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## The East Coast of the North Island—zoological collections of the *Endeavour* voyage

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Joseph Banks and his party made the first observations and collections of the New Zealand fauna by Europeans between 9 and 29 October 1769 while at sea and at three sites on the North Island East Coast: Poverty Bay, Anaura Bay and Tolaga Bay. They collected insects, molluscs, fish and birds, many of which were drawn and described on board. Using this material, later authors allowed some species to enter the permanent scientific literature. Parkinson's drawings and Solander's manuscript descriptions are still extant, but the original specimens in many cases have been lost. The collections with respect to the East Coast are discussed, and some brief comment is made on the current state of the fauna, and its environment.

**Keywords:** New Zealand; East Coast North Island; James Cook; Joseph Banks; Daniel Solander; *Endeavour*; insects; molluscs; fish; birds

### Introduction

This paper is written in anticipation of a celebration of the transit of Venus in 2012, and the landing of James Cook, and the naturalists and crew of the *Endeavour*, at Tolaga Bay, in what is now known as Cooks Cove. Here the ship was able to take on water and firewood, celery grass—an important adjunct to their diet—and where, not least, the naturalists added considerably to their plant and animal collections. All this was done in a climate of amicable relations with local Māori. This paper will look not only at Tolaga Bay, but also at two other East Coast landing sites, Poverty Bay and Anaura Bay where collections and observations were also made. The East Coast is important in that it gave Europeans the first opportunity to make substantial collections of plants and animals in (to them) a new country and in what was already a changed environment, destined to be further changed by European colonists.

As their plant collecting will be discussed elsewhere, reference in this paper is largely to zoology. Examined are: the process of collecting and the results, the fate of the collections, and the state of the fauna and its environment today.

### Collecting—who and how

With Joseph Banks in New Zealand were the Swedish naturalist Daniel Solander, the artists and assistants Sydney Parkinson and Hermann Spöring, and Banks's two servants. Other members of the *Endeavour* crew, including Cook himself, sometimes lent a hand in collecting. In New Zealand, as elsewhere, the emphasis was on plant collection, given Banks's enthusiasm for botany. At any time their collection plan (we must assume they had one) would have been subject to local conditions, including interactions with indigenous people, terrain and weather. Collection of plants,

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including scaling trees for flowers and fruit, brought them into contact with insects and birds. It was evident that more colourful or audible insects were actively pursued, and others were picked up because of their association with wood collection or carrion (Andrews & Gibbs 1989). Along with containers for plants, it is likely they took nets for butterflies and other winged insects, and storage boxes. Some of the party carried guns for birds, shot for both food and science. The ship was well equipped with fishing lines and nets, although fish were often subject to trade with Māori. Molluscan shells, we can surmise, were picked up more or less casually by the naturalists and crew, were extracted fresh from the rocky shore, or found attached to seaweeds. On board, the fish were described by Solander and sketched or painted in watercolours by Parkinson, before being preserved in casks of spirits. Insects were pinned and dried. Unfortunately locality information for shells and insects was imprecise, although better in the case of the paintings and manuscript descriptions of fish. There is no record of birds collected on the East Coast being illustrated by Parkinson.

### The fauna then—zoological collection in 1769

Inevitably Banks and his retinue started collecting specimens almost as soon as they set foot ashore on 08 October 1769—their enthusiasm pent up by weeks at sea and the anticipation of this being the sought-after southern continent, with all its imagined variety of fauna and flora. However, their hostile reception at Poverty Bay (Turanganui) limited their collection to ‘not above 40 species of Plants’ probably collected on 10 October—their only clear, and less troubled, day ashore. The landing party shot some ducks, possibly grey duck (*Anas superciliosa*), but these were as much for the table as they were for their collections (Banks 1962). Parkinson saw ‘a Fulica, or bald Coot, of a dark blue colour, and a Black-bird, the

