of the coast of New Guinea, as well as with the edge of the Warrior Reef, and as there are throughout moderate soundings, you will probably be able to draw up such clear directions as will enable the mariner to use it in moderate weather by night, and to beat through it at all times. Characteristic views of the coast and hills of New Guinea, as well as of each island, both from the eastward and westward, will greatly assist him by the immediate certainty of his landfall, and will also materially add to your means of giving proper marks and bearings for avoiding the dangers.

In Torres Strait you will find much to do--not only has a new rock been discovered in the middle of the Endeavour Channel, but the water in its western opening is only four and a half fathoms, and there seems no reason for not believing that Prince of Wales Channel is safer, easier, and more direct. But before we can decide upon that point, an accurate survey must be made of it, throughout its length and breadth, including the adjacent islands, and showing their anchorages and watering-places, as well as the nature of the soil, and the kind of timber they produce, along with a full investigation of the tides.

The connection of that Strait with Bligh's Farewell should also be examined, for many circumstances may render it highly necessary that the Admiralty should be made aware of what means there are to pass from one ocean to the other, without being observed from Cape York.

On this latter Cape Government have for some time contemplated a station, and it will therefore be very desirable to fix upon a convenient but secure anchorage in

its neighbourhood. Our latest surveys do not show much promise of finding such a port; but, perhaps, inside the reefs beyond Peak Point, or more likely between Albany Island and the main, a snug place may be discovered for that purpose.

In tracing out the approach to Bligh's Farewell, you will be led to examine the southern face of New Guinea as far as Cape Valsche; but after verifying the position of this point, it will be prudent to quit the shores of that island, and not to meddle with any part of it over which the Dutch claim jurisdiction.

When you have arrived at this distant point, the south-east monsoon will probably render it necessary to repair to Port Essington for such supplies as may by previous arrangement have been sent there for you from Sydney; or perhaps unforeseen events might render it more expedient to proceed for refreshments to some of the islands in the Arafura Sea, or it is possible to one of the Dutch settlements in Java. And in either of these two latter cases you should make a complete survey of the island to which you have proceeded, or you should select any one of the eastern passages from Bally to Floris most convenient to the object you have in view, and then lay it down with precision. Of the many well-known passages between the innumerable islands of that great Archipelago, there is not one which has ever been charted with plausible accuracy; and it cannot be too strongly impressed on your mind that hydrography is better served by one accurate chart than by ten approximate sketches.

The several objects of this highly interesting expedition having thus been briefly enumerated, I have only to remind you that their Lordships do not prescribe to you the order in which they are to be executed, leaving it to your own prudence, and to your experience in those climates, so to arrange them that each part of your survey shall be complete in itself, and that each step in your progress shall be conducive to its successor.

Signed: F. BEAUFORT,
HYDROGRAPHER.

SAIL FROM PLYMOUTH.

The Rattlesnake left Spithead on December 3rd, and on the 11th took her final departure from Plymouth, which place we had called at to complete her fittings, swing the ship a second time to ascertain the amount of local attraction, and receive some specie for the Cape of Good Hope and the Mauritius. Being favoured by strong northerly winds, we reached Madeira on December 18th, after a quick, but most uncomfortable passage; during the greater part of which the main and lower decks were partially flooded, owing to the inefficiency of the scuppers, and the leaky state of nearly every port and scuttle in the ship.

ARRIVE AT MADEIRA.

December 20th.

The scenery of Madeira has been so often described by voyagers, who, from Cook downwards, have made it the first stage in their circumnavigation of the globe, as to render superfluous more than a few passing allusions. When near enough to distinguish the minor features of the island, the

terraced slopes of the mountainsides converted into vineyards and gardens studded with the huts of the peasantry, presented a pleasing aspect to visitors, whom a week's sailing had brought from the snow-clad shores of England. Here and there a whitewashed chapel or picturesque villa lent a charm to the scenery by contrasting strongly with the patches of green upon the slopes, the deep blue of the ocean, and the delicate white of the ever-changing clouds of mist which rolled incessantly along, while the rugged summit of the island, and the deep ravines radiating towards the coast-range of precipitous cliffs, gave an air of wildness to the scene.

