

Māori fishhooks in European museums

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ABSTRACT: Māori and other Polynesian fishhooks held in museums throughout Europe were examined from collections in Russia, France, Austria, Ireland, Scotland and England. Among the hundreds of Māori hooks available, less than two dozen can reliably be attributed to the voyages of James Cook and other early European explorers, while many others are possibly of Cook origin but cannot be verified. Most museum collections include hooks made in the period between the 1880s and 1920s, when demand from ‘curio’ collectors led to many replicas or fakes being produced for trade purposes. These Māori fishhooks are vital to our understanding of how traditional Māori hooks were manufactured and functioned.

KEYWORDS: Māori fishhooks, composite hooks, trolling lures, one-piece hooks, Cook’s voyages, Reinhold and Georg Forster, Joseph Banks, European museums, fakes.

Introduction

In 1768, Joseph Banks, naturalist aboard the ship *Endeavour* on the first of Captain James Cook’s three Pacific voyages of exploration, commented on the unusual shape of Māori fishhooks, which, in his view were ‘ill-made’ (Banks *in* Beaglehole 1962). Subsequently, other early New Zealand explorers, settlers and historians have suggested that Māori hooks were ‘odd’, ‘of doubtful efficacy’, ‘very clumsy affairs’ or ‘impossible looking’ (Polack 1838; Baucke 1905; Hamilton 1908; Beasley 1928). Even recent archaeologists (Leach 1998) have commented on the traditional Māori hook, stating that it is ‘shaped in a manner which makes it very difficult to imagine could ever be effective in catching a fish’.

Prior to European contact, Māori practised a mixed horticultural and fishing subsistence economy, and it is unlikely that they could have afforded to rely on any fishing technology that was inefficient. Furthermore, the unusual circular design of Māori fishhooks was used throughout New Zealand; therefore there must have been some advantage in using these hooks in preference over other possible designs. William Anderson, ship’s surgeon on board the *Resolution* during Cook’s third voyage in 1777, noted that Māori ‘live chiefly by fishing, making use ... of wooden

fishhooks pointed with bone, but so oddly made that a stranger is at loss to know how they can answer such a purpose’ (Anderson *in* Beaglehole 1955: 811).

Two hundred and thirty years later, a study of Māori fishhooks held in the Museum of New Zealand Te Papa Tongarewa (Te Papa) and other New Zealand museum collections (Paulin 2007) showed that the unusual design of rotating fishhooks was related to how the hooks functioned, catching fish by rotating away from the direction of the point and trapping the jaw of the fish, rather than penetrating the fish in the manner of a modern metal hook, or as proposed by Leach (1973, 2006). During that study it was observed that many of the hooks regarded as traditional or authentic Māori fishing hooks were crudely made, often incorporating non-traditional materials such as linen thread and fibres other than those from native New Zealand plants such as flax (harakeke, *Phormium* spp.), cabbage tree (tī, *Cordyline* spp.) or bushman’s mattress (mangemange, *Lygodium articulatum*) for lashings. At least one example was found where engineer’s chalk was used to replicate the bone point, and others where the bone points were lashed to the wooden shank with wire, concealed by crude lashings of flax (Paulin, pers. obs.). Many of these poorly made hooks were collected in the late nineteenth and early twentieth centuries, and few had good provenance details.



Fig. 1 Sydney Parkinson, artist aboard the *Endeavour* on the first of Cook's three voyages (1768–71), included drawings of several Māori fishhooks in his journal, captioned 'Various Kinds of Instruments Utensils &c, of the Inhabitants of New Zealand, with some Ornaments &c, of the People of Tierra del Fuego & New Holland' (Parkinson 1773: pl. XXVI).

Because of documented evidence of the production of fake Māori artefacts in this period (e.g. Watt 1990; Day 2005), it was concluded that many of the non-archaeological Māori fishhooks in New Zealand museum collections could not be reliably interpreted as hooks made for fishing. In order to determine traditional fishhook design used by Māori, it was necessary to examine hooks with known provenance, and particularly those that were collected by eighteenth-century European explorers prior to the cultural changes that followed colonisation of New Zealand.

More than 2000 ethnographic artefacts, including dozens of fishhooks, were collected during Cook's three Pacific voyages (Kaepler 1978a). However, the popularity of 'Cook' artefacts for 'cabinets of curiosities' in the nineteenth

century, and subsequent extensive trading between collections, led to items being dispersed widely throughout European museums. Through publications such as those of Kaepler (1978a,b) and European museum catalogues (many of which are now available online), it was possible to locate numerous examples of Māori fishhooks collected by Cook and other eighteenth-century explorers (Fig. 1).

In addition to the objects that have been traced with certainty to Cook's voyages, many others are present in museum collections that are thought to be from these expeditions. Documentation is, however, often poor and their true provenance may never be fully established.

Supported by a 2009 Winston Churchill Memorial Trust Fellowship, the author examined fishhooks at the following

institutions: Peter the Great Museum of Anthropology and Ethnography, Kunstkamera, St Petersburg, Russia; Musée du Quai Branly, Paris, France; Museum für Völkerkunde, Vienna, Austria; National Museum of Ireland, Dublin, Ireland; National Museum of Scotland, Edinburgh, Scotland; Hunterian Museum, Glasgow, Scotland; Museum of Archaeology and Anthropology, Cambridge, England; Pitt Rivers Museum, Oxford, England; and the British Museum, London, England.