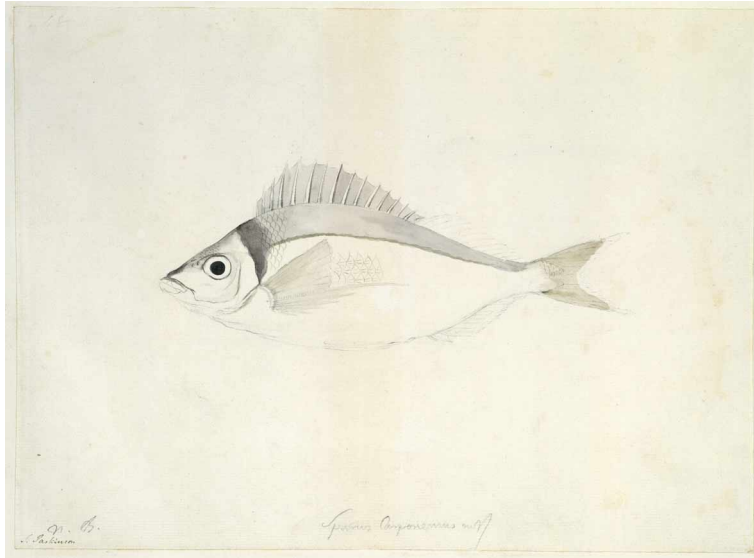
flesh of which was of an orange colour and tasted like stewed shell-fish’ (Parkinson 1773).<sup>1</sup>

The 15th of October found them off Cape Kidnappers, where Māori waka came alongside to trade fish. From this distance it is difficult to assess the degree to which specimens from this source contributed to the naturalists’ collections, as opposed to simply transferring the catch to the galley. The *Endeavour* was equipped with fishing gear, and when circumstances permitted it was put to use. However, there is every reason to suppose that in this instance the naturalists examined the Māori catch—why wouldn’t they? Banks’s journal describes waka with ‘nets [sic] and other fishing implements in them’ and that the first boats ‘sold all their fish’ and were then replaced by others until an altercation ensued followed by the attempted kidnapping that gave Cape Kidnappers its name.

Sydney Parkinson sketched fish that came aboard although, in the case of those traded, ‘none of their fish was quite fresh and some of it stank intolerably’ (Parkinson 1773). He drew the tarakihi (*Nemadactylus macropterus*) (Fig. 1), butterfish (*Odax pullus*), marblefish (*Aplodactylus arctidens*), and scarlet wrasse (*Pseudolabrus miles*) (Fig. 2). Solander made notes on another species, the red pigfish (*Bodianus unimaculatus*) (Andrews 1986). The butterfish and marblefish are herbivorous and caught by nets or spears rather than lines, suggesting that they, at least, were part of the trade described above. Parkinson’s drawings were partly finished with a light wash of watercolour to indicate specimen colouration. The fish were described by Solander in his unpublished *Pisces Australiae*.

On the evening of 20 October they went ashore at Anaura Bay to receive a friendly

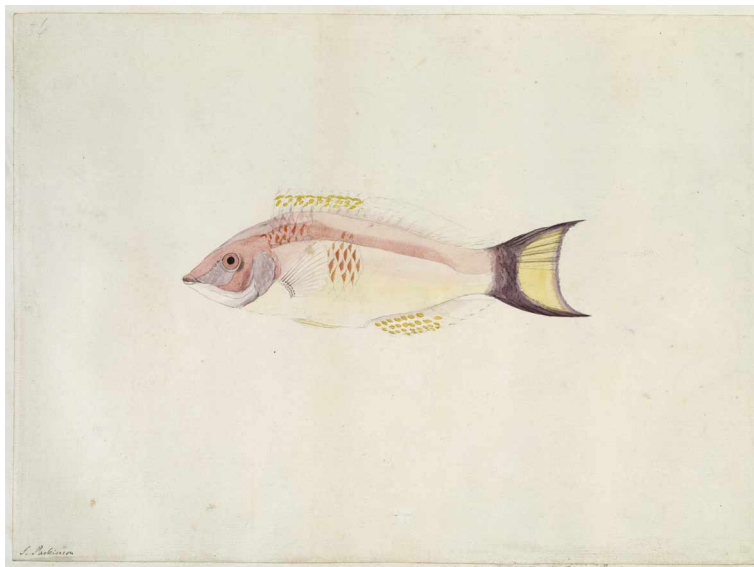
<sup>1</sup>Possibly the Australasian coot (*Fulica atra australis*) but the colour suggests it was more likely a pukeko (*Porphyrio porphyrio melanotus*). The black bird may have been a tui (*Prosthemadera novaeseelandiae*) (Medway 1976).



