

The traditional Māori ‘internal-barb’ fishhook

Chris D. Paulin

Museum of New Zealand Te Papa Tongarewa, PO Box 467, Wellington, New Zealand
(chrisp@tepapa.govt.nz)

ABSTRACT: Pre-contact Māori used a variety of fishhook designs to target fish species in different habitats. Following the introduction of metal hooks by Europeans, many traditional fishing practices were abandoned and the mātauranga, or knowledge, surrounding the use of the different hooks was lost. However, mātauranga contained in ancient Māori karakia, or incantations, documented by early historians reveals clues to how some of the traditional hooks functioned.

KEYWORDS: mātauranga, matau, Māori fishhooks, pre-European fishing techniques, hook design.

Introduction

European explorers were quick to note the profusion of fish in New Zealand waters and the importance of fishing to Māori. William Anderson, ship's surgeon on the *Resolution* during Cook's third voyage in 1777, commented on the odd shape of the hooks used by Māori, noting that 'they live chiefly by fishing, making use ... of wooden fishhooks pointed with bone, but so oddly made that a stranger is at a loss to know how they can answer such a purpose' (Beaglehole 1967). Joseph Banks, on the first Cook voyage in 1768, noted that 'Their hooks are but ill made, generally [*sic*] of bone or shell' (Beaglehole 1962). Early explorers, such as Pottier de l'Horme, an officer on de Surville's ship *St Jean Baptiste* in 1769, expressed doubt as to the efficiency and function of Māori fishhooks (Ollivier & Hingley 1982), while European settlers dismissed them, stating they were 'very clumsy affairs' (Polack 1838; Baucke 1905). Ethnologists and archaeologists throughout the twentieth century also questioned the Māori hooks, which were described as 'impossible looking' and 'shaped in a manner which makes it very difficult to imagine could ever be effective in catching a fish' (Hamilton 1908; Beasley 1928; Leach 1998).

Prior to the European introduction of metals to New Zealand, indigenous Māori relied on natural materials of shell, bone, ivory, wood and stone to make fishhooks

(Hamilton 1908; Beasley 1928; Best 1929). Sharp points and barbs required for piercing and holding the fish on the line, as with present-day metal hooks, could not easily be manufactured from these materials owing to their sometimes brittle nature. Because natural materials lack the strength of metals, hook design had to be a compromise so that the hook functioned efficiently to catch fish without breaking. As a result, traditional Māori fishhooks differed markedly in design and function from modern metal hooks (Paulin 2007, 2010).

Large hooks were composite and made with differing materials – strong, curved wooden shanks lashed firmly to stout bone, shell or stone points (Fig. 1). Shanks were made by training growing plants and young saplings into the desired curve; the saplings were then harvested after they had grown and become rigid. Large composite hooks were used to capture the bigger reef-dwelling fishes such as groper (hāpuku, *Polyprion oxygeneios*), bass (moeone, *P. americanus*), ling (hokorari, *Genypterus blacodes*) and sharks, including bronze whaler (toiki, *Cacharinus brachyurus*). Smaller species were taken with hooks made from a single piece of bone or shell (Best 1901, 1929; Matthews 1911; Beasley 1928; Crosby 1966; Leach 2006; Paulin 2007).

Māori soon recognised the superiority of metal over natural materials for manufacturing tools following the arrival of European explorers. James Cook gifted metal tools to



Fig. 1 Composite hook with a strong, curved wooden shank, made by training a growing plant to the desired shape and lashing it to a bone point, 128 × 99 mm (Museum of New Zealand Te Papa Tongarewa: ME 014838).

Māori and frequently provided metal nails in exchange for supplies of fish. At Hawke Bay, a few days after sighting New Zealand in late October 1769, Cook gave local Māori gifts of linen cloth, trinkets and spike nails, and noted that they placed 'no value' on the metal nails (Beaglehole 1955). Several weeks later, however, in February 1770 off Cape Palliser, 200 km south of Hawke Bay, the crews of three canoes boarded the *Endeavour* and requested nails, which they had heard of but not seen (Salmond 2003).

Archaeological studies have shown that early Māori fishhooks (ascribed to the period of Māori culture referred to as 'Archaic', or 'Settlement', phase) were predominantly made from one piece of bone (Davidson 1984; Furey 1996). Wooden Archaic hooks with flax lashings are rare, but this is perhaps because they are less likely to survive well in archaeological sites (Hjarno 1967; Furey 1996; Jacomb 2000).

Even old wooden hafted tools such as adzes are rarely found archaeologically, as the wooden hafts and fibrous lashing material decay, leaving only the stone heads (Buck 1949).