Terminology

In order to be able to describe fishhooks in museum collections accurately, it is necessary to provide a list of technical terms used and also a glossary of Māori terms for fishing gear:

Technical terms

Composite hooks Hooks made using a variety of materials, e.g. wood shank with a bone, shell or metal point attached.

Point Māori fishhooks and trolling lures were made using simple barbs (usually of bone or shell), lashed to wooden, stone or shell shanks. These barbs are referred to as ‘points’ throughout this paper. Māori fishhooks rarely have a reverse-pointed barb at the distal end of the point, as found in modern metal hooks.

Rotating hook A circular hook with an inturned point that rotates away from the direction of the point when under tension while a fish is played. These hooks may be made from a single piece of bone, or be composite and made of wood with a bone or shell point lashed in place.

Shank The shaft of a fishhook.

Shank line An extension of the fishing line attached to the anterior end of the shank of a trolling lure, which continues along the shank to secure the point.

Snood lashing The lashing on the anterior or proximal end of the hook shank that connected the snood to the hook. The snood was a short line permanently attached to the hook and was used to secure the hook to the fishing line, and it was protected from sharp fish teeth by a whipping of fine line made of prepared New Zealand flax.

Trolling lure A straight-shank, unbaited hook, towed behind a canoe and also hand-casted at river mouths.

Māori terms

Hī ika To fish with a line.

Māhē A stone sinker.

Matau A suspended fishhook.

Matire rau, tautara A fishing rod. Rods were used only to keep several lines apart to prevent tangling and not to ‘angle’ for fish as with modern rods.

Muka Prepared New Zealand flax fibre.

Nape aho A fishing line (after Beasley 1928).

Niwha A reverse barb.

Pā An unbaited trolling lure. Lures made with pāua shell (abalone, *Haliotis* spp.) are referred to as ‘pā kahawai’ (kahawai, *Arripis trutta*, are medium-size coastal pelagic fishes of the family Arripidae; they are also known as ‘Australasian salmon’, being found in temperate Australasian waters, but are not related to true salmon, family Salmonidae).

Pākaikai A bait string, used to tie the bait to the hook. The thickness of traditional hooks made of wood or bone prevented the bait being threaded onto the hook as in modern metal hooks (after Beasley 1928).

Pohau mangā A barracouta lure, a simple wood lure with a bone point (barracouta or mangā, *Thyrsites atun*, is a large pelagic predatory fish of the family Gempylidae, or snake mackerels, found in temperate waters of the southern hemisphere, and should not be confused with the tropical barracudas, family Sphyraenidae).

Takā A snood lashing (after Beasley 1928).

Whakamia The whipping of the snood lashing with a fine line to protect it from the fish’s teeth (after Beasley 1928).

Whewheta A fine line used for whipping the snood (after Beasley 1928).

Māori fishing

Prior to European contact, fishing was a significant component of Māori subsistence, and the abundant coastal fish stocks provided a rich and readily available resource, with methods of procuring fish based on careful observations by generations of fishermen. Fish were taken with nets (some over a mile [1.6 km] in length), traps, spears, and lures (pā) or suspended hooks (matau) (Fig. 2). Fishing equipment was made of wood, stone, bone, ivory or shell, lashed with fibres from plants such as harakeke (flax), tī (cabbage tree) or mangemange (climbing fern), based on technology and designs developed over many hundreds of years (Best 1924, 1929; Buck 1949; Watt 1990; Paulin 2007).

Following the exploration of New Zealand by James Cook and other Europeans in the late 1700s, sealers and whalers began visiting the region and traded extensively with Māori for provisions and other services, providing



Fig. 2 Māori fishhook, Hunterian Museum, Glasgow. Listed in the accession book as a donation from Dr George Turner, but it has been coated in black varnish, implying that it was part of William Hunter's original collection and therefore possibly collected during one of Cook's voyages (Hunterian Museum, Glasgow, Scotland: E.403/1).

metal tools (including large numbers of metal fishhooks) as a form of currency (e.g. Best 1924, 1929; Buck 1949; Salmond 2003). The superiority of metal for working implements quickly became apparent, and stone, wooden or bone tools as material symbols of Māori culture were discarded in a feverish desire that spread like a pandemic (Buck 1949). Māori use of traditional materials to make fishing equipment rapidly declined in favour of other fibres, metals and, more recently, synthetic materials. However, Māori continued to replicate traditional forms in preference to the hook shapes introduced by Pākehā (Europeans).

European settlers began arriving in New Zealand in the early 1800s. These settlers were primarily concerned with farming and showed little interest in Māori fishing activities or in developing fisheries themselves, and in 1840 guaranteed Māori the 'full exclusive and undisturbed possession of their ... fisheries' under the Treaty of Waitangi (Orange 1990), although this provision (Article Two) of the Treaty was not always recognised in subsequent fisheries legislation (e.g. the Sea Fisheries Act 1894). Because of the limited interest in fishing, details of how Māori fishing equipment was made and used were not widely documented. Some general observations of Māori fishing activities were recorded (e.g. Yate 1835; Polack 1838; Dieffenbach 1843; Taylor 1855; Colenso 1869, 1891; Mair 1873), but by the turn of the twentieth century historians were beginning to note that the kaumātua (elders) had passed away and the details of fishing knowledge had been lost (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, noting that 'there appears to have been but little information placed on record concerning Maori usages connected with fishing, and unfortunately I can do little to supply the deficiency' (Best 1929).

