THOMAS HENRY HUXLEY

had dreamed of visiting the marine paradise of the Great Barrier Reef ever since learning in May 1846 that he had been appointed assistant-surgeon to the British survey vessel, HMS Rattlesnake. The captain, Owen Stanley, had been commissioned to find a safe sea passage for imperial trade by charting the treacherous waters around the coast of New Guinea, as well as the coral-strewn inner passage of the Barrier Reef along the north-east coast of Australia.

For Tom Huxley, a boy of impoverished lower-middle class background, with no patrons, a mere two years of formal schooling, a burden of debts to his family and only a lowly medical degree to his name, the opportunity to trawl these marine-rich waters was the chance of a lifetime. Despite his social disadvantages he was, at the age of twenty-one, driven by the fiercest of ambitions to make his mark in the elite and brutally competitive world of British science.

Young Huxley realised that his limited education would shape the kind of science he could do on the voyage. He decided therefore to analyse the structures and biological

ABOVE: HMS Rattlesnake and the tender Bramble in the background, painting by Oswald W Brierly 1852. State Library of New South Wales, a128 899.
links between living marine species that he would capture in the southern oceans. On 10 December 1846, shortly before sailing, he wrote in his diary that university experts with large libraries might have all the advantages for identifying and naming such perishable creatures, but “what I can do and they cannot is: I can observe 1. the ‘habits’ of living bodies, 2. their mode of development and generation, 3. their anatomy by dissection of fresh specimens, 4. their histology [living tissues and organs] by microscopic observation.”

Once the Rattlesnake reached open sea he tossed the tow net overboard each day at noon, and then retrieved it in the evening, pulsating with jellyfish, sea nettles, sea squirts, arrow-worms, sea slugs and sea cucumbers. These he examined and dissected deep into the night, knowing they would be rotten by the following day.

His work rapidly yielded results. Notably, he recognised that jellyfish and colonial animals like the Portuguese man-of-war shared a body plan made up of “two foundation membranes, one covering the outside surface, the other lining the stomach and its ramifications, the two separated by a … gelatinous mass” and tentacles armed with stinging cells, which gave his new animal group the name Nematophora. Huxley later added corals to the Nematophora, and this group, now called the cnidarians, is still recognised today.

So, when the Rattlesnake eventually arrived at Sydney's Port Jackson harbour on 16 July 1847, Huxley was chafing both to finish his half-formulated paper ‘On the anatomy and the affinities of the family of the Medusae’ and to begin surveying the fauna of the Great Barrier Reef. In the event it was not until 8 May 1848, after a lengthy stay in Sydney and several shorter reconnaissance voyages, that the Rattlesnake, accompanied by the tender Bramble, began its intensive survey of the Great Barrier Reef.

In the interim Huxley had met a young Sydney-based girl, Henrietta ‘Nettie’ Heathorn, at a small private party. Born out of wedlock to a West Indian widow and a Maidstone brewer, Nettie had grown up in poverty and learnt to fend for herself. In 1842 her father had escaped his money troubles by fleeing from England to set up a primitive mill and brewery in the remote bushland site at Jamberoo, ninety miles from Sydney. The remainder of the family had joined him two years later, after which Nettie moved to Newtown in western Sydney to manage her stepsister’s household. Tom and Nettie discovered they were twin souls and became engaged within a few weeks.

The Rattlesnake’s trip to the Barrier Reef began well enough. At Rockingham beach, near present-day Mackay, Huxley enjoyed helping to unload the baggage of surveyor Edmund Kennedy and a party of twelve
explorers, who were preparing to set out on a journey of six hundred miles or so overland to Cape York to investigate the feasibility of establishing a new military base and Asian trading port in the north. Huxley had so enjoyed riding on a brief reconnaissance mission with the dashing young Kennedy that he asked to join the expedition. Fortunately, Captain Stanley refused permission, or Huxley would likely have perished of disease, starvation or Aboriginal spears, as all but three of the party did.

A month or so later, Huxley began to tumble into one of the most severe depressions of his life. The trigger was his reading of a novel called *Ranthorpe* written by the English freethinker, George Henry Lewes. It wasn’t a particularly good book, but it goaded his deepest insecurities by recounting the story of a young man who destroyed the life of the girl he loved by convincing himself he was a literary genius, only to discover eventually that he lacked any real talent.

Having heard no news of the zoological papers he’d sent to London, Huxley began to fear that he had been deluding himself about making a scientific career. If so, his engagement to Nettie looked selfish and irresponsible. A bubble had burst in his mind and “vile reality” flooded in. Was he destined to live out his life as a miserable surgeon-naturalist aboard some lonely, leaky frigate?

Despite sailing over the greatest concentration of beautiful and bizarre sea creatures in the world, Huxley was unable to work. The blank pages and cryptic entries in his diary reveal a man locked in a state of mental paralysis. On 7 July, he simply recorded: “Anchored under Low Isds”, along with a later appended footnote: “All this part of the cruise is a perfect blank in my memory”.