Fishhook material and form

Three principle types of one-piece bone hooks were used by Māori: circle or C-shaped rotating hooks; U-shaped, or jabbing, hooks; and an unusual design referred to as 'internal-barb', or 'shank-barb', hooks (Skinner 1943). The rotating circle hook function has been described by Leach (2006) and Paulin (2007), and the use of jabbing hooks has long been understood, as their function is similar to that of present-day metal hooks. However, the nature and function of the internal-barb hook has not been documented.

Māori manufactured single-piece fishhooks using bone or shell, and rarely stone. The absence of large terrestrial animals limited source material to bone from moa, seals, stranded whales, dogs and humans. Moa bone became increasingly rare as the birds were driven to extinction; however, the abundant whale populations around the coasts provided a steady supply of bone through beach strandings, and suitable material was then transported throughout the country via extensive trading networks (Henare 2005). Human bone was prized as a material for fishhooks, and the bone of enemies was doubly valuable as its use was considered an act of revenge. Hooks made from human bone were sometimes given special names, and their use often led to prolonged tribal warfare (Taylor 1855; Tregear 1904; Best 1929).

The maximum size of one-piece bone and shell hooks was determined by the strength of the material required to land a large fish and by the size of the bone itself, hence they rarely exceeded 75–80 mm in length. Although bones from moa and stranded whales could be used to make larger hooks and were readily available, a hook could easily snap when subjected to the stress of a large fish pulling its point limb against the line attached to the shank limb. There are numerous archaeological examples of broken hook shanks in museum collections (Furey 2002; Leach 2006). One-piece bone hooks were made with a broadly rounded curve to spread the load and reduce the chance of the hook breaking; hence circular bone hooks were stronger than hooks with a narrow angle, which allowed tension to be focused at the bend (Paulin 2007).

Large, strong bone hooks made in two sections by lashing a point directly to a bone shank resulted in a stronger hook,

but the straight shank did not allow the point to be directed inwards as required for the rotating circle hooks. The use of these hooks was generally, but not always, restricted to the manufacture of lures (Fairfield 1933; Paulin 2007). Because of the inherent weakness of bone, such hooks were comparatively thick in contrast to modern steel hooks. This thickness made it difficult to thread bait onto the hook, and instead it was tied to the lower portion of the hook by means of a thin string (pākaikai) attached to a small hole or lug at the base of the hook. The point of the hook was left bare, free of any bait, to ensure the hook functioned efficiently.

Hook function

Rotating circle hooks (Fig. 2)

Circle hooks functioned by rotating. The stout but often bluntly pointed bone point of the hook acted as a guide, directing the fish's jawbone through the narrow gap between the point and the shank, into the loop of the circular hook, thus acting as a trap or snare to hold the fish. The fishing line was attached to the snood (a short length of line permanently connected to the hook, bound with a whipping of fine twine to protect it from the teeth of the fish), which in turn was lashed to the hook shank in a narrow, angled groove, with the line leading from the inner head of the shank so that when under tension the line pulled at right angles to the point of the hook. This caused the hook to rotate, away from the direction of the point, pivoting on the point and trapping the fish's jawbone without penetrating the flesh.

Circle hooks fished using hand lines could rotate under increasing tension as the fish moved away. Once snared around the fish's jaw, the hook could not reverse its direction of rotation (Nordhoff 1930; Forster 1973), and hence there was no need for Māori to use rods to provide leverage to 'set' the hook (Paulin 2007). An alternate rotating hook theory has been proposed in which it is suggested that increased leverage on the hook as the fish swam away caused the hook to be driven forward, causing the point to penetrate the fish behind the jawbone (Leach 1973, 2006). However, this is not possible, as the snood attached to the fishing line, tied to the inner side of the head of the shank at right angles to the point of the hook, caused the hook to rotate away from the direction of the point under tension (Paulin 2007).

U-shaped hooks (Fig. 3)

U-shaped, or jabbing, hooks required the use of short rods. These hooks were fished with a short line and the rod was used to flick the fish out of the water into a canoe, in a



Fig. 2 Rotating circle hook, 80 × 53 mm (Museum of New Zealand Te Papa Tongarewa: ME 002237).



Fig. 3 U-shaped, or jabbing, hook, 67 × 50 mm (Museum of New Zealand Te Papa Tongarewa: ME 013790).

manner similar to that used when trolling with pā kahawai and pohau mangā (Buck 1949). The U-shaped hook did not have a barb, and the fish was held on the line by keeping tension on it during the short time between hooking and retrieving the fish. Jabbing hooks did not rotate and the snood attached to the line was tied to the hook shank parallel to the direction of the point for maximum efficiency. U-shaped hooks are much less common archaeologically than C-shaped rotating hooks, but were particularly abundant at the Chatham Islands, where they appear to have been the preferred design.

