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A FLYING VISIT TO DIRK HARTOG AND THE HOUTMAN'S ABROLHOS ISLANDS, WESTERN AUSTRALIA.

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IN November, 1890, H.M. Surveying Ship 'Penguin,' Capt. W. Osborne Moore, was on a voyage from Gascoyne Roads, West Australia, to Fremantle, *en route* for Hobart, Tasmania, after an arduous and successful surveying season on the north-west coast of Australia. On the afternoon of the 12th, while steaming across Shark's Bay, a strong breeze sprang up right in our teeth, and we accordingly anchored, two hours before sunset, in smooth water under the lee of the north end of Dirk Hartog Island. We were within half a mile of the shore, which consisted of sandstone cliffs about 150 ft. high, and dunes of blown sand covered with rough grass and scattered bushes; nothing like a tree being visible, although such parts of the interior of the island as could be seen from the ship appeared to be fairly well clothed with grass and herbage.

Our boatswain, who was an indefatigable fisherman, soon had his line overboard, but without getting a single bite for a long time. At last he hauled in a very handsome reddish-silvery Bream-like fish, which I recognized at once as the "Snapper," *Pagrus unicolor*, well known and highly esteemed all round the Australian coast. Every fishing-line in the ship was quickly over the side, and for an hour quite exciting sport was

enjoyed, until sunset, when the fish suddenly left off biting. More than a hundred were obtained, varying in weight from ten to fifteen pounds each, and sufficient to serve for three or four good meals for the whole ship's company. They deserved their vernacular name by the eagerness with which they attacked the bait, and when hauled on board made a slight grunting noise, and emitted a peculiar and rather agreeable smell, somewhat like that of our English Smelt, only not so pronounced. The back-fins of numerous small Sharks could be seen above the surface of the water, and I noticed an enormous Turtle floating fast asleep just before the ship anchored.

We were to have resumed our voyage at sunrise the next morning, but the breeze was still very strong from the southward, and we remained at anchor. Early in the forenoon a boat was sent on shore to procure some sand, and I was by no means slow to avail myself of the opportunity of landing on this out-of-the-way island. The beach, on which there was little or no surf, was composed of fine yellow sand, broken at low-water mark by ledges of dead coral; and the first thing which struck me on commencing to ascend the cliffs—which were not particularly steep, but fatiguing to climb under the blazing Australian sun, owing to the deep loose sand which covered the slopes—was the much greater variety and the totally different character of the vegetation from what I had met with all along the coast to the northward and eastward as far as Port Darwin. I had evidently come within the boundary of the rich, varied, and most peculiar flora of South-Western Australia. Not, indeed, that there was any very great luxuriance, even the Eucalypti and Acacias, of which there were several species; being mere bushes not exceeding six or seven feet in height. Large clumps of a bright yellow "everlasting," diffusing a pleasant aromatic scent, grew at the base of the cliffs; and on their summits the general character of the vegetation was somewhat like that of an English heath, or still more like the varied growth on the open treeless waste lands in the south of Spain near Gibraltar, but almost every plant was entirely strange to me. Of animal life there was very little; I saw one Kangaroo-rat, a creature about the size of a Rabbit, and a few small Lizards. In places somewhat sheltered from the breeze two or three species of blue butterflies were flitting about.

and some pretty little beetles were found by examining flowers; while the dead shells of a small, but rather handsome *Bulimus*, *B. onslowi*, Cox, were plentifully scattered over the sand, though no living examples could be found. The southern part of Dirk Hartog Island has, I believe, been occupied as a sheep-run, but the northern half is marked "uninhabited" on the chart; and indeed it seemed to me as if no human being had ever set foot on this desolate shore. In accordance with a standing order of the ship, I carried a navy revolver for defence against possibly hostile natives, but here at any rate it seemed somewhat unnecessary.