FUNCHAL.

The town of Funchal, said to contain about 25,000 inhabitants, is situated upon the slope of an amphitheatre of hills, behind the only anchorage of the island. The finest view is obtained from the balcony of a church dedicated to Nossa Senhora de Monte, situated at a considerable elevation above the town. Here one looks down upon the numerous quintas and cottages of the suburbs embosomed in gardens and vineyards, the orange groves and clumps of chestnut trees, the snow-white houses of Funchal with its churches and public buildings, the citadel frowning over the town, the calm waters of the bay with the vessels at anchor gently heaving to and fro on the long westerly swell, the Ilheo rock and batteries, the bold headlands, and the dim outline of the distant Desertas. Some of the streets are pleasantly shaded by rows of plane-trees (*Platanus occidentalis*). Several deep ravines passing through the town are carefully walled in, to prevent damage being done

by the torrents which occasionally sweep down the mountain, carrying everything before them. From the steepness of the narrow roads and streets, wheeled vehicles can scarcely be used, and sledges drawn by small bullocks supply their place, while the wine, the chief article of export, is conveyed into the town in goat-skins carried on the shoulder.

VISIT TO CURRAL.

December 23rd.

Few strangers remain long in Madeira without paying a visit to the Curral, and a large party of us left the ship for that purpose this morning. At first the road led through a series of narrow lanes frequently separated from the fields and vineyards on either side by hedges of roses, honeysuckle, jasmine and fuchsias; now and then passing under successions of trellis-work covered by the vines when in full vigour, and then forming long shady vistas. For several miles we wound our way along the hillsides, down deep ravines, and up steep rocky slopes. In spite of the ruggedness of the path, our horses progressed with wonderful alacrity, although occasionally impeded by the additional weight of the attendant burroqueros holding on by the tail, and laughing at our efforts to dislodge them. On reaching the shoulder of one of the hills, we found the ravines and valleys below us filled with dense mist. Here, at an elevation of 2500 feet, a species of spruce-like pine appeared to thrive well. The path, which at times is not more than three feet wide, now winds along the sides of the mountain with many sharp turnings; heading numerous

ravines, the frightful nature of which was partially concealed by the obscurity of the mist.

We halted at the Pass of the Curral, to which Captain Stanley's barometrical observations* assign an elevation of 2700 feet above the sea. Shortly afterwards the mist gradually dissolved, unveiling the magnificent scenery below and around. The Curral gives one the idea of a vast crater** of irregular form, surrounded by a rugged wall (upwards of a thousand feet in height) of grey weather-beaten rock cut down into wild precipices, intersected by ravines and slopes of debris mixed up with masses of crumbling rock, and towering upwards into fantastic peaks. A winding path leads to the bottom--a small fertile valley watered by a streamlet which leaves it by a deep gorge on the left, and forms a picturesque waterfall on its way to the sea. The scattered rustic huts and snow-white chapel of the Curral complete the picture of this peaceful and secluded spot, buried in the very heart of the mountains.

(*Footnote. The height of the Pico dos Bodes, determined in the usual way by the mountain barometer, was found by Lieutenant Dayman to be 3677 feet; his observations on the magnetic dip and intensity (for which see the Appendix) are interesting, as showing a great amount of local attraction at the summit.)

(**Footnote. There is reason to suppose the Curral to have been the principal, although not the only centre of that submarine volcanic action, during the continuance of which Madeira first emerged from the sea, an event, which the evidence afforded by the limestone fossils of St. Vincente (on the north side of the island) associates

with the tertiary epoch. See Paper by Dr. J. Macaulay in Edinburgh New Philosophical Journal for October 1840.)