Internal-barb hooks (Fig. 4)

Internal-barb, or shank-barb, hooks are smaller than other bone hooks (usually less than 40 mm in length) and are characterised by two bluntly pointed internal barbs (kāniwha), which create a narrow gap at the top of the loop of the hook. The barbs were not used as a cleat to hold bait (Buck 1949), nor was the design simply a convenient way of narrowing the gap during manufacture of the hook (Leach 2006). Instead, the barbs performed the same function as the main inturned point of the circle hook, and were an integral part of this hook design. The point of the small hook was not directed inwards as with the larger one-piece bone or composite wooden hooks, but was directed forward, and served to guide the hook into position. As with the larger circle hook design, the hook rotated when pivoted by tension on the line pulling in a direction away from the direction of the point.

Internal-barb hooks are more commonly represented from archaeological sites in sheltered eastern bays and north-eastern coasts of New Zealand (e.g. Northland to Bay of Plenty; Hawke Bay; Golden Bay, Nelson), although there is a paucity of archaeological research in west coast areas of both main islands (Trotter 1956). No fish species are limited to an eastern distribution pattern and it is unlikely that the hooks were designed to target a particular fish species. Several examples of internal-barb hooks were collected by Cook and other early explorers in the nineteenth century, including some with attached portions of fishing line (Paulin 2010).

New Zealand flax (harakeke, *Phormium* spp.) provided fibrous material for fishing lines and was recognised in the early 1800s as equal, or superior in quality, to the jute, hemp and sisal in use by Europeans at the time (Polack 1838; Beaglehole 1955). Lines were made from prepared flax fibres, or muka, by rolling the fibres on the bare thigh with the palm of the hand. Two lengths of rolled twine, or takerekere,



Fig. 4 Internal-barb hook, 30 × 18.8 mm (Museum of New Zealand Te Papa Tongarewa: ME 023204).



Fig. 5 Internal-barb hook with line, 30.4 × 26.9 mm (Museum of New Zealand Te Papa Tongarewa: ME 004877).

were then rolled together to produce two-ply twine, or kārure, and many different forms of twine and cordage could be produced with varying numbers of strands (Best 1929). Internal-barb hooks in museum collections with original fishing lines attached are unusual in that the line is as thick as, or even thicker than, lines attached to large composite wooden hooks (Fig. 5).

Mātauranga

Because of the limited interest in fishing by Europeans, details of how Māori fishing equipment was made and used were not widely documented. Some general observations of Māori fishing activities were recorded by explorers and early settlers (Yate 1835; Polack 1838; Dieffenbach 1843; Taylor 1855; Colenso 1869, 1891; Mair 1873), but by the end of the nineteenth century historians were beginning to note that the details of fishing knowledge had been lost as the kaumātua, or elders, passed away (Hamilton 1908; Matthews 1911). It was not until the early twentieth century that Elsdon Best (1924, 1929) prepared what is arguably one of the most important records of Māori life and culture. Best himself noted that little information on Māori fishing had been recorded and that he ‘could do little to supply the deficiency’. However, some knowledge was also recorded in Māori, a format that was not readily available to scholars and researchers who did not speak the language.

Best (1929) noted an ancient karakia, or incantation, that was chanted over hooks before fishing to ensure they functioned effectively, and quoted it as an appendix in Māori but without a translation. Versions in Māori and English are reproduced here:

Na, mo te matau hi ika tenei karakia

Tenei au he atu [ʔau tu], he au noho ki nga tipua aro
nui, aro rangi, aro nuku
Ki tenei taura nga tipua, na nga tawhito nuku, nga
tawhito rangi
Ki enei matau riki, ki enei matau piha, ki enei matau
pakiwaha
Kia tau aro, kia tau whiwhia, kia tau rawea mai
Kia piri mai ki tenei tama, kia rawea mai ki tenei
tamaroa
He awhi tu, he awhi noho taumanu kia tamaua take
Kia tamaua piri, kia kai nguha, kia kai aro, kia kai
apuapu
Kia taketake nui, kia taketake aro ki enei matau
Hirere awa, hirere au, hirere moana
Tamaua, tamaua take, eke eke uta ki runga I taku waka.. e
Hui.. e! Taiki.. e!

This is an incantation for a fishing hook

This is the current that connects us to the elements from
the heavens above to the earth below
Bound here by the ancient elements
Bless these small hooks, these hooks for the gills, these
hooks for the mouth
That they strike true, that they are well fastened, that
they are wrapped well
That they become one with this fisherman
Embracing the line, held firm in the canoe, holding fast
Holdfast hooks, hunt your prey, strike true, hook me
many fish
Be long lasting my hooks
From the rivers, from the currents, to the ocean
Hold firm, board this vessel, journey with me
We are united!

