TURTLE POWER.
Captain Cook’s Environmental Crisis on the Great Barrier Reef.

Historians have long seen the Endeavour’s voyage through today’s Great Barrier Reef as a battle between James Cook and what he called an ‘insane Labyrinth’ of coral. The key treasure from this encounter, had it been preserved, would surely have been a ‘fragment’ of coral the size of a man’s fist that nearly sank, then helped to save, the ship after it struck Endeavour Reef.

A second almost equally prominent theme of Cook’s epic Barrier Reef passage has been his violent encounter with the Aboriginal people who inhabited the area around the banks of the Endeavour River that now encompasses Cooktown. Here the appropriate treasure might well be a GuuguYimmithir warrior’s lance, described by Cook as ‘a most terrible weapon.’

To these I would like to add a third voyage relic, not as an alternative, but as a supplement that might help to complicate and deepen our understanding of the whole. I can’t show it to you today because it would be a three-hundred-pound green turtle, Chelone mydas. To me this great creature stands as an emblem of the profound environmental misunderstandings and difficulties that Cook and his crew faced during their Barrier Reef navigation, and especially while they were marooned for five weeks at Endeavour River. For it was here that they first become entangled in an armed struggle with the local Indigenous people over resources, a struggle that arose largely out of the Europeans’ inability to comprehend and manage the novel human and natural environment they faced.

Putting an environmental lens on these events helps also to throw some light on several puzzles about Cook’s Barrier Reef passage that remain
unsatisfactorily explained. Why, for example, did the usually meticulous navigator and sailor take the terrible risk of sailing at night in coral infested waters and so nearly lose his ship, an action that attracted sharp criticism from some of his contemporaries? Equally baffling is Cook’s descant on the ideal way of life of Australian Aborigines compared to that of contemporary Europeans, something which many historians see as a piece of noble savage philosophizing. If so, it was oddly out of character. That James Cook, the Enlightenment pragmatist and phlegmatic Yorkshire seaman, should suddenly have engaged in a in flight of Rousseau-style rhapsody seems rather hard to swallow. I believe, rather, that Cook was reflecting on the superior abilities of the Guugu Yimithir to manage Australia’s harsh northern environment.

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Captain James Cook didn’t know on Sunday 20 May 1770, two weeks after leaving Botany Bay on the South East coast of New Holland, that the Endeavour was sailing into the southwest entrance of a vast lagoon where reef-growing corals begin their work, a channel that later navigators would call the Great Barrier Reef inner passage. He did not realize it then, and he never would. This point, obvious enough in his journals, needs to be stressed because we often inadvertently treat this phase of Cook’s first voyage as if the Great Barrier Reef that we know today already existed somewhere in the back of his mind. It is as if he unconsciously knew that he was about to enter into combat with a constellation of deepwater ‘barrier reefs’ that ran more or less parallel with the Australian coast for two thousand kilometres. For us to have any glimmer of understanding of the experiences and reactions of Cook and his men, we, too, must rid our minds of the existence of this vast geophysical phenomenon unique to the world, a region of land and sea that had in 1770 never been imagined in its totality by
any human being and that would remain substantially unimagined even after the *Endeavour* had sailed through it.

Since leaving Botany Bay Cook had sighted lines of breakers suggestive of undersea obstacles on several occasions, but it was only on the morning of the 20th that he was confronted with a long ‘shoal’ projecting eastward from a finger of land he called Sandy Cape, which forced him to edge northwest for several miles before finding clear water. He named the shoal Break Sea Spit because, after weathering it, the ship suddenly entered ‘smooth water’. There was nothing to suggest that the shoal was anything other than a simple extension of the rocky and sandy shoreline, though we now know it to be an extinct coral reef covered in sand.