After walking along the top of the cliff for nearly a mile, I saw the recall-flag hoisted on board the ship, and repaired without further delay to the boat; and the wind having moderated a good deal, we left our anchorage in the afternoon for Geraldton, in Champion Bay. On getting through the "Naturaliste Channel," between Dirk Hartog and Dorre Islands, into the open ocean, we found the breeze still very strong and dead against us, and a heavy head sea developed the capacity of the 'Penguin' for pitching and rolling to its utmost extent. The next two days were uncomfortable enough, as, although the weather was fine and bright, the southerly gale was as strong as ever, and all the steam-power which we could obtain with the detestable Australian coal we had on board did not suffice to force the ship against the head sea in the direction of Champion Bay. On the morning of the 16th it became evident that, under the present circumstances, our remaining supply of coal would not be sufficient to enable us to visit that port and go on thence to Fremantle; so our course was altered for the Houtman's Abrolhos, to which we were now quite close, and where it was proposed to remain until the weather moderated. Towards noon the northern outliers of this little archipelago of islets and coral-reefs were sighted, and soon afterwards we were snugly at anchor, in smooth water about a mile from the shore, under the lee of East Wallaby Island.

Although I regretted that our visit to Champion Bay, where I had expected to meet with many fine beetles and other insects, had to be postponed, if not altogether abandoned, I was by no means sorry that this opportunity had occurred of landing upon one of these remote and even now little-known islands. In many

respects the Houtman's Abrolhos are of great interest, as they are, with the single exception of Bermuda, the locality farthest removed from the equator where reef-building corals are to be found in active growth; and, although they can scarcely be regarded as true "oceanic islands," being only ninety miles from the west coast of Australia, and the soundings between them and the mainland not exceeding one hundred fathoms, several peculiar forms of animal life (and I believe some peculiar plants also) have been developed upon them. They are memorable, too, in the early history of Australian exploration, as having been the scene of the disastrous wrecks of two Dutch discovery ships. The first of these, the 'Batavia,' Commodore Pelsart, was lost in 1627 on one of the southern islands of the group, a small remnant only of her crew reaching Java, after terrible sufferings from want of food and water. The mouldering timbers of this vessel were found by Capt. J. L. Stokes during his visit to the islands in 1840. The other ship, the 'Zeewyk,' was wrecked here in 1728, her people, more fortunate than those of the 'Batavia,' escaping to Java in a sloop built of fragments of the wreck. Many relics of this disaster were also found by Capt. Stokes, including a very curious brass four-pounder with a movable breech-block, showing that breech-loading guns are not entirely a modern invention; this gun is, I believe, to be seen in the museum of the Royal United Service Institution. Capt. Stokes also mentions the finding of numerous square bottles, arranged in rows in the sand, and evidently used for the storage of water by the shipwrecked crew. I afterwards saw some of these bottles in the museum at Perth.

The Houtman's Abrolhos were first closely examined by Capt. Stokes, of the famous little surveying-ship 'Beagle,' in April and May, 1840, and many interesting details are given in his narrative of the voyage ('Discoveries in Australia,' vol. ii. pp. 140-166). Of late years the large deposits of guano on Rat Island and other southern members of the group, to which he was the first to direct attention, have been actively worked by a West Australian firm, but the northern islands are very seldom visited.

I went on shore on East Wallaby Island soon after the ship anchored, with three of my messmates, who were bent on

shooting, and we landed without any more inconvenience than a walk of a few yards over a rugged coral-reef in shallow water. The island does not in any part exceed fifty feet in height, and its shape may be described as a roughly equilateral triangle, each side measuring rather more than a mile in length, and with a long projection from the north-eastern angle. The soil consists almost entirely of clean white calcareous sand, on a base of coralline limestone, which crops out here and there in wide stretches covered with loose blocks, and contains many recent corals and shells in very good preservation. Along the shore this limestone is broken into miniature cliffs eight or ten feet high, curiously undercut by the action of the waves. Much of the island is covered with tolerably dense but low brushwood, with white sand-drifts showing here and there, and a small cairn with a weather-beaten pole on the highest point marks the visit of some former surveyor, possibly of Capt. Stokes himself.