Internal-barb hook function – ‘ki enei matau piha’

The large numbers of internal-barb hooks from archaeological sites now in museum collections indicates that they were widely used by Māori, but the actual method of use has been forgotten and lost over the 240 years since the arrival of Europeans and the introduction of metal fishhooks.

Within the karakia recorded by Best, two lines relate to the way the fishhooks functioned. In line four, the phrase ‘kia tau whiwhia, kia tau rawea mai’ (that they are well fastened, that they are wrapped well) possibly refers to circle hooks, which trapped the jaw by rotating and holding the fish on the line without penetrating the flesh. The phrase in the preceding line ‘Ki enei matau riki, ki enei matau piha’ (Bless these small hooks, these hooks for the gills) suggests a unique method of fishing that may be related to small internal-barb hooks.

Fish gill filaments are supported on a series of gill arches (branchial arches). The fish takes in water through the mouth, where it passes between the gill arches and over the gills, and exits through the gill opening, which is shielded by the gill cover (operculum). The anterior or leading edge of each gill arch is lined with comb-like structures known as ‘gill rakers’ (Parker & Haswell 1897). These enable water to flow continuously in through the mouth and out via the gill opening, passing over the gill filaments to supply oxygen, while trapping food items which can then be swallowed. When the mouth of the fish is closed, the gill rakers lie flat along the gill arch; as the fish expands the branchial cavity by opening the operculum to expel water and debris, the gill arches flare outwards and the rakers become erect, forming a grid that allows water and detritus to pass, while preventing larger food items from being ejected. Fish feeding on the sea floor will often suck in quantities of sand and shell

debris, along with food items, by suddenly expanding the gill covers. Sand, small shell fragments and detritus can then be ejected between the branchial arches and out through the gill opening.

Small internal-barb hooks possibly functioned by slipping between the gill arches and catching elements of the gill arch in the narrow gape between the two barbs, in a similar manner to the rotating circle hook, in which the gape functioned as a trap to hold the jawbone (Paulin 2007). In an introduction to a paper on oilfish (*Ruvettus pretiosus*) fishing by Gudger (1927: 206), Professor Clark Wissler of the American Museum of Natural History mentioned small shell hooks, resembling an open ring, which were used to 'seize the gills of the fish and hold him firmly, but without injury' in scattered locations across the Pacific, including Japan and the states of Alaska and Washington in the USA.

While it is possible that a small hook could catch the branchial arch as unwanted material is ejected through the gill opening (Davidson & Leach 2008), even a very small hook could not pass through the mesh or grid created by the gill rakers of small to medium-sized pelagic fish, which have long, closely spaced gill rakers. However, the relatively widely spaced gill rakers of very large benthic fish, such as ling, bass and groper, species that can reach lengths of 2 m, would enable the small hook to slip between the gill rakers and catch on the branchial arch. Hence, the small hooks were used with heavy, multi-stranded fishing lines that were capable of holding a large fish.

Conclusions

Metal fishhooks were avidly sought after by Māori, and many nineteenth-century explorers, sealers and whalers often used metal fishhooks as a form of currency (Dieffenbach 1843; Wakefield 1845). In the 1800s, metals were used by Māori to make fishhooks, which were carefully fashioned into shape following the traditional circle design, with barbless, inturned points. These hooks were quite distinct from the mass-produced J-shaped metal hooks introduced by Europeans, which were widely available by the mid-1800s. The overwhelming number of cheap mass-produced metal hooks, and the ease of making hooks from copper ships' nails, wire and even horseshoes, soon led to the abandonment of traditional hook-making by Māori, and the subsequent loss of knowledge.

Mātauranga, or knowledge, surrounding the form and function of the internal-barb hook design is suggested within

the incantation documented by Best and provides valuable clues to how these traditional fishhooks functioned. The occurrence of the internal-barb hook in archaeological sites along the eastern coast and large sheltered bays probably reflects areas where it was possible to fish regularly from canoes well offshore and target large reef-dwelling fishes at depths – reefs that were not as accessible on the exposed west coast, where larger waves prevented safe fishing at distances from shore. A single large fish would have provided Māori with significantly more food than much smaller species such as barracouta (mangā, *Thyrsites atun*), blue cod (rāwaru, *Parapercis colias*), snapper (tāmure, *Pagrus auratus*) and others whose bones are more numerous in middens. However, heads of large fishes were disposed of at sea by Māori as an offering to the god Maru (Best 1929; Buck 1929), a practice that would result in a lack of diagnostic head bones in middens.

Although species such as bass, groper and ling are not represented in the archaeological record in large numbers (Leach 2006), they were extremely common in coastal waters of New Zealand prior to the development of large-scale commercial fishing in the twentieth century. In 1886, it was reported that ling were usually caught in 3–8 fathoms (6–15 m) and were cast up on beaches outside Wellington Harbour after heavy gales in 'extraordinary profusion' (Sherrin 1886). Graham (1956) reported that from 1900 to 1905 fishermen could hook two to three dozen groper per hour off Otago Peninsula, and that between 1922 and 1927 two men working could catch five to fifteen dozen of fish (80 lb, or 36 kg) per day. Today, these species are generally taken at depths of 200–500 m (Paul 1986).