Although Best and, subsequently, Te Rangi Hīroa (Buck 1949) gathered some useful information, particularly with regard to net-making, the European attitude is clearly demonstrated by Best's comment on night fishing: 'the peculiar term mangoingoi was applied to fishing from the beach by night, but as to why anyone should so fish at night, and also claim a specific term for doing so at unholy hours is more than I can say' (Best 1924). As commercial and recreational fishermen know, some of the best fishing is at night. Night fishing, and other fishing activities that were rarely encountered and only reported by Europeans by chance, were extremely important to Māori. For example, Matthews (1911) reported a night shark-fishing expedition at Rangaunu Harbour, Northland, in January 1855 that involved over 50 canoes and resulted in a catch of over 7000 sharks; one large canoe alone took 6 tons [6100 kg] of kapetā (rig, *Mustelus lenticulatus*) and tōiki (bronze whaler, *Carcharhinus brachyurus*).

The prolific fish stocks that existed around New Zealand 200 years ago have been greatly reduced by modern fishing technology, particularly in the latter half of the twentieth century, resulting in the biomass of certain species being reduced by up to 95% in some areas (Annala 1994; Paulin



Fig. 3 Wood-backed pāua-shell pā kahawai (A, bone point; B, wood point). These are typical examples of many (often crudely made) lures that were possibly manufactured at Parihaka and sold through James Butterworth's 'Curiosity Shop' in New Plymouth between 1880 and the early 1900s (Puke Ariki, New Plymouth: A, A57-788; B, A57-876).



Fig. 4 An overly carved and ornate hook, probably made for trade purposes, from the Beasley collection (British Museum, London: 944.Oc.2.171).

& Paul 2006). Unfortunately, as a result, the perception of the marine environment today is very different from the reality of the marine environment prior to European contact, and in recent years many well-documented reports of pre-European Māori fishing in the early literature have been dismissed as 'apocryphal' or 'extravagant fishy stories' (Leach 2006).

Artefact manufacture

The demand for Māori artefacts by collectors (Samson 2003) and early tourists (Baeyetz 1903) in New Zealand in the late nineteenth and early twentieth centuries led to the manufacture of large numbers of replica hooks and other items for trade (Watt 1990; Day 2005). Day (2005) suggested that in addition to 'fake' artefacts being manufactured in Europe and shipped to New Zealand for sale, Māori at Parihaka in the Taranaki region collaborated with Europeans to manufacture items ranging from hei kakī (pendants) to matau

(fishhooks) for tourists and collectors in the late 1800s, with one New Plymouth dealer's catalogue listing over 500 fishhooks for sale (Butterworth 1901) (Fig. 3).

As a result, many hooks in collections that were donated or sold to museums in the late nineteenth and early twentieth centuries (e.g. the Buller, Turnbull and Oldman collections) were made for the curio-hunting tourist rather than for fishing, and are replicas or even fakes (Fig. 4). As a consequence of this trade, there are few fishhooks in New Zealand museum collections, other than archaeological examples, that can be reliably interpreted as hooks made for fishing. Few archaeological examples have retained wood or flax components (Davidson 1984), and wooden hooks are not found in early sites owing to their poor survival (Furey 1996). However, wooden hooks and some fibre components have been recovered from some archaeological sites, such as Oruarangi (Furey 1996).

There are collections of early Māori fishhooks throughout Europe, with examples in museums in the United

Kingdom, Ireland, France, Austria, Germany, Italy and Russia (Kaepler 1978a,b), amongst others. The provenance of many traditional fishhooks in museums worldwide is poorly documented. This is a result of collections being accumulated as ‘artificial curiosities’ rather than systematic attempts to preserve traditional artefacts. The date of collection of many hooks can be broadly established through cataloguing dates and known details of donors, although many hooks passed from collection to collection and original details have been lost.

Many institutions also have collections of neolithic fishhooks from other cultures, which are of significant interest because of the similarity of design with Māori and other Polynesian fishhooks. This similarity has arisen from the use of natural components such as wood, shell and bone, and the associated limitations of the strength of these materials, requiring similar design solutions to produce an effective fishhook. Examination of neolithic bone hooks (4000–2500 yrs BP) from northern Europe in collections, and more recent (~1000 yrs BP) bone hooks from the Americas in collections in Paris, reveals a convergence of the design in different cultures, with localised variations in the form of the internal barb. The unusual design of the Māori fishhook was not unique, and was pre-dated by millennia in other mesolithic and neolithic cultures. However, this is only evident for one-piece bone hooks that have persisted in archaeological sites. Older European neolithic composite hooks made from wood and bone have not been found.

The European collections

In the eighteenth century the importance of natural history items collected by the scientists during Captain Cook’s voyages of discovery to the Pacific (e.g. Joseph Banks, Daniel Solander, and Reinhold and Georg Forster) was recognised, and specimens that had been carefully described were deposited in museum collections or sold to willing buyers. However, ethnographic objects at this time were regarded as ‘artificial curiosities’ and were not considered particularly valuable. They were obtained as mementos, not only by the natural historians, but also the officers and crews of the vessels (Kaepler 1978a).