Scarcely two minutes had passed after we landed before the report of a gun was heard, and a "Wallaby" was its victim. Before sunset no fewer than thirty-five of these animals were shot, and any number could have been obtained if wanted. Indeed, they might have been literally said to swarm among the low brushwood, and I was continually meeting with them. They evinced very few signs of alarm, and went off at quite a leisurely pace, and with more of a running than a leaping action. This species is the *Halmaturus houtmanni* of Gray, discovered during the visit of H.M.S. 'Beagle'; it is peculiar to the Houtman's Abrolhos (though closely allied to a West Australian form), and appears even to be confined to this and the adjacent West Wallaby Island, not being found in the more southern islands. It is about the size of a large hare, standing, when erect, nearly two feet high, and weighing from seven to ten pounds; the fur is rather long and soft, and of a general dark brown colour, a little paler on the under parts. These Wallabies, with others shot on the following day, were served out as fresh meat to the ship's company, but except at first were not much appreciated; the flesh was tender, but very dark in colour, and flavoured with the strong-scented herbage on which the animal subsists. We found they made very tolerable soup.

I rambled about the island until sunset, finding the vegetation

almost entirely of a shrubby character, and not very easy to get through in some parts. *Compositæ*, *Chenopodiaceæ*, and *Rutaceæ* seemed to be the prevailing natural orders, with a few stunted Acacias, as well as a small round-topped bush or low tree with a stem about as thick as one's leg, and ovate leathery leaves, which was not in flower at the time; so I could not make out its affinities. The beach above high-water mark was clothed with "bent-grass," and in some of the more open parts a yellow *Senecio*, and a *Mesembryanthemum* with bright pink flowers, carpeted the sandy soil. Except for the Wallabies, there appeared to be no great amount of animal life, as this island, unlike the southern members of the group, is apparently not a breeding station for sea-birds. I could find no traces of guano in any part, nor any burrows of the Sooty Petrel or "Mutton-bird," *Thiellus sphenurus*, Gould, though a good-sized black Petrel, presumably of this species, was commonly seen on approaching the anchorage, and the adjacent West Wallaby Island is described as being a perfect warren of these birds (*cf.* Stokes, *loc. cit.*, and Gould, 'Handbook, Birds of Australia,' vol. ii. p. 466). Neither could I meet with any evidence of the two Noddies, *Anous stolidus*, Lath., and *A. melanops*, Gould, or of the Sooty Tern, *Sterna fuliginosa*, Gmel., all three of which breed in such multitudes on Rat Island and others of the south islands, nesting in the scrub. Along the sandy beaches, which were encumbered with great piles of washed-up *Zostera*, numerous Gulls and Terns were to be seen, the former being represented by the common Australian species, *Larus novæ-hollandiæ*, Steph., and the large and powerful *L. (Gabianus) pacificus*, Lath.; while the latter included, among others, the handsome "Caspian Tern," *Sterna (Hydroprogne) caspia*, and the delicate little *Sternula nereis*, which the late Mr. Gould, its describer, aptly calls "a beautiful representative, in the Southern Ocean, of the Little Tern of the European seas. Occasionally an Osprey, or an Australian Sea-eagle, *Potioaëtus leucogaster*, Lath., was to be seen soaring high overhead; and on the coral-flats left bare by the receding tide, the pretty little *Ægialiphilus ruficapillus*—very similar in habits, and also, except for its chestnut-red head, in appearance, to our own Ringed Plover—was busily feeding in company with Black and Pied Oystercatchers, *Hæmatopus fuliginosus*, Gould, and *H. longirostris*,

Vieill., these latter being remarkably tame, and allowing themselves to be approached within four or five yards.

Lizards were fairly numerous, both in the open and under the blocks of coralline limestone, but I did not see more than three or four kinds. Of these, the most remarkable was a dark grey, rather spiny species, sometimes nearly a foot in length, with an exceedingly long tail (*Amphibolurus barbatus*). This was by no means rare, and, although active enough, was so tame, or rather so stupid, as to be caught without the slightest difficulty. A little red-headed Lizard, which I had frequently seen on the islands off the north-west coast of Australia, was, on the contrary, as nimble and wary as these creatures usually are, and I could not succeed in securing a specimen. Under the stones I found a very curious "Gecko," *Phyllodactylus marmoratus*, with a thick carrot-shaped tail, suddenly constricted at the base. The wind was too strong for insects to be moving freely, but I found a good many small but interesting beetles, chiefly by searching in the sand at the roots of the bent-grass. Numbers of land-shells, all of minute size and mostly dead, were strewn about in hollows among the sand-hills; they principally consisted of several species of *Pupa* (three of which, *P. contraria*, Sm., *P. wallabyensis*, Sm., and *P. mooreana*, Sm., were undescribed), with a little *Truncatella* found abundantly near the shore, where it was accompanied by many weathered shells of the well-known and widely distributed *Spirula australis*.