What Cook knew of the origins and character of coral reefs at this point, however, remains a mystery. He’d read earlier travel accounts of serrated deep-sea coral ‘ledges’ by Samuel Purchas (1626) and others, and he’d recently encountered a variety of coral reef forms in the South Sea Islands, but it was only much later on his second voyage that he explicitly mentioned that coral ‘rockes’ were formed in the sea by animals.

Neither did he have any inkling that the calm waters now lapping at the ship’s bow derived from the sheltering effects of the Swain reefs, a collection of massive deepwater aggregations of coral some two hundred kilometers to the east that marked the south-eastern outer reef boundary of the lagoon. In effect, his ship had wafted into a vast natural coral basin resembling a woven Aboriginal fish trap, and designed to work by enticing its victims into an inviting entrance but then narrowing suddenly to entangle them, much as the Barrier was about to do by veering sharply in a north west direction towards the mainland.

Cook also failed to sight what might have proved the give-away presence of the sand and coral cays of the Capricornia island group, which were lying over the horizon to the east, some seventy kilometers off the
mainland. Instead, as they coasted along in a comfortable 12-20 fathoms of water with land in clear view, they reached and skirted the clusters of tall picturesque Islands, which Cook named the Northumberland and the Whitsunday groups — former volcanic mountain chains on the mainland that had been transformed into islands by raised water levels and coastal subsidence. Even the recurring ‘shoals’ surrounding these — actually fringing coral reefs — initially caused the navigator no real alarm. Shallows, drifts and banks held little fear for a veteran sailor who’d often steered coal transports like the *Endeavour* through England’s sandy northern coastal waters and navigated battle ships through the treacherous rock-filled St Lawrence River during the Seven Years War. Though irritating and, as they increased in incidence, hazardous, such shoals were possible to detect and dodge, provided the leadsman sounded the depths continually and the pinnace went ahead to locate the deeper channels.

Cook and Banks did observe, though, that the ship appeared to have entered a distinct new environmental ‘zone’. The sun was hotter, the air more humid, the seas warmer, the landscapes rockier, and the flora more reminiscent of the West Indies. For the first time since leaving Tahiti they observed palm nut trees and ‘the true mangrove’. These familiar species of plants convinced Banks that they were departing ‘the Southern Temperate Zone’ and should expect to see more typical tropical flora henceforth. Hammer oysters and small pearl oysters were also abundant, and both men speculated on the possibility of a future pearling industry for the British Empire. A short landfall on 29 May confirmed the similarities with Jamaica, though the lack of water, barbed grass, clouds of mosquitoes, mangrove mud, and huge tides gave rise to a bleak impression and to the place name, Thirsty Sound.

The shoal dodging continued as they sailed a slow zigzag course between each new crop of continental islands and the shore. On 9 June,
they anchored near a small inlet, slightly east of a rocky eminence that Cook named Point Grafton. It repeated the pattern of high ‘stony’ and ‘barren’ landscapes recently passed at Cape Upstart, Magnetical Island, Dunk Island and Cape Sandwich. Here at the site of today’s Yarrabah community, just south of Cairns, Cook and Banks scrambled up another stony peak to gaze down on yet another mangrove swamp. Spires of smoke indicated the nearby presence of Indigenous people, but none were sighted.

When the *Endeavour* embarked from the inlet at midnight on 9 June in a slight breeze, Cook had no idea that a chain of coral reefs and cays of the modern Barrier had pincered in towards the northeast so that they now lay only twenty-five kilometers from the ship. True he and Banks noted the presence of a small sandy island (cay) near to their previous anchorage, which they called Green Island: it was ‘laying upon a large Coral shoal, much resembling the low Islands to the eastward of us but the first of the kind we had met with in this part of the South Sea’.

This novelty failed to arouse alarm or to change their sailing pattern. Night visibility was good under a bright moon, and a seaman was, as usual, standing at the bows swinging the lead to measure their depth. Cook assumed there was ample time to change course should the usual sandy shoals be indicated, so he retired for the night, only to be awakened around eleven when the water shelved from twenty fathoms to nothing and the ship struck heavily on a reef. Being twenty miles from the shore in deep water, Cook realized at once that they must be ‘upon a rock of coral, which is more fatal than any other, because the points of it are so sharp, and every part of the surface so rough as to grind away whatever is rubbed against it, even with the gentlest motion’.