**Figure 1** Tarakihi (*Nemadactylus macropterus*) painted by Sydney Parkinson, in the vicinity of Cape Kidnappers. Reproduced by permission of the Trustees of the British Museum.

reception that encouraged them to spend the next day collecting. Banks's party was able to move about the bay unhindered and found 'many plants and (shot) some most beautiful [sic] birds' (Banks 1962).

Kahawai (*Arripis trutta*) was described from Anaura Bay by Solander—a species sketched by Parkinson, although it may have been drawn from elsewhere (Eschmeyer & Fricke 2011). Barnacles (*Lepas* sp.) were also collected from



**Figure 2** Scarlet wrasse (*Pseudolabrus miles*) painted by Sydney Parkinson, in the vicinity of Cape Kidnappers. Reproduced by permission of the Trustees of the British Museum.

Anaura Bay and described by Solander. As elsewhere, insects and shells were probably collected but locality data are missing. It is also possible that a pencil sketch of a rock lobster (*Jasus edwardsii*) was made here by Parkinson—one of only two invertebrates he drew in New Zealand. At Anaura Bay ethnological observation of Māori by Banks included reference to the introduced dog and Māori gardens. A sketch made by Spöring of Anaura Bay and the watering place shows extensive Māori cultivations near the shore with a bush backdrop (Lysaght 1979).

Tolaga Bay was their next and to date most lengthy stopover, untroubled by hostilities. Arriving on 23 October, Banks, Solander and their assistants were busy ashore for the next few days botanising and collecting birds. Trading in fish began almost immediately, although we must allow for the possibility that people from the *Endeavour* caught fish for themselves. Fish recorded were: red gurnard (*Chelidonichthys kumu*), spotty (*Notolabrus celidotus*), sand flounder (*Rhombosolea pleiea*), red cod (*Pseudophycis bacchus*), kahawai (*Arripis trutta*), and stargazer (*Genyagnus monopterygius*) (Richardson 1843). They did well, Banks describing their return on board with ‘our treasure of plants, birds, etc’ (Banks 1962). Although many plants were collected, little is known about bird and insect collection here. Parkinson noted ‘many beautiful parrots, and birds of various kinds, one in particular that had a note very much like our blackbird’. The parrots were possibly one or both of the red-crowned parakeet (*Cyanoramphus novaezelandiae novaezelandiae*) and North Island kaka (*Nestor meridionalis septentrionalis*). There is no record of these species being drawn by Parkinson, and the first description of a red-crowned parakeet was based on specimens from Cook’s second voyage (Medway 1976).

Parkinson and Cook admired the Māori gardens and noted the presence of the rat (kiore) and dog (Beaglehole 1974). Hermann Spöring sketched the watering place at Tolaga Bay showing bush reaching down to the fore-

shore, and one of the Māori inhabitants holding a rock lobster (Lysaght 1979). Spöring was the source of an ornithological mystery: he was recorded as having seen a large brown bird with an enormous tail, some yards in length, which does not fit the description of any New Zealand species (Banks 1962). On the morning of 29 October the *Endeavour* sailed north, around East Cape, to continue their circumnavigation of New Zealand and observation of its animals and plants.

### The fate of the collections

The fate of the zoological collections on their return to England is a long and, in some ways, a disappointing story given that Banks’s grand plans for publication of the voyage science did not reach fruition, or at least not in the way that he intended (Whitehead 1969, 1978; Medway 1976; Andrews 1986). Here we can briefly consider what of their East Coast collections might have survived for later study and description.

Beginning with the insects: 38 of the 40 New Zealand species from the *Endeavour* voyage were described by the Danish entomologist Johann Fabricius in *Systema Entomologiae* (Fabricius 1775) (Fig. 3). Thus the large black sand scarab (*Pericoptus truncatus*) becomes the first published description of a New Zealand species using Linnaean nomenclature. Unfortunately all of the Fabrician descriptions gave only ‘nova Zelandia’ as the locality. It is possible that some of the insects came from the East Coast. Tolaga Bay has been designated a type locality for the weevil *Catoptes interruptus* (Kuschel 1969) although Anaura Bay is also a candidate (Andrews & Gibbs 1989).