The wind had gone down somewhat on the next day (17th), but not sufficiently so as to induce us to leave our anchorage; and a party of five officers, including myself, left the ship after an early breakfast to spend a day on the island. We hauled our boat up on a sandy beach, on which I found numerous specimens of a pretty little weevil of the family *Cossonidae* under the heaps of *Zostera*; and then each went his own way, my messmates to shoot, and I to look for insects, or anything else that might turn up. By keeping under the lee of the high sandy banks next the sea, where the sun was hot and the breeze was not so much felt as elsewhere, I soon found some butterflies on the wing. These were of two species only—a little "blue" (*Lycæna* sp.), and a very pretty little "skipper," in appearance recalling our British *Cyclopides paniscus* on the upper side, and handsomely marked

beneath with silvery-white spots and bands on a tawny ground. It proved to be the rare *Telesto argenteo-ornatus*, Hew., previously recorded from "Western Australia"; and as it was fairly common here, I did not neglect to secure a good series. A good-sized black-and-white day-flying moth (*Nyctemera* sp.) was also not uncommon. I walked over to the far side of the island, and spent some little time in looking for shells on a stretch of coral-reef left dry by the receding tide, but met with very little success. A large light-coloured *Purpura* (*agrota*), which had in almost every instance several specimens of a *Crepidula* partly embedded in the substance of its thick shell, was almost the only species observed. Many more shells were to be picked up on the sandy beaches, two handsome species of *Voluta* (*nevosa* and *voluta*) being met with among others; and a Pearly Nautilus, in very good condition, surely a long way out of its latitude, was found by one of the boat's crew. Large numbers of the dried and bleached skeletons of sponges were strewn along the beach at high-water mark, and I came across a rounded block of pumice, much bigger than a man's head, which had drifted hither from some far-distant volcano, perhaps from Krakatao.

At noon we all met at the landing-place for lunch, of which the *pièce de résistance* was a boiled Wallaby shot that morning. A very little of this creature, however, went a long way, as it was about the most unpalatable dish I have ever tasted. This arose from the fact that the cook had forgotten the salt, and we had none of this necessary article with us. Sea-water was suggested as a substitute, but it could not be used, as all the water near the shore was charged with sulphuretted hydrogen, arising from the decay of the seaweed and *Zostera* washing about in it. The first lieutenant's face was a study when his beautifully white-painted whale-boat returned to the ship in the evening stained all over with a rusty-black hue, by the action of this gas on the white-lead paint. My messmates had enjoyed fairly good sport, as, besides the Wallabies, there were numbers of a very beautiful "bronze-wing" Pigeon, *Phaps elegans*, Temm., among the low bushes; and in the more open grassy places, a Bush-Quail, *Turnix scintillans*, Gould, was frequently flushed. This latter species is a little bird of sober though beautifully varied plumage, and appears to be peculiar to the Houtman's Abrolhos, having been first obtained there during the visit of the 'Beagle' in 1840.