The capture of large benthic reef-dwelling fishes using small fishhooks to entangle the branchial gill arch represents a fishing method that is unknown today and has not been documented for any other culture (Gabriel *et al.* 2005). The only accounts of the practice are recorded in mātauranga provided by Māori karakia, and in passing reference by Professor Wissler as evidence of cultural diffusion (Gudger 1927). The recent rediscovery of the rotating circle hook design is regarded as an innovation for improved landing rates in long-line pelagic and deep-water fisheries, and, as fish are rarely harmed by being gut-hooked, it has also been regarded as innovative in recreational catch-and-release fisheries (Taylor 2002; Cooke & Suski 2004). The use of small gill-hooks by Māori may also represent a previously unrecognised technological achievement. Unfortunately, the removal of large benthic and demersal fish species from

coastal waters by intensive commercial fishing in the twentieth century (Graham 1956; Paulin & Paul 2006; Maxwell 2010) may make experimentation with this fishhook design and confirmation of its effectiveness problematic.

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A unique Māori fishhook: rediscovery of another Cook voyage artefact

Chris D. Paulin

Museum of New Zealand Te Papa Tongarewa, PO Box 467, Wellington, New Zealand
(chrisp@tepapa.govt.nz)

ABSTRACT: Examination of Māori fishhooks known to have been collected during Captain Cook's voyages of exploration (1768–79) suggests that ornately carved examples were extremely rare pre-European contact. One uniquely carved hook, held in the National Museum of Ireland, can be confirmed as a Cook voyage artefact through an illustration in an unpublished early nineteenth-century portfolio by Kenelm H. Digby, held in the New South Wales State Library, Sydney, Australia.

KEYWORDS: matau, Māori fishhooks, pre-European, carving, Cook voyage artefact.

Introduction

The Pacific voyages of Captain James Cook (1768–79) revealed to the Western world an entirely new vista of geographic and scientific knowledge (Beaglehole 1955, 1961, 1967). The first voyage was, in fact, a scientific mission organised by the Royal Society of London to observe the transit of Venus from Tahiti. The British Admiralty went to considerable lengths to ensure that on each of his voyages Cook was accompanied by learned men of science, their assistants and artists. The scientists included Joseph Banks, Daniel Solander, Georg and Johann Forster, Anders Sparrman, Sydney Parkinson, Alexander Buchan, David Nelson, William Hodges, John Webber and others, whose primary interests were botanical and zoological, rather than ethnographical. The importance of the 'natural curiosities' collected on these voyages of discovery was recognised, and many biological specimens – well documented with notes on localities and dates of collection – were taken back to England. They were later formally described and published, becoming type specimens for numerous species. In contrast, although scientists, officers and crew made extensive collections and observations of ethnographic materials, the objects themselves were often poorly documented (Kaeppeler 1978a) and frequently not highly regarded.

For example, in an address to the Dublin University Zoological and Botanical Association in 1856, the chairman, Dr Robert Ball, opened the meeting by saying: 'Tonight Professor Harvey favours us with some remarks on the inhabitants of the Fiji Islands, whose arms, etc., you see hung around the room. Collections of this kind have been sneered at but very improperly as a right knowledge of them is of great importance in the very difficult and very high study of ethnology' (Freeman 1949).

Māori artefacts were obtained by early explorers and taken back to Europe, but few were documented and many in museum collections cannot now be identified. Ethnographic artefacts known to have been collected during Cook's voyages that have endured to the present day represent the earliest exchanges between Māori and European, and are objects that have not been influenced by the impact of European culture and technology.

Many artefacts from Cook's voyages were distributed to wealthy patrons or sold to collectors of 'artificial curiosities' and, after 200 years of curio trading, most have now lost their association with those voyages. Hence, not surprisingly, few fishhooks can be verified as Cook artefacts (Kaeppeler 1978a, b; Paulin 2010). The date of collection of many fishhooks can be broadly established through museum catalogue records and known details of donors; however,



Fig. 1 Fishing hooks from New Zealand illustrated in Kenelm H. Digby’s ‘Naturalist’s companion’ (1810–1817: 215) (New South Wales State Library, Sydney, Australia: digital order number a155030).

many hooks passed from collector to collector and original details have been lost. Today, artefacts from Cook’s voyages are represented in almost every major European museum (Kaepler 1978a, b; Paulin 2010), and more than 100 smaller museums and private collections throughout Europe hold collections of early Māori artefacts (Hooper 2006; Arapata Hakiwai, pers. comm. 2010).