Huxley hoped that his spirits would pick up when they reached Cape York because a provision ship was due to bring long-awaited letters from Sydney; and he also expected to reconnect with Mr. Kennedy’s first camp, Owen Stanley, Voyage of H.M.S. *Rattlesnake*, Vol 1. State Library of New South Wales a487068. Huxley clearly enjoyed riding with Kennedy on a reconnaissance mission, writing “‘Come on then.’ And we are fairly off into the bush. Kennedy rides ahead, ever and anon, taking a bearing with a pocket compass. I follow … and we two beat the long grass down into a road for those who come after us.”

The Fortress, Port Essington, Owen Stanley, Voyage of HMS *Rattlesnake*, Vol 1. State Library of New South Wales a487122. Huxley thought that the ramshackle, disease-ridden and ineffectually run settlement of Port Essington was “the most miserable, ill-managed hole in Her Majesty’s dominions”.

with Edward Kennedy’s expedition. But on 18 October when they arrived at the rendezvous-point, there was no sign of either. Eventually the provision ship did arrive with letters, but not before Huxley had convinced himself that Nettie must have died of scarlet fever.

Eight days later they arrived at Port Essington in Arnhem Land, Britain’s third effort to establish an ‘Athens in the north’. The Rattlesnake’s captain, Owen Stanley, had been present a decade earlier when the settlement of Victoria was established up-river from Port Essington, and he had expressed high hopes for the place. He’d even directed the settlement’s first play, optimistically titled ‘Cheap Living’.

Sadly, the living turned out to be cheap only in lives. By the time the Rattlesnake sailed into Port Essington harbour, the town had degenerated into a shambles of termite-infested buildings and fever-infected soldiers. High on the cliff Huxley glimpsed “a ruined blockhouse” sporting a few pieces of rusting cannon.

The blockhouse was a good indicator of the state of the settlement. A hurricane had flattened buildings, destroyed the garden and killed eight men. Crocodiles had eaten the dogs, buffalo had eaten the plants, termites had eaten every shred of paper and cockroaches multiplied to an almost unbelievable extent. The roofs leaked in the tropical downpours and a foetid stink wafted up from the mangrove swamps.

The inhabitants of Port Essington were in no better condition. All but ten of the sixty troops were ill, including the Commandant, Captain Macarthur, a tyrannous “old fogey” who delighted in making the lives of his officers hell, creating a miasma of “petty intrigue, caballing and mutual hatred” amongst the handful of demoralised officers. The cemetery remained the busiest spot in town, and even those who’d so far managed to avoid it were riddled with tropical ulcers, parasites, ophthalmia and malaria.

Huxley could find only two things to praise: the pineapples and jackfruit grew like weeds; and the hordes of jellyfish that floated in the bay. Otherwise it was “the most miserable, ill-managed hole in Her Majesty’s dominions” and “fit for neither man nor beast”.

Under these conditions Huxley’s affliction of the soul began to spread to others on the ship. Everyone noticed Stanley’s fraying nerves. He’d served for twenty-two years under the extreme mental and physical conditions of naval surveying. Such strains had driven other commanders to shoot themselves, and Stanley was showing the same signs of disintegration. He became paranoid and quarrelsome, snarling at his officers over the pettiest matters. The whole crew breathed a sigh of relief when they finally sailed out of Port Essington in mid-November 1848 and turned westward past Timor on the long way back to Sydney.

Six months later, when the HMS Rattlesnake departed from Port Jackson harbour on 8 May 1849 to complete the last leg of its survey along the south-east coast of New Guinea and the northern tip of Cape York, Huxley was in much better spirits. He’d heard that his two papers on marine species had been well received in London’s senior science circles; perhaps he might make a successful scientist after all.

Moreover, he and his colleagues felt a special frisson of excitement because Papuan lands were still terra incognita. They saw themselves as undertaking the last of “the great voyages of discovery of new and untrodden lands, within the habitable globe”. Thomas Huxley couldn’t wait. Having been denied a place on the Kennedy expedition, he was thrilled at another opportunity to test his mettle as a scientific explorer.

Alas, he and the other adventurous spirits on board were doomed to disappointment. Although the Rattlesnake surveyed among the enticing tropical waters
of the Louisiade Islands and within a short distance of the New Guinea mainland, Captain Stanley’s fears of inciting clashes with the Papuan inhabitants led him to keep all land visits to an absolute minimum. Huxley could not forgive this “brute”, coward and “little fiend” as any chance of making new scientific discoveries in this unexplored world vanished.

Fortunately, after the Rattlesnake left New Guinea waters to reach Cape York, Huxley suddenly gained a wholly unexpected opportunity to develop his nascent interest in ethnography, as he wrote in his diary on 16 October 1847.

A large party of natives came on from the islands [Prince of Wales Island in the Torres Strait] … among whom was a white woman disfigured by dirt and the effect of the sun on her almost uncovered body … before the men had time to recover from their astonishment she advanced towards them and in hesitating broken language cried “I am a Christian — I am ashamed.”