The subsequent thirteen-hour ordeal, as the crew fought for the survival of the *Endeavour*, has become an explorer’s classic. Cook’s terse account never loses its power. We experience the men, with horror frozen
on every face and oaths stifled in their throats, staggering to retain balance as the ship tilts and beats against the rocks with a grating sound that can be felt through every plank. We watch the sheathing and false keel float away in the moonlight; we hear the repeated splashes of more than fifty tons of cannon, ballast, lead and coal tossed overboard in a failed effort to float the impaled hull off the coral. There is stark disappointment when the risen tide fails by several feet even to reach the ship’s bottom, let alone to float it free. There is the faint expression of hope in the traditional belief that night tides will be fuller than daytime ones.

Hours later there is the mounting sound of the returning tide rushing through the leak and the backbreaking efforts of successive hands, Banks included, working the three unbroken pumps incessantly against the rising water. We feel their exhaustion as they slump on the tilted deck, oblivious of pump water gushing over their bodies. There is a surge of hope as they make an unexpected gain on the leak. Then there is a last desperate heaving on the capstan and windlass, pulling against the taut anchor chains that radiate out from the centre and stern, in an effort to jump the ship off the coral. Finally, at twenty past ten, she is heaved into deep water to be temporarily caulked by the young midshipman Monkhouse’s brilliant ‘fothering’ experiment. He slides canvas filled with loose clumps of oakum, wool and sheep dung across the ship’s bottom so that the suction carries the ‘filth’ into the cavity to help clog the leak.

Throughout all this, Cook had ‘anticipated the floating of the ship not as an earnest of deliverance but as an event that would probably precipitate our destruction’, for he assumed:

that if any should be left on board to perish in the waves, they would probably suffer less upon the whole than those who should get on shore without any lasting or effectual defence against the natives, in a country, where even nets and firearms would scarcely furnish them with food; and where, if they should find the means of subsistence, they must be condemned to languish out the remainder of life in a
desolate wilderness, without the possession, or even hope, of any
domestic comfort, and cut off from all commerce with mankind,
except the naked savages who prowled the desert, and who perhaps
were some of the most rude and uncivilized upon the earth.10

Still, with the leak reduced and hope resurgent, the Master eventually finds a
passage to a place where they can repair the hull, a narrow channel leading
to a spot on the mangrove banks of what Cook would call Endeavour River.

On 18 June, after the *Endeavour* was careened on a rough wooden
stage in preparation for repairs, Cook climbed a steep hill behind the
makeshift harbor to survey the countryside where they were marooned. The
‘barren’ landscape of stony hills, salt-infused mangrove swamps and scrubby
trees filled him with melancholy, and he wondered how he would feed his
crew both here and on their voyage northward.

A little later the carpenters reported discovering a hole in the
*Endeavour* large enough to have sunk a ship with double the number of
pumps: they’d been saved only by a providential lump of coral that
remained jammed in the wound. Patching the hole and rebuilding the false
keel seemed feasible, but Cook fretted about the ship’s ultimate
seaworthiness, especially after her central planking and seams were later
sprung when refloating the hull.