The often haphazard composition of late eighteenth-century and early nineteenth-century European museums reflected the then widely held belief that the diversity and complexity of nature was positive proof of the existence of a divine creator. This encyclopaedic approach is well demonstrated by Kenelm Henry Digby’s ‘Naturalist’s companion’, a portfolio prepared from specimens and objects in the museums of Trinity College and the Dublin Society in Ireland in the early 1800s (Digby 1810–1817). This portfolio, now held in the New South Wales State Library (Sydney, Australia), includes numerous illustrations of a wide variety of animals and birds, as well as of many

human artefacts, including two Māori fishhooks (Fig. 1). Digby’s stated intention was to highlight to all ‘but the most insensible mind wonder at the formation and the various properties, and dispositions of the Brute Creation’. Comparison of Digby’s (1810–1817) manuscript with published catalogues from contemporary museums, such as the Leverian Museum (Holophusikon) or William Bullock’s Museum, shows how close his conceptual work was to the layout and interpretation of these museums (New South Wales State Library 2001).

The National Museum of Ireland collection

The collection of Māori artefacts held in the National Museum of Ireland (NMI) includes 16 composite fishhooks (mataua) and 14 lures (pā). Some of these hooks and lures were obtained during Cook’s voyages, while others were collected in the late 1800s (Freeman 1949; Cherry 1990).

On Cook's second voyage, James Patten of Ulster sailed as surgeon on the *Resolution*. Patten later settled in Dublin. His collection of Pacific artefacts (including several Māori fishhooks), was subsequently presented to Trinity College, Dublin, around 1777. Another collection in Dublin came from Captain James King, who sailed on Cook's third voyage and who took over command of the *Discovery* following the death of Captain Charles Clerke (Freeman 1949; Cherry 1990). The items collected by King on the voyage were not presented to Trinity College until after his death in 1784; they were donated by his father, the Reverend James King, who was Dean of Raphoe in County Donegal. The Dublin Marine Society donated further 'curiosities' to Trinity College in 1792, which must also have been collected on one of Cook's voyages (Freeman 1949).

Most items in the collection of Trinity College were transferred to the National Museum of Ireland (established in 1877) in 1882 and 1885 (Freeman 1949; Cherry 1990), but the clubs, spears and other weapons were not transferred until 1894 (National Museum of Ireland 1895; Cherry 1990). It is unclear when the fishhooks were transferred, and no complete catalogue of the objects from Trinity College exists, so it is not possible to distinguish fishhooks collected by Patten from those collected by King.

In 1909, the museum purchased a collection of Māori artefacts from Dr Isaac Usher, who had acquired them from his father-in-law, Captain George Meyler. Meyler fought in the New Zealand land wars between 1860 and 1889, and had deposited some items in the museum in 1891. Further items were later added by travellers such as Dr James McKellar, and from other collections donated to the Science and Art Museum of the Royal Dublin Society, which has now become the National Museum of Ireland (Cherry 1990).

Unfortunately, the numerous items from New Zealand in the National Museum of Ireland were not clearly labelled and became mixed during reorganisation of the collections in the early twentieth century, to the extent that it is not possible to identify items collected during Cook's voyages from those in the Meyler and later collections (Cherry 1990). However, one composite wooden hook with a bone point (Fig. 2) held in the museum's collection (item NMI AE1893-760) is of great interest. It is stoutly made and has a detailed carving of a full human figure on the shank. This hook is one of two illustrated in the early nineteenth century by Digby (1810–1817) (Fig. 1, left). The second hook illustrated by Digby (Fig. 1, right) is also a composite wooden hook with a bone point and may possibly be item



Fig. 2 A unique composite Māori fishhook with a carved figure on the shank, almost certainly from Cook's second or third voyage (National Museum of Ireland, Dublin: AE1893-760).

NMI AE1893-761, which has a carving on the head of the shank; however, the illustration is poorly executed and does not allow a positive identification.

Discussion

Māori fishhooks with carved ornamentation collected by early explorers or recovered from archaeological sites are rare (Hjarno 1967: 44; Davidson 1984: 68; Furey 1996: 76; Paulin 2010). In his journal of Cook's first voyage, Sydney Parkinson illustrated nine Māori fishhooks, but only one – a large wood and bone composite hook (Parkinson 1773: pl. XXVI, fig. 6) – has any ornamentation, which is in the form of a carved figure, possibly a manaia (a stylised human figure with a bird-like head), on the snood knob (Fig. 3, left). The whereabouts of this carved hook, if it still exists, is unknown, and the remaining eight hooks illustrated are plain. No other Māori fishhooks with carved ornamentation are known among hooks confirmed as being collected during Cook's