On their return to Europe, the expedition members used the Māori curios they had collected to their own ends, willingly gifting them to royalty, admiralty, gentrified friends and learned colleagues. Other objects were gifted to patrons or private collectors in Britain, Germany and other European

countries, or were simply sold at whatever profit could be got. As the various collections were sold or disposed of, the artefacts found their way into private ‘cabinets of curiosities’ dispersed across Europe and, eventually, from there to public museums.

The often haphazard composition of late eighteenth- 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 ‘Naturalists companion’ manuscript (1810–17), which includes illustrations of two Māori fishhooks from the second and third Cook’s voyages, besides numerous illustrations of a wide variety of animals and birds (New South Wales State Library Catalogue 2001). 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 manuscript with published catalogues from early museums, such as the Leverian Museum or William Bullocks Museum in London, shows how close Digby’s work was in its conception to contemporary museums.

Today, artefacts from Cook’s voyages are represented in almost every major museum throughout Europe. Through the efforts of various researchers, particularly Kaepler (1978a,b), it is possible to identify some of the more important collections of Māori artefacts, and those that hold significant numbers of fishhooks.

By examining these fishhooks and comparing them with hooks made after European contact, it may be possible to distinguish replicas and fakes from traditional or authentic hooks. Details of the collections examined are given below under each institution visited during the course of this research.

Peter the Great Museum of Anthropology and Ethnography, Kunstkamera

Universitetskaya Embarkment, St Petersburg, Russia

Curator: Dr Arina Lebedeva

Kunstkamera was the first state museum established in Russia. In 1704, Tsar Pyotr Alexeyevich Romanov (Peter the Great) issued a decree establishing a collection of natural and human curiosities and rarities, including ‘new born freaks and found in soil unusual objects, unusual stones and minerals ... old inscriptions ... everything ancient and

unusual' (Arsenyev 1999). In 1716, a collection of a wide variety of exotic animals from around the world was acquired for the museum from the Dutch chemist and collector Albert Seba. The intention was to an attempt to show rarities and deformities of nature in a systematic manner, so as to reduce superstitious beliefs that were rampant in eighteenth-century Russia (Baird 2008). In the 1830s, the *Kunstkamera* collections were dispersed to newly established imperial museums (Ethnographical, Egyptian, Asian, Zoological, Botanical, Mineralogical and Peter the Great's Cabinet of Curiosities), then in 1878 the Russian Academy of Sciences made the decision to amalgamate several of these museums into the Peter the Great Museum of Anthropology and Ethnography.

The Pacific collections held at the Peter the Great Museum of Anthropology and Ethnography are among its most valuable. The first acquisitions from New Zealand and Oceania date back to the last quarter of the eighteenth century and include a collection assembled during Captain Cook's third voyage.

Cook's ships, the *Discovery* and *Resolution*, were resupplied at Kamchatka during their unsuccessful search for the Northwest Passage in May 1779 (it was from Kamchatka that the news of Cook's death was conveyed to Europe). As a result of the assistance provided by the Russian authorities to members of the voyage, Captain Clerke (who assumed command after Cook's death) gifted 'a complete assortment of every article' (Kaepler 1978b) from the islands they had visited in the South Seas. This collection had been largely assembled by William Anderson, ship's surgeon aboard the *Resolution*, who had died of tuberculosis in the Bering Sea. Eventually, the items were taken to St Petersburg and became part of the Academy of Sciences collection in *Kunstkamera* in 1780. This was the first collection held in Europe of Cook artefacts from the explorer's third voyage. No catalogues are available online.

The Cook collection of fishhooks comprises two one-piece stone hooks with no detailed locality data (these hooks were incorrectly described as 'black mussel shell' by Kaepler 1978b). These two hooks are not of Māori origin, but are possibly from the Society Islands. There are several Māori fishhooks in the collection, but none can be attributed to Cook. The Māori hooks, all obtained after 1843, include two unfinished composite wooden-shank hooks, lacking snood lashings and bone points; two bone points for composite hooks (attached to a display board – not measured), which have been completed with grooves to enable them to

be lashed to a wooden shank, but do not appear to have been associated with the unfinished wooden shanks; two pā kahawai lures with shanks made entirely from the rim of pāua shell, one with a bone point and the point of the second made from another portion of pāua-shell rim; and one post-European pā kahawai lure made from pāua shell lashed directly to a wire shank. In addition, there are two copper and three iron hooks (with complete lashings), as well as a triple 'spreader' lashing, obtained from the Dominion Museum, Wellington, in 1903.

Other Polynesian hooks in the collection – from Hawai'i (?), Samoa and the Marquesas Islands – include several oyster-shell lures with bone or turtle-shell points, and one turtle-shell one-piece hook.

HOOKS EXAMINED

From Cook's third voyage

One-piece hooks (stone, Society Islands?): 505-25 (82 mm length), 505-26 (89 mm length).

Other provenance

Composite hooks (wood, shank only): 736-235 (320 mm length), 1279-19 (145 mm length).

Pā kahawai (pāua-shell-rim shank with bone or shell point): 707-22 (63 mm length), 707-69 (75 mm length).

Metal hooks: 1279-15 to 1279-21 (12.5–90 mm length).