Worse, the surrounding countryside seemed devoid of resources for
restoring the crew’s health and supporting their long-term physical needs.
This was urgent because scurvy had struck. Numbers of sailors were
showing the early symptoms of loose teeth, while Charles Green, their
astronomer, and Tupaia, their Polynesian translator, had developed the
putrid gums and livid leg spots typical of the disease’s advanced stages. Not
even the famous English scurvy expert Dr Lind had yet found a certain cure
for this fearsome ‘Explorers’ affliction. Cook knew from experience,
though, that fresh vegetables, fruit and meat could have a beneficial effect
and he urged Joseph Banks to locate some urgently.
For the ambitious young naturalist, the forced landfall offered a blessed chance to collect useful seeds, trees, fruits and grains for economic cultivation, as well as to discover new specimens of plants and animals that would extend Linnaeus’s taxonomic scale of ‘the order in which species had been created and fixed’. But he also sympathized with Cook’s anxiety about the need for healthy food, and so threw himself into the task of finding nutritious plants and of shooting edible animals.

Alas, Banks soon decided that suitable plants could not thrive in a soil ‘by nature doomed to everlasting Barrenness’. Still, he ordered the sailors to gather whatever they could find. This proved to be a thin array of cabbage palms, ‘very bad’ beans, fibrous plantains, stone-filled native wonga plums tasting like ‘indifferent Damsons’, and a type of wild kale resembling the West Indian Cocos. Even Cook — famed for wolfing down any type of food as an example to the hands — found the roots of the kale too acrid, though he and Banks tried to claim that its cooked leaves tasted ‘little inferior to spinach’.

The bizarre animal life around the river offered little better. At first the ‘kangaroo’ seemed promising, even if it was an animal that Banks and his colleagues struggled to define, comparing it variously to a greyhound, a giant rabbit, or a tiny hopping ‘jerbua’ rodent of Africa. Whatever the creature might be, Banks thought it new to science and ‘different from any animal I have heard or read of’. The first specimen killed proved ‘capital eating’, but after this the creatures easily evaded Bank’s greyhounds in the long grass, and the only other specimens shot consisted of an elderly rank-tasting male and a baby joey carrying little meat.

Ducks, cockatoos, bustards and parrots were equally shy and elusive, and pigeons were never shootable in sufficient numbers to feed the hands. Neither did anyone manage to kill any of the yellowish wild dogs or ‘wolves’ that a few seamen sighted. One old salt reported seeing a keg-sized devil
with horns and wings, which turned out to be a fruit bat or flying fox. Cook pardoned the mistake on the grounds that ‘the batts here …have a frightful appearance, for they are nearly black, and full as large as a partridge’\textsuperscript{15}. Perhaps he would have eaten this plump creature — they are a delicacy in Vanuatu today where I’ve eaten one myself — but the sailors failed to shoot the beasts. After all these efforts, the only crewman to show any improvement in health was Tupaia, who’d set up camp on the foreshore and dosed himself on a diet of river fish. Their own efforts to catch sufficient fish for the hands with the ship’s seine net proved only intermittently successful.

The overall paucity of natural resources began to look ominous for two reasons. The first was revealed by another hill climb on 30 June aimed at discerning a passage through the maze of reefs encountered on the way into Endeavour River. Through his telescope Cook saw, ‘with great concern, innumerable sand banks and shoals lying all along the coast in every direction. The innermost lay about three or four miles from the shore, the outermost extended as far as I could see with my glass, and many of them did but rise over water.’\textsuperscript{16} A northward passage ‘among unknown dangers’ seemed the logical choice, since trying to return southward was impossible with the trade wind blowing ‘directly in our teeth.’\textsuperscript{17} Yet a successive survey by the Master in the pinnace threw doubt on a northern course as well. It looked as if they would have to remain marooned on the riverbank for at least a further six months until the trade winds shifted to the opposite direction and allowed them to sail back along the track they’d come.

Cook pinned his hopes on trading for food with the local ‘Indians’ who’d been sighted but were skittish and evasive about making closer contact. Eventually some cautious encounters on 8 and 9 July with a group of naked, chocolate-coloured warriors broke the ice. Cook thought the men lively, intelligent and athletic, but they dashed all hope of repeating his
successful South Seas pattern of trading beads, mirrors, cloth, nails and trinkets for supplies of fresh food and vegetables. On departing, the warriors tossed their European gifts away contemptuously. Only once, when offered a small fish, did they show pleasure and animation, a sign that their desire for food matched that of the visitors.