In the afternoon I walked to the eastern extremity of the island, which part is more open than elsewhere, with extensive stretches of almost bare limestone rock. Water appears to stand here in places during the rainy season, as I found a good many empty shells of a species of *Succinea* (*scalarina*, Pfeiff.), as well as some very young living specimens adhering to the under side of large stones. I was very much pleased to find here the remarkable Scincoid Lizard, *Egernia* (*Silubosaurus*) *stokesii*, Gray, discovered by Capt. Stokes on Rat Island in the southern part of the group ('Discoveries in Australia,' vol. ii. p. 145), and exceedingly well figured in the Appendix to that valuable work. The first specimens were obtained by raising a large flat block of limestone, under which several were snugly stowed away; these were secured without the least trouble, as for a Lizard it is the most sluggish and stupid creature imaginable. It is, however, able to give a pretty severe bite, and holds on to any object which it has seized with its jaws with the tenacity of a bull-dog. The largest examples attain a length of nine or ten inches; it is of a rather stout and clumsy build, with short legs, and is covered with rather shining keeled scales, which on the tail assume the character of short spines. In colour it is a rich and peculiar blackish olive, thickly mottled with pale yellow spots, which are confluent on the under parts. The habits of this Lizard appear to be somewhat predatory, and in all probability it is of this species that Mr. Gould's collector, Gilbert, speaks in his very interesting notes on the breeding of the Terns, &c., in the Southern Abrolhos ('Handbook, Birds of Australia,' ii. pp. 414, 415). He writes as follows:—"By the middle of January the eggs [of *Anous stolidus*] were nearly ready to hatch, and there would be an overwhelming increase of this species yearly but for the check which nature has provided in the presence of a small Lizard, which is very abundant in their breeding-places, and which finds an easy prey in the young of this Noddy and of *Sterna fuliginosa*. I am satisfied that not more than one out of every twenty birds hatched ever reaches maturity, or lives long enough to take wing; besides which great numbers of the old birds are constantly killed. These Lizards do not eat the whole bird, but merely extract the brain and vertebral marrow; the remainder is, however, soon cleared off by the *Dermestes lardarius*,

an insect which occurs in amazing numbers, and gave me a great deal of uneasiness and constant trouble to preserve my collection from their repeated attacks." (I may remark that I saw no trace whatever of this beetle on East Wallaby Island, though I was specially on the look-out for Coleoptera.)

Soon afterwards I found the *Egernia* quite commonly in a rather restricted space, but always under stones, and never seen in the open. I brought off six or seven of the largest in a bag, most of which were subsequently consigned to the spirit-tank as specimens; but I kept two alive for several months afterwards, feeding them when they would eat, which was but seldom, on small pieces of raw beef. As the afternoon was now well advanced, I went down to the landing-place, where I found the whaler almost filled with game, a large number of Wallabies having been shot, chiefly for the benefit of the ship's company, but without any apparent diminution of their numbers when we landed on a subsequent occasion.

We were still detained at our anchorage on the 18th by the wind, which had sprung up again very strongly from the old quarter, accompanied with exceedingly brilliant sheet lightning after sunset; and no boat landed on the island that day. Contrary to our expectations, fishing from the ship met with very little success, only two or three "Snapper" and several Blow-fish, *Tetraodon laevis*, being caught; the latter were a nuisance, as, besides being quite useless, if not actually dangerous, as food, their powerful front teeth at once severed almost any hook that was put overboard. Sharks were, if anything, more numerous than at Dirk Hartog Island, and several were caught and despatched by the sailors during the day; the stomach of one about eight feet long (which appeared to be the widely distributed *Galeocерdo arcticus*) contained, besides the carcasses of two or three Wallabies which had been thrown overboard, more than a bushel of the remains of a large species of Sea-crawfish (*Palinurus* sp.), among which were some nearly perfect specimens.

On the 19th the southerly wind continued very strong all the morning, but the day was otherwise fine, and in the afternoon I was able to land again for two or three hours. A few fresh species of beetles rewarded my search, as well as several more fine specimens of Stokes's Lizard, which as before I could find

only in one small spot near the east end of the island. Ascending a low hill on the north shore, I obtained a good view of the adjacent West Wallaby Island, which was connected to the eastern island by an almost continuous series of reefs and coral-flats, so that it appeared quite practicable to cross from one island to the other on foot at low water, the distance being about two miles. Close to this hill was one of the two wells or watering-places mentioned by Capt. Stokes in his account of the island; this was a circular hole in the limestone rock, about a yard in diameter and ten feet deep, with a few inches of slightly brackish but clear and fairly good water at the bottom. No more Wallabies were shot to-day, as the men had got tired of them; but a fair number of bronze-wing Pigeons and several specimens of the peculiar Quail were bagged by our sportsmen.

We were able at last to get away from our anchorage at day-break on the 20th, and, abandoning finally our proposed visit to Champion Bay, as our stock of coal on board was very low, we shaped our course direct for Fremantle, where we arrived on the morning of Nov. 22nd.