Musée du Quai Branly

Quai Branly, Paris, France

Curator: Dr Philippe Peltier

The Musée du Quai Branly holds the collections of two former Parisian museums: the Musée National des Arts d'Afrique et d'Océanie (Museum of African and Oceanian Arts), and the ethnographic collections from the Musée de l'Homme (Museum of Man). The Museum of African and Oceanian Arts was created after the colonial exhibition in 1931, while the Museum of Man was created in 1937 and inherited collections from an earlier ethnographic museum founded in 1878 (Guichard-Marneuf 2006).

The Musée du Quai Branly in Paris is one of the world's most important museums devoted to anthropology, ethnology and prehistory. Its collections are generally arranged according to geographical region, and include examples of neolithic fishhooks from around the world, numerous of which are from Polynesia. Neolithic fishhooks from other regions are of considerable interest as they demonstrate many design similarities to the early 'Polynesian-style' hooks – a consequence of the common use of materials such as bone

and shell, and the adaptations that have to be made to fish-hook design in order to accommodate inadequacies that arise from using natural materials. An online catalogue with images is available, although the database is incomplete and not all examples have been digitised.

The collection includes over three dozen Māori hooks. However, several are on permanent display and were not available for study. Twelve pā kahawai were examined: one made with wire backed with pāua shell; two pāua-shell shanks with bone points; two bone shanks with bone points; and seven wood-backed pāua shell with bone points, the oldest dated to 1898. There are also 24 composite wood- and bone-point rotating hooks. One crudely made pā kahawai lure in the collections (72.1987.2.29) has a paper label reading 'Fenton & Sons, 11 New Oxford St, London', with '£1798 o/f' in ink – this number is unlikely to be the date of collection, and appears to relate to a price. S.G. Fenton was a London-based artefact dealer from around 1895 to 1926 (Petch, PRM Oxford catalogue notes), and this lure is similar to others from the late 1800s.

The 'double-barb' design is characteristic of small bone hooks from different cultures – the collections at the Musée du Quai Branly include several examples of this hook design, made by South American Indians (Chile) and dated to around 1000 yrs BP. This collection also includes examples of hooks of similar age from North American Indians (California), with angled grooves for attaching the snood and inturned points (a characteristic of Māori and Polynesian hooks). Some of these hooks have an external barb that is characteristic of Polynesian shell hooks, particularly from Hawai'i, but is rare in Māori fishhooks.

The Musée du Quai Branly also holds two examples of bone-shank pā kahawai lures (without pāua-shell linings); one of these is of particular interest as it is one of the few examples of a Māori trolling lure with the shank line attached directly to the base of the point (as illustrated by Sydney Parkinson in 1773, pl. XXVI, fig. 4) (Fig. 1). This shank-line lashing supported the point when a large fish was played, but because of its presence it is not possible to determine if the line is simply tied around the base of the point or is secured through a hole drilled through the point, as in Polynesian tuna lures (Fig. 5).

The collection includes a large number of Polynesian 'bonito' lures. These lures consist of a mother-of-pearl shank, usually made of pearl-oyster shell, *Pinctada* spp., or pearl-oyster shell backed with whale bone, and a bone point, lashed together with plant fibres (Kaeppler 1978b: 117



Fig. 5 The fishing line of a straight bone pā (trolling lure) extends to the base of the bone point to secure the point and prevent it from slipping off the shank when playing a fish (Musée du Quai Branly, Paris: 72.66.465.1).

referred pearl oyster to *Meleagrina*, a junior synonym of *Pinctada*). These very delicately carved hooks were of great value, particularly in French Polynesia, and were considered to be a special gift for a guest at the time of Cook's voyages (Forster 1777; Nordhoff 1930). Other lures include an example of a trolling lure made using a toothbrush handle (trademarked 'Germania') as the shank, with a point carved from coconut shell (71.1934.188.568).

HOOKS EXAMINED

Not from Cook's voyages

Composite hooks (wood with bone point): 71.1883.66.1, 71.1883.66.10, 71.1883.66.11, 71.1883.66.12, 71.1883.66.13, 71.1887.14.18, 71.1934.33.271, 71.1934.33.272 (Buller), 71.1883.66.14, 71.1934.33.273, 71.1978.50.1.1-2, 72.66.459.2, 72.66.466.1-2, 72.66.467, 72.1987.2.3.

Pā kahawai (pāua shell with wood backing and bone point): 71.1950.30.523, 71.1950.30.525, 72.66.460.1, 72.1987.2.11, 72.1987.2.26, 72.1987.2.27, 72.1987.2.29; (pāua-shell-rim shank with pāua-shell point): 72.66.460.2-3; (pāua-shell-rim shank with wire point): 72.1987.2.28; (bone with bone point): 72.66.465.1, 72.66.459.1.

Other non-New Zealand hooks

Composite hooks (wood with shell point): 71.1927.5.2 (Tuamotu), 72.66.462.1; (bone with bone point): 71.1935.61.119 (Chile); (wood with wood point): 72.1987.2.5, 72.1987.2.6 (Polynesia), 71.1938.31.10 (Tuamotu); (wood with bone point): 71.1878.1.117 (Samoa), 72.66.462.2 (Solomon Islands?); (wood with metal point): 72.1987.2.17 (New Caledonia).