As she struggled to tell her story, the company of the Rattlesnake learned that she was Barbara Crawford, a Scots emigrant in her early twenties. In Moreton Bay she had married a small trader named Thompson and around five or six years before the arrival of the Rattlesnake she, Thompson and three men had been wrecked in a storm while attempting to salvage a larger wreck in Torres Strait. All had drowned except Barbara, who was saved by a local Islander called Tomogugu. She had been adopted by an old chief who thought she was a reincarnation of his own lost daughter and she had lived with his clan, the Kaurareg people of
Muralag (Prince of Wales Island) ever since. To the Kaurareg, she was Giom, a respected member of their tribal group.

Giom revealed to Huxley and his fellow naturalists a world that had until then been opaque to them. Learning their language and absorbing their ways, she had, in effect, become an indigene. Within two days of her transfer to the ship, Huxley reported that “she has already given us a great deal of curious information about the habits of these people with an air of the most perfect truth and sincerity, and no little intelligence”.

Huxley learned of the Kaurareg’s deep understanding of and reverence for the natural world around them. They believed that sharks and porpoises were enchanted and should be protected. Even turtles, a food staple, were seen as intricately linked with the cosmos:

when the heavy squall of these parts gathers and the clouds topple over one another in huge fantastic masses they say the “marki” (ghosts) are looking out for turtle and they profess that one comes down and fetches a supply for the rest.

Finally, Huxley received eye-opening glimpses into the social complexity and importance of male initiation and death rituals. Giom’s testimony also included some things that Huxley found disconcerting, including how Kennedy had been killed by an inland tribe simply for his clothes.
Huxley’s understanding of indigenous life was transformed in both style and substance. Gone was his earlier irony, to be replaced by a new seriousness and empathy, something much closer to “the … science of ethnography”.

When, on 3 December, the Rattlesnake left Cape York to anchor off Mount Ernest Island in the Torres Strait, the fruits of this new sympathy became apparent. That afternoon, Huxley and the ship’s artist, Oswald Brierly, took a cutter ashore and made contact with a solitary elder on the beach whom Huxley called Panooda, and described as “a first-rate fellow”.

After accepting a gift of ship’s biscuit, Panooda permitted them to walk along an inland path until they reached what Huxley called, “a most beautiful opening in the brush arched over by magnificent trees and so shaded and cool with such a ‘dim religious light’ pervading it, that it looked quite like a chapel.” There, they were confronted with a series of six-foot posts supporting a plaited mat or screen, in front of which stood stones painted with grotesque human faces.

The following day they returned to the temple-like spot, equipped with sketching materials. As Panooda sat quietly beside them, occasionally jumping up to view the details of their paintings with a grunt of approval, both Huxley and Brierly felt a mystical communion with their surroundings. Huxley wrote that “The silence and gloom heightened the strange appearance of the fantastic savage monument … I shall never forget the beauty of the place”.

Increasingly at ease with his new friends, Panooda led them to another decorated screen, which contained three small turtle heads and a flat board carrying ten weathered human skulls. This, he explained, was a ceremonial place where the men sat after having killed their enemies, listening to the beating of drums and undertaking “small dances”.

Huxley’s final encounter with Torres Strait people at Darnley Island between 11 and 13 December, built on his new cultural sensitivity. Here, he exchanged names with a young man named Do-outou, who awarded him the privilege of a local ‘coskeer’, or wife, called Kaeta. Though flattered at the attention of this “good looking young woman”, Huxley wondered how he’d be received if he were to return to Sydney and introduce Kaeta as Mrs Huxley. In the event, she remained at Darnley Island, apparently satisfied.

Soon after, the Rattlesnake left Torres Strait, sailed around the edge of the Louisiades once more, to arrive back in Sydney on 6 April 1850. Here, Thomas Huxley was briefly reunited with the woman who would eventually become his wife, though it would be a long wait of some six years before his scientific career was secure enough for him to bring Nettie to England.

In the meantime, as the Rattlesnake departed Port Jackson on 2 May 1850, after four long years of cruising these southern waters, Huxley watched “the last of the land of Australia … a dark grey line along the horizon backed by as splendid a sky as ever the setting sun lighted up.” The sight moved him to record the heartfelt words, “We part friends, O land of gum trees. I have much to thank you for.”

The Author

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On his return to England in 1850, Thomas Huxley’s achievements during his voyage on the Rattlesnake saw him elected a Fellow of the Royal Society, awarded a Royal Society Medal and elected to the Society’s Council. Thomas Huxley went on to become a distinguished comparative biologist and paleontologist and Professor of Natural History at the Royal School of Mines. A close friend and ally of Charles Darwin, Huxley famously argued in support of Darwin’s theory of evolution in the 1860 debate at the Oxford University Museum which became known as the Huxley-Wilberforce debate.