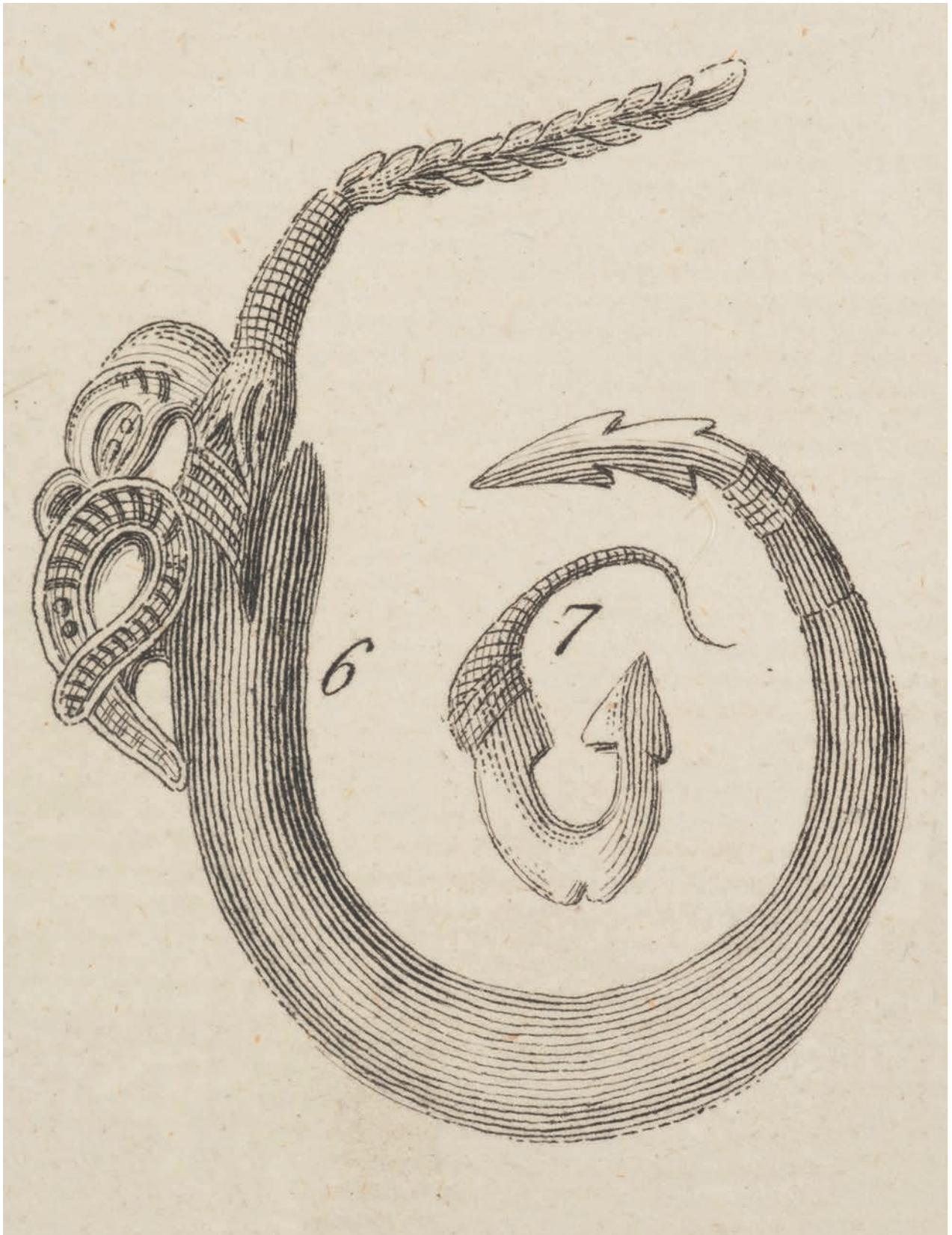


Fig. 3 A carved composite hook and one-piece bone hook illustrated by Sydney Parkinson from Cook's first voyage (detail from Parkinson (1773: pl. XXVI, figs 6–7)).

voyages. Nor are carved examples represented among hooks collected by other early explorers, or among hooks that have unconfirmed but possible links to Cook's voyages. In contrast, many fishhooks obtained by collectors and museums from the mid- to late 1800s often have ornately carved snood knobs, and some hooks obtained by museums in the early 1900s also have detailed and intricate carving on the shanks (Paulin 2010).

Many carved hooks, including examples ranging from those with carved masks to full human figures, are known from among hooks obtained by collectors in the latter part of the nineteenth and early twentieth centuries (e.g. Harry Beasley, Walter Buller, Alexander Turnbull and William Oldman collections). However, because these items passed from collector to collector and through various sale rooms in Britain before ending in museum collections, they generally lack detailed information on their origins or historical context. The two carved hooks in the National Museum of Ireland collections (NMI AE1893-760 and 761) must have been acquired by the museum prior to 1817, given the date of Digby's portfolio (1810–1817) in which they are illustrated (Fig. 1). Therefore, these hooks cannot be part of the Meyler or later collections.