One-piece hooks (stone): 71.1935.61.55, 71.1954.20.394, 71.1954.20.396 (Chile); (bone): 71.1935.61.132, 71.1935.61.135, 71.1935.61.136, 71.1935.61.133, 71.1935.61.118.2, 71.1935.61.131, 72.56.135 (Chile), 71.1884.91.3063 (California), 71.1897.56.1 (Marquesas), 71.1934.188.1485 (Solomon Islands); (turtle shell): 71.1945.5.6 (New Caledonia); (ivory): 71.1879.10.13 (Hawai'i), 71.1884.91.3067; (shell): 71.1884.91.3065 (California), 72.66.468.3 (Marquesas), 71.1960.112.17 (Mangareva), 72.66.468.4-5 (Tahiti), 71.1948.54.3 (New Guinea), 71.1954.20.199 (Solomon Islands), 72.66.469 (Society Islands); (coconut shell): 72.1987.2.39, 71.1943.0.392, 71.1950.30.486 (New Caledonia), 71.1880.49.28 (Solomon Islands), 72.66.463.2.

Trolling lures (pearl-oyster shell with turtle-shell point): 71.1933.51.35, 71.1933.51.36.1-2, (Wallis and Futuna), 71.1954.20.194 (Polynesia), 71.1878.1.106 (Tahiti), 71.1939.81.17.3, 71.1943.0.421 (Polynesia), 71.1930.29.599 (Marquesas), 71.1934.188.1484 (Solomon Islands), 71.1936.32.26 (Mangareva), 71.1945.0.567 (Society Islands), 71.1954.20.192 (Tuamotu), 72.66.465.2-3 (Kiribati), 468.6-7 (Marquesas), 71.1974.146.52, 72.56.749, 72.66 (Tonga), 71.1954.20.198, 72.1965.1.21 (Solomon Islands), 71.1950.30.489, 71.1950.30.490; (wood with pig-tusk

point): 71.1950.30.491 (New Guinea); (ivory toothbrush handle with coconut-shell point): 71.1934.188.568 (Bougainville).

Museum für Völkerkunde

Maria Theresien-Platz, Vienna, Austria

Curator: Dr Gabriele Weiss

The Museum für Völkerkunde (Museum of Ethnology) in Vienna is one of the most significant ethnological museums in the world, with collections amounting to more than 200 000 ethnographic objects. One of its oldest collections derives from the Cook expeditions through the purchase of 238 objects in 1806 at the auction of the Leverian Museum contents in London (Donovan 1806). The Leverian Museum (also called the Holophusikon) was a private museum of natural history specimens and curiosities that had been accumulated and exhibited between 1775 and 1786 by Ashton Lever (Smith 1965; Gores 2000), and included the largest collection of Cook artefacts from the third voyage. Although Lever offered his museum's collections to the British Museum at a low price, the offer was refused on the advice of Joseph Banks, who stated that there was little of value in them (Kaeppler 2008), despite the Pacific material being described as 'the pièce de resistance of the Museum' (Smith 1985). Catherine II of Russia also refused to buy the collections, so Lever obtained an Act of Parliament in 1784 to sell it by lottery (King 1996). The collections were acquired by James Parkinson, who continued to display them following Lever's death in 1788, before they were finally dispersed in many lots at an auction held in 1806.

None of the Cook material available for examination included any New Zealand Māori fishhooks. However, the Cook collection contains numerous examples of lures and one-piece shell, wood and bone hooks from throughout Polynesia that are of interest.

The Museum für Völkerkunde also has an extensive collection of Māori artefacts collected by the Austrian naturalist Andreas Reischek, who travelled in New Zealand from 1877 to 1889. Reischek's collection encompasses 467 historically significant Māori artefacts, including 25 fishhooks (14 pā kahawai; five one-piece wooden hooks; one wood hook with a bone point lashed with wire covered by flax fibre; two wood hooks with metal points; and three metal hooks).

Reischek had been selected by Dr Ferdinand von Hochstetter to visit New Zealand to assist in setting up

displays in the Canterbury Museum, Christchurch, then under the direction of Dr Julius von Haast. In New Zealand, his work centred around the Canterbury, Whanganui and Auckland museums, but he was also a collector on his own account, amassing a vast collection of biological specimens as well as many objects of ethnographic interest. Between the years 1877 and 1889, he travelled extensively throughout New Zealand and many of the offshore islands, including the Chatham, Auckland and Campbell islands, and collected over 15 000 specimens of animals and plants. Although Reischek was friendly to many Māori, he showed little hesitation in taking objects of value to add to his collections.

The collection also includes three hooks collected by Otto Finsch, a German ornithologist (and curator of natural history at the Leiden and Bremen museums) who visited New Zealand in 1884–85 (one pā kahawai with a metal point; one wood-backed pā kahawai; and one composite wood hook with a metal point). The frequent use of metal suggests that most of the hooks in the Reischek and Finsch collections were probably made in the late 1800s. No images of the artefacts mentioned above are available yet through online catalogues.

HOOKS EXAMINED

Not from Cook's voyages

Composite hooks (wood with bone point): 42399 (Reischek); (wood with metal point): 42402, 42403 (both Reischek).

Pā kahawai (wood-backed pāua shell with bone point): 42407, 42408, 42409, 42410, 42411, 42412, 42413, 42414–19 (all Reischek), p6/1829 (unknown), 90243 (Finsch).

One-piece hooks (wood): 42396, 42397, 42395, 42400, 42401 (all Reischek).