The solution to Cook’s food crisis came quite literally out of the blue. During one of the Master’s frustrating surveys on the pinnace, he chanced on numbers of huge green turtles basking on the surrounding reefs. Banks’s journal recorded the relief and elation felt by all the *Endeavour* men, for ‘the promise of such plenty of good provisions made our situation appear much less dreadful; were we obliged to wait here for another season of the year when the winds might alter, we could do it without fear of wanting Provisions: this thought alone put everybody in vast spirits.’ Should their ship manage to escape this coral trap, live turtles could also sustain the next stages of their voyage. By 15 July Banks was gloating that ‘we may now be said to swim in Plenty’: the turtles were abundant, weighed between 200-300 lbs each, and were filled with rich nutritious oil.

It took the *Guugu Yimmithir* only a few days to notice that the *Endeavour*’s decks were crawling with enough green turtle to feed their clans for a very considerable time. On 19 July the ship received a formal visitation from ten naked warriors, armed with spears, and in a determined mood. When their leader’s request for a single turtle was refused, they tried angrily to carry one away to their waiting canoes, only to be manhandled away from the gunwales by a group of sailors. Infuriated, the warriors leapt ashore and deftly set fire to the long dry grass adjoining the ship’s tents, nearly destroying the *Endeavour*’s precious fishing net. Cook instantly ordered the firing of a musket loaded with birdshot, which wounded one of the offenders. Though the warrior escaped with little blood loss, this altercation marked a portentous moment. In effect, the shots of the first
European-Aboriginal resource war on the Barrier Reef had been fired, and a
dismal future pattern initiated.

Cook later expressed surprise at this abrupt deterioration in race
relations. He conceded that the ‘Indians’ might regard turtle flesh as ‘a
dainty’, but it never occurred to him that it was actually a Guugu Yimithir
staple on which they depended crucially. Neither did he understand that
these ‘Indian’ peoples practiced reciprocal food sharing and expected it of
others, nor that they might consider turtles to be the produce of their own
estate, which could not be stolen by strangers, white or black. With minds
that linked the idea of ‘civilization’ to European-style agricultural cultivation,
the mariners failed to notice how subtly the locals managed the natural
economy of their harsh littoral. Banks echoed the general puzzlement: ‘they
seemd to set no value upon anything we had except our turtle, which of all
things we were the least able to spare them.’

Cook’s later reflections on the character of the ‘Indians’ of
Endeavour River appeared, however, to reveal a deepened awareness of the
fundamental clash that had taken place between their two conflicting value
systems and sets of environmental needs:

[T]he Natives of New Holland … live in Tranquillity which is not
disturb’d by the Inequality of Condition: the Earth and sea of their
own accord furnishes them with all things necessary for life, they
covet not Magnificent Houses, Houseold-stuff &c, they live in a
warm and fine Climate and enjoy a very wholesome Air, so that they
have very little need of Clothing and this they seem to be fully
sencible of, for many to whome we gave Cloth &c to, left it carelessly
upon the Sea beach and in the woods as a thing they had no manner
of use for. In short they seem’d to set no value on any thing we gave
them, nor would they part with any thing of their own for any one
article we could offer them; this in my opinion argues that they think
themselves provided with all the necessarys of Life and that they have
no superfluities.