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*truncatus*. 12. Sc. scutellatus, thorace retuso cornu brevi truncato, capite mutico  
 Habitat in nova Zelandia. Muf. Banks.  
 Statura et magnitudo S. nasicornis, supra niger subtus piceus. Caput truncatum muticum. Thorax  
 reti-

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Figure 3 Part of the description of the large sand scarab (*Pericoptus truncatus*) by JC Fabricius in *Systema Entomologiae*, 1775.

Fourteen species of New Zealand shells from the voyage have been identified (Andrews 1986). Most are common and might have been picked up on the East Coast although their locality is given as ‘New Zealand’ or ‘Oceano Australi’ in contemporary literature. New Zealand shells were illustrated in the German periodical *Der Naturforscher* from 1774 onwards, with the frequent use of vernacular names. An exception was the first New Zealand shell to be given a valid Linnaean name, the nesting mussel (*Mytilus impacta*), by Johann Hermann (Hermann 1782). Eight New Zealand shells are still found in the Banks collection in the Natural History Museum, London—including the nesting mussel from the first voyage.

Few fish collected on the East Coast lasted to become type specimens that formed the basis of scientific descriptions. One possible exception is the sand flounder collected from Tolaga Bay, still in the collections of the Natural History Museum, London (Richardson, 1843; Eschmeyer & Fricke 2012). A number of Solander’s unpublished descriptions and Parkinson’s watercolour drawings were later used in the synonymies and taxonomic history of several species.

The fate of the birds was little better than the fish. Two birds, a tui and South Island kōkako, were given by Banks to the collector Marmaduke Tunstall. The tui, a stuffed specimen, was illustrated in Peter Brown’s *New Illustrations of Zoology* (1776) under the name of ‘New Zealand Creper’, but without an accompanying scientific name. However, it was the first published illustration of a New Zealand bird (Medway 1976; Andrews 1986). The tui could have been collected at any of the locations visited by the *Endeavour* naturalists—including the East Coast—although its geographical origin is a mystery.

To conclude this section, what can be said in broad outline about their East Coast experience, given it was their first contact with the New Zealand fauna and flora? To begin with it did not live up to any expectations they might

have had of the fabled southern continent. Indeed, the New Zealand fauna as a whole did not excite Banks greatly, although he was impressed with the variety of fish and shellfish. They investigated the few coastal areas where the ship could land them, but their explorations provided only a snapshot of the fauna and some of the most novel elements of it would be missed. The East Coast visits, then, reflected this state of affairs. Given the demands of botanical collecting and the ship’s schedule, we cannot be too surprised at the result. One valuable observation, for the East Coast in particular, was that of human-induced changes taking place through burning, horticulture and mammal introductions, which would directly impact on the fauna and flora.

### **The fauna now**

Of the three sites considered here only Anaura Bay with its more than 200 hectares of regenerating bush reserve can currently be considered to be anything like natural (it includes mature Pūriri trees). The other two—Poverty Bay, close to the Cook memorial, and Cook’s Cove at Tolaga Bay—have been substantially modified in the interests of farming and commerce and cannot be expected to support a fauna of birds or insects of any depth.

A bird list compiled in the 1980s by the Department of Conservation for the Anaura Bay Reserve comprises nine native species, none of which can be linked to Banks’s collections or observations with the possible exception of the tui. Of the parrots, only the North Island kaka is occasionally seen in the Poverty Bay area, and the grey duck is still seen in the ranges backing the East Coast (D. McLean, DOC, pers. comm. 2011).

In 1988 the Cook landing sites were revisited, and insect collections made on dates similar to the earlier expedition (Andrews & Gibbs 1989). Six insect species were found that were collected by the *Endeavour* naturalists from the East Coast. Taking all the Cook landing sites into account, the authors found

that habitat changes since European contact had resulted in a decline in insect species, and it would be difficult now to repeat the variety collected by Banks and the others. On the other hand there are some important species still extant that they overlooked in their collecting.

The fish are mostly relatively common species, with some—kahawai, tarakihi, red cod, stargazer, sand flounder and butterfly—available commercially, or taken by recreational fishers. Almost all the fish mentioned were recorded in a survey of fish of the East Cape region (Roberts & Stewart 2006). Likewise, it is probable that most of the marine molluscs collected from the East Coast in 1769 can still be found there in coastal habitats.

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