Metal hooks: 42404, 42405, 42406 (all Reischek), 90244 (Finsch).

National Museum of Ireland

Kildare Street, Dublin, Republic of Ireland

Assistant Keeper: Dr Mary Cahill

The collection at the National Museum of Ireland includes material from two of Cook's voyages. On the second voyage, James Patten of Ulster sailed as surgeon on the *Resolution*, and later settled in Dublin. His collection was presented to Trinity College around 1780. Another collection came from Captain James King, who sailed on the third voyage and took over as leader of the expedition on the death of Captain Clerke of the *Discovery*, who himself had taken over after the death of Cook in Hawai'i. Further items were added to the

collections by travellers such as Dr James McKellar, and from other collections donated to the Royal Dublin Society and the Science and Art Museum, which has now become the National Museum of Ireland (Cherry 1990). Unfortunately, no complete catalogue of the objects from Trinity College exists, so it is difficult to document and identify items from Cook's voyages, or to distinguish those collected by Patten from those collected by King.

The collection includes 16 composite wood hooks with bone points, two barracouta lures and 10 wood-backed pāua-shell pā kahawai. Although the National Museum of Ireland is developing a digitised catalogue, no images of this material are as yet available online.

The Cook material includes several composite wood hooks with bone points; however, as most of the collection was registered after 1880, exact provenance details of many of the hooks cannot be determined. All of the pā kahawai and pohau mangā were also registered between 1887 and 1920. The two pohau mangā have bone points secured by thin wooden pegs through the bases – bone hook points were rapidly replaced by metal nails soon after European contact, so it is probable the hooks date from the late 1700s or early 1800s (Fig. 6). One pā kahawai comprises a pāua-shell-rim shank and point; one has a pāua-shell shank backed with a second pāua shell, and with a bone point; and the remainder are all wood-backed pāua shell with bone points. Two of the composite hooks were illustrated by Digby (1810–17) in his 'Naturalists companion', an apparently random compendium of natural history, ethnographic and antiquarian specimens from the museum collections (New South Wales State Library Catalogue 2001).

The National Museum of Ireland collection includes other hooks from Hawai'i (a bone hook comprising a bone shank and bone point lashed together), one-piece shell hooks from Tokelau, wood hooks from the Solomon Islands, and pearl-oyster trolling lures from Tonga and the Marshall and Solomon islands.

HOOKS EXAMINED

Some probably from Cook's voyages

Composite hooks (wood with bone point): 1880-1652, 1880-1655, 1893-751, 1893-755, 1893-756, 1893-754, 1893-752, 1893-753, 1893-757, 1893-758, 1893-759, 1893-760, 1893-761, 1909-144, 1909-145 (58–201 mm length).

Pā kahawai (pāua-shell shank with pāua-shell point): 1893-780; (pāua shell backed with whale bone, bone point): 1909-150; (wood-backed pāua shell with bone point): 742-11, 1887-276, 1887-277, 1909-149, 1909-151, 1909-152,



Fig. 6 Pohau mangā (barracouta lures) were made using long pieces of wood to protect the line from the sharp teeth of the fish. Bone points held in place by a wooden pin were rapidly replaced with nails after European contact (Museum of New Zealand Te Papa Tongarewa, Wellington: ME 003974).

1909-147, 1909-153, 1909-743, 1909-154, (95–112 mm length).

Pohau mangā (wood with bone point): 1909-146 (180 mm length), 1920-111 (136 mm length).

Other non-New Zealand hooks

Composite hooks (pearl-oyster shell with oyster-shell point): 1937-3624-5 (Marshall Islands); (wood with

wood point): 1893-776 (Solomon Islands, 230 mm length); (wood with pearl-oyster-shell point): 777-93, 778-93, 779-93 (Hawai'i, 180–210 mm length); (bone with bone point): 1658 (Hawai'i, 82 mm length).

Trolling lures (pearl-oyster shell with turtle-shell points): 1880-1781, 1893-765, 1893-768 (Tahiti), 1893-766, 1893-767, 1893-768, 1893-769, 1893-770, 1893-1657 (Tonga), 1923-183 (Solomon Islands), 1937-3624, 1937-3625 (Marshall Islands) (80–110 mm length); (whale bone backed with pearl-oyster shell, turtle-shell point): 1893-762, 1893-763, 1893-764 (Tonga, 180–210 mm length); (stone shank with shell point): 1923-338 (Gilbert Islands, 80 mm length).
One-piece hooks (shell): 1893-771, 1893-772, 1893-773 (Tokelau Islands, 90–95 mm length).

National Museum of Scotland

Chambers Street, Edinburgh, Scotland

Principal Curator: Dr Chantal Knowles

Tourism and the sale of souvenirs has been a vehicle for Māori economic recovery since the 1890s, when the travel agent Thomas Cook promoted an itinerary entitled 'Wonderland: Wellington to Auckland overland'. Ethnological souvenirs from the late nineteenth century have an ambivalent status in museums – they are valued for their age and exoticism, but where it is known that they were produced for the tourist market, they may be regarded as inferior examples of workmanship, less precious than those manufactured for native use. These souvenirs are often seen as hybrid ('invention of tradition') and therefore non-authentic specimens of purely indigenous material cultural tradition, and are rarely knowingly exhibited in ethnological displays. The notable exception is provided by the National Museum of Scotland, which has continually supplemented its collections with touristic material from New Zealand from the late nineteenth century and throughout the twentieth century (Henare 2005). This collection includes 41 Māori fishhooks, and is important in that it allows comparison of objects known to be made as souvenirs with the Cook examples. An online catalogue is available. However, although most items have been databased, few have images available as yet.