The small carved mask on the head of the shank of hook NMI AE1893-761 held in the National Museum of Ireland superficially resembles a carved Māori fishhook in the Museum of Archaeology and Anthropology, Cambridge, England (item 1977.818), which was obtained by Captain John Erskine in 1850, and another hook held in *Musée du Quai Branly*, Paris, France (item 1864 71.1887.14.18), donated by Sir Walter Buller (1838–1906). However, the date of collection of Buller's hook is unknown. Other hooks with similar carved masks are held in many museum collections; however, their dates of collection cannot be verified.

Wooden components of artefacts, including fishhooks, have not persisted in archaeological sites (Buck 1949: 197), except in a few waterlogged locations (Davidson 1984: 62, 109) and dry caves (Skinner 1924), hence the full extent of carving of pre-contact fishhooks is unknown. Early Māori fishhooks of the Archaic period resemble hooks from other areas of Polynesia, and can be distinguished from later hooks of the Classic period, which have more ornamentation and reflect a cultural change that began in northern areas of New Zealand. However, the distinction between the earlier and later styles relies largely on eighteenth- and nineteenth-century evidence and undated pieces to construct a hypothetical sequence of change (Davidson 1984: 211).

The demand for artefacts by European tourists and collectors in the latter part of the nineteenth century resulted in the production of a large number of replica hooks that cannot easily be distinguished from earlier examples (Paulin 2010).

Kaeppler (2010) illustrated two composite Māori fishhooks from the Blackburn collection in Hawai'i. One hook (Kaeppler 2010: 356, fig. 513) is plain, lacking any carving, and has a provenance to Joseph Banks on Cook's first voyage. The second hook (Kaeppler 2010: 19, 356, fig. 512) has a richly carved mask extending over half the shank and pāua-shell inlays; its provenance is attributed to the London Missionary Society and Kaeppler states that it is referred to in a publication by Cousins (1895: '158–159' [error for 138–139?]). However, a comparison of the hook depicted in fig. 512 by Kaeppler (2010) against the hook illustrated by Cousins (1895: 139, fig. 32) shows that they are not the same object, because Cousins' hook has a small, crudely carved mask extending over only one-fourth of the shank, and a different lashing. Kaeppler (2010) described the Blackburn hook as: 'This type of ritual hook was used to catch fish for the gods, priests, chiefs, and chiefly women', but provided no reference for the source of this information.

There is no evidence that pre-European contact Māori produced ornate hooks for ritual purposes (Paulin 2010), and the hook illustrated by Kaeppler (2010) is most likely a late-1800s example made for the tourist trade. Māori ceremonies conducted before line-fishing expeditions involved the lines and hooks that were to be used to catch fish. The Reverend Richard Taylor noted several religious ceremonies connected with fishing and described how, the day before Māori went to sea, they arranged all their hooks around some human excrement, and used an incantation, or *karakia*, 'which will not bear being repeated' (Taylor 1855: 83). All available evidence suggests that these hooks were plain and for practical purposes, without ornate decorations.

Conclusions

Unlike many other richly carved Māori artefacts attributed to the voyages of James Cook (Shawcross 1970; Kaeppler 1978a; Davidson 1984; Coote 2000; Hooper 2006; Kaeppler *et al.* 2009), carved fishhooks that can be dated to pre-European contact are extremely rare. It is possible that pre-contact carved fishhooks were collected by early explorers but were gifted to wealthy patrons and remain in private collections, rather than being donated to public museums.

Detailed ornamental carving of fishhooks was not easily achieved until steel tools became available after the arrival of Europeans. The production of many ornate hooks in the late 1800s and early 1900s by both Māori and European forgers was in response to demand created by European dealers and collectors (Watt 1990; Day 2005; Paulin 2010). Māori were shrewd entrepreneurs and it is clear that these hooks were not intended to catch fish; rather, they were made to catch the eye of the Europeans. Ornate fishhooks are examples of a formerly rare category of taonga, or prized possession, that came to be specifically designed and produced for their desirability as trade items; this process mirrors that of the most internationally identifiable Māori symbol, the hei tiki (Beck & Mason 2010).

The National Museum of Ireland Māori fishhook NMI AE1893-760 (Fig. 2) is unique. The illustration in Digby (1810–1817: 215) (Fig. 1) confirms it as from Cook's second or third voyage, and it is the only known existing example of a Māori fishhook with elaborate carved ornamentation in the form of a full human figure on the shank whose date of manufacture can be reliably given as prior to the mid-1800s.

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