To me this does seem to be a flight of Noble-Savage Romanticism,
but rather an appreciation, within the lights of Cook’s day, of the ecological
knowledge and skills of northern Australia’s ‘Indian’ peoples in adjusting their wants so as to survive in a land where the far greater part of soil ‘can admit no cultivation’, where fresh water was dangerously scarce, and where the seas were filled with terrible hazards, such as coral reefs, sharks and crocodiles — an environment, in short, that had in a mere five weeks tested the ‘civilized’ European sailors to their limits.22

Cook also praised the Indians’ uncanny ability with spear and boomerang. They could kill birds, fish and animals that were so shy, he wrote, that the Europeans had ‘found it difficult to get within reach of them with a fowling piece.’23 He was impressed, too, by the warriors’ ‘facility’ in the use and spread of fire, and their skills in building outrigger canoes fourteen feet long, using only shell, coral, stone and the abrasive leaves of the wild fig tree. Even their smaller, less sophisticated, bark canoes were perfectly adapted to the local marine habitat of mangroves, shoals, reefs and mud banks. Being so light they were ‘better’, he thought, for navigating ‘perhaps than vessels of any other construction’24.

This last observation must have been underscored when the Master concluded towards the end of July that he could find no passage, forward or back, for a ship of the *Endeavour*’s size and draft. Banks neatly summarized Cook’s resulting predicament and, in the process, coined a term to describe the coral maze that the Captain would quickly adopt. ‘We were ready to sail with the first fair wind but where to go? — to windward was impossible, to leeward was a Labyrinth of Shoals, so that how soon we might have the ship to repair again or lose her, quite no one could tell’.

On August 6, having decided to warp the *Endeavour* out of the harbour and embark hesitantly behind the pinnace on an East by North course, Cook quickly found himself stymied. With a gale blowing, he anchored the ship and climbed the masthead, but ‘nothing was in view except breakers, extending from the S. round by the E. and out to sea
beyond the reach of our sight… Being now convinced that there was no
passage to the sea, but through the labyrinth formed by these shoals, I was
altogether at a loss which way to steer…’.

Subsequent reconnoiters from the headland promontory of Cape
Flattery revealed a further shock — what Banks called a ‘ledge of rocks’ or
‘a Grand Reef’ that blocked them from entering the open sea. For the first
time they’d sighted what we today call the outer Barrier. It was a fearsome
spectacle. On the 11th August, in the desperate hope that ‘the shoals would
end’, Cook and Banks rowed to the steepest of three adjacent islands.
They named the place Lizard Island after its giant Monitors, guardians,
perhaps, of the Labyrinth. ‘When I looked around’, Cook recorded, after
he’d climbed to the top of the island’s highest hill, ‘I discovered a reef of
rocks, lying two or three leagues without the islands, and extending in a line
N.W and S.E. further than I could see, upon which the sea broke with a
dreadful surf…’ Even so, he glimpsed faint signs of some breaks in this
vast rampart, which prompted a flicker of hope.

Within hours he and his officers decided that they must attempt to
navigate one of these small channels into the open sea, rather than risk
being ‘locked in by the great reef’. The latter could mean having to turn
back, lose the prevailing winds to the East Indies, run out of provisions and
die of scurvy or starvation. On the 13 August they followed the Master’s
pinnace into a narrow opening, as he sounded the depths every few yards.
Once through the channel, they found themselves in a ‘large sea rolling
from the SE’, with no ground at one hundred and fifty fathoms.

Cook took the opportunity to reflect on the unprecedented ordeal
they’d come through:

Our change of situation was now visible in every countenance, for it
was most sensibly felt in every breast: we had been little less than
three months entangled among shoals and rocks, that every moment
threatened us with destruction; frequently passing our nights at
anchor within hearing of the surge that broke over them; sometimes
driving towards them even while our anchors were out, and knowing that if by any accident, to which an almost continual tempest exposed us, they should not hold, we must in a few minutes inevitably perish. But now, after having sailed no less than three hundred and sixty leagues, without once having a man out of the chains heaving the lead, even for a minute, which perhaps never happened to any other vessel, we found ourselves in open sea, with deep water; and enjoyed a flow of spirits which was equally owing to our late dangers and our present security.”

We may guess that he and the sailors celebrated that night with a meal of green turtle.

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5 Banks, *Journal*, vol. 2, pp. 70-72.


7 Cook, *Account*, p. 545.