Although it is now the middle of winter, today's excursion afforded many subjects of interest to a naturalist. Some beautiful ferns, of which even the commonest one (*Adiantum capillus-veneris*) would have been much prized by an English botanist as a very rare British species, occurred on the dripping rocks by the roadside, and many wild plants were in flower on the lower grounds. Even butterflies of three kinds, two of which (*Colias edusa* and *Cynthia cardui*) are also found in Britain, occurred, although in small numbers, and at the Pass of the Curral coleoptera of the genera *Pimelea* and *Scarites*, were met with under stones along with minute landshells, *Bulimus lubricus*, *Clausilia deltostoma*, and a Pupa.

LEAVE MADEIRA.

After a stay of eight days, we left Madeira for Rio de Janeiro, and on January 2nd picked up the south-east trade wind, and passed through the Cape de Verde Islands to the southward between Mayo and St. Jago. Two days afterwards, in latitude 9 degrees 30 minutes North, and longitude 22 degrees 40 minutes West, a slight momentary shock, supposed to be the effect of an earthquake, was felt throughout the ship.

TRY FOR DEEP-SEA SOUNDINGS.

On the 11th an attempt was made to strike deep-sea soundings, but failed from the drawing of a splice used to connect two portions of the spun-yarn employed. On the following day the attempt was repeated by Captain Stanley, unsuccessfully, however, no bottom having been obtained

at a depth of 2400 fathoms. Still a record of the experiment may be considered interesting. At three P.M., when nearly becalmed in latitude 1 degree North, and longitude 22 degrees 30 minutes West (a few hours previous to meeting the south-east trade) the second cutter was lowered with 2600 fathoms of line (six yarn spun-yarn) in her, coiled in casks, and a weight consisting of twelve 32 pounds shot--in all, 384 pounds, secured in a net bag of spun yarn. The jolly-boat was in attendance to tow the cutter as fast to whirlwind as she drifted, so as to keep the line during the time it was running out as nearly up and down as possible. The following table shows when each 100 fathoms passed over the stern, the whole 2400 fathoms of line having taken 38 minutes and 40 seconds to run out:

COLUMN 1: FATHOM MARK.

COLUMN 2: TIME OF PASSING (IN MINUTES AND SECONDS).

100	:	1	0.
200	:	2	5.
300	:	2	30.
400	:	3	35.
500	:	5	0.
600	:	6	15.
700	:	7	35.
800	:	9	0.
900	:	10	35.
1000	:	12	40.
1100	:	13	30.
1200	:	15	10.
1300	:	17	5.
1400	:	19	0.
1500	:	20	50.
1600	:	22	30.
1700	:	24	25.
1800	:	26	30.
1900	:	29	10.
2000	:	31	0.
2100	:	32	55.

2200 : 35 0.
2300 : 36 55.
2400 : 38 40.

CROSSING THE LINE.

The forenoon of January 13th was employed in the performance of the usual ceremonies on crossing the line, a custom now happily falling into desuetude--I allude to it merely for the purpose of mentioning its unfortunate consequences in the present instance; for, although the whole proceeding was conducted with the greatest good humour, we had soon afterwards to lament the occurrence of a fatal case of pleurisy, besides another scarcely less severe, believed by the medical officers to have been induced by forcible and continued submersion in what is technically called the pond, one part of the performance which novices are obliged to submit to during these marine Saturnalia.

The most interesting occurrence in natural history during the passage, in addition to the usual accompaniments of flying fish, dolphins, physaliae and velellae, was our finding, in the neighbourhood of the equator, considerable numbers of a rare British bird, *Thalassidroma leachii*, a species of storm-petrel, not before known to extend its range to the tropics; it was distributed between the tropic of Cancer and latitude 5 degrees South.

As we approached the South American coast, the rates of several of our seventeen chronometers (fifteen Government and two private ones) were found to have strangely altered, thus reducing the value of our meridian distance between Madeira and Rio; this effect was ascribed to the firing of