None of the hooks in the museum's collection can be traced to Cook. There are several composite wood hooks with bone points, including one (Fig. 7) that closely resembles hooks collected during Cook's voyages, by the Forsters (held in Göttingen) and by Patten and King (held in Dublin). Several other hooks with unusual reverse barbs



Fig. 7 Traditional composite hooks were made by training a growing tree branch into shape such that the snood lashings are at 90° to the point (National Museum of Scotland, Edinburgh: A.UC.525.C).



Fig. 8 Composite hook, possibly manufactured for catching seabirds (National Museum of Scotland, Edinburgh: A.UC523.C).

on the points that have been made using tree saplings trained into shape before cutting are also present. Unfortunately, collecting dates for most of these hooks are unknown. A few were collected by the Rattlesnake expedition, which visited the Bay of Islands briefly in 1850.

The collection includes two examples of hooks similar to those in New Zealand collections thought to have been made for catching albatross. These hooks are much smaller and more slender than the New Zealand examples, and may have been used for catching other, smaller seabirds (Fig. 8). They are too delicate for use as fishhooks. The collection also includes an interesting series of pāua trolling lures, illustrating the transition from shell shank and point, to the use of a metal point with a shell shank, a metal shank and point with shell, and wood-backed shell lures with bone barbs.

HOOKS EXAMINED

Not from Cook's voyages

Composite hooks (wood with bone point): A.UC.525 A and B (82.5 mm and 54.1 mm length, respectively),

A.UC.525 C (44.5 mm length), A.1898.10 (with resin over lashing, 91 mm length), A.1923.370, A.1923.371, A.1923.372, A.1929.175 (all 105 mm length).

Composite albatross hooks (wood with bone point): A.UC.523 A (110 mm length), A.UC.523 C (100 mm length).

Pohau mangā (wood with metal nail point): A.1923.373.

Pā kahawai (pāua-shell shank with pāua-shell point):

A.UC.527, A.1899.273; (wood-backed pāua shell with bone point): A.522.1, A.522.2, A.522.3, A.522.5, A.522.6, A.522.7, A.1888.687, A.1920.828, A.1938.71; (pāua-shell shank with wire point): A.1892.8; (pāua shell with wire shank and point): A.1938.87, V.2007.300.

Other non-New Zealand hooks

Composite hooks (wood with wood point): A.1933.564 (Solomon Islands, mislabelled as New Zealand).

Hunterian Museum

University Avenue, Glasgow, Scotland

Curator: Dr Sally-Anne Coupar

Objects in the Hunterian Museum at the University of Glasgow were accumulated over four centuries by a number of individuals, but particularly by William Hunter (1718–83), an eminent physician and obstetrician who bequeathed his collection to the university after his death. The collection is a mix of comparative anatomy and pathology specimens, as well as numerous cultural items and natural history specimens. The Hunterian is the oldest museum in Scotland, having opened in 1807, and houses material from all three of Cook's voyages (including specimens thought to have been collected by Sydney Parkinson and Joseph Banks). Its collection includes over 30 examples of 'Polynesian-style' fishhooks, as well as fishhooks from North America. High-resolution images of some of the items on permanent display are available online. The bulk of the collection is accessible via an online catalogue, but not all objects have been photographed and many records are incomplete.

The Māori fishhooks attributed to Cook's voyages were originally accessioned as a donation from Dr G. Turner, but they cannot be documented as Cook's as there are no items from New Zealand on the 1860 donation list. The shanks of these hooks have been coated in black varnish typical of old Hunterian objects, indicating that they may have been in the collection before 1870. These hooks may be those mentioned by Captain John Laskey in his 1813 account of the museum, in which case they were possibly collected during one of Cook's voyages to the Pacific (Stephen Hooper, catalogue notes, February 2007).

There are two composite wooden hooks and one pohau mangā that can possibly be attributed to Cook's voyages. One additional hook (E.554/2), a one-piece bone hook with double internal barbs and lashing made of New Zealand flax, is recorded as having been collected in 'New Guinea'. This hook closely resembles double internal barbed hooks from New Zealand, and is unlike any other New Guinean hook in any of the collections examined. It is possible that it is of New Zealand origin and has been mislabelled at some time.

HOOKS EXAMINED

Possibly from Cook's voyages

Composite hooks (wood with bone point): E.403/1 (69 mm length), E.652 (186 mm length).

Pohau mangā (wood with bone point): E.653 (121 mm length).

One-piece hooks (bone, double internal barb): E.554/2 (mislabelled as New Guinea?).

Other provenance

Polynesian

Composite hooks (wood with wood point): E.659, E.96 (90 mm length).

Trolling lures (pearl-oyster shell with turtle-shell point): E.399/2 (65 mm length), 399/3 (95 mm length), E.418/1.

One-piece hooks (pearl-oyster shell): E.0500 (114 mm length), E.399/6 (59 mm length), E.399/8 (54 mm length), E.399/9 (44 mm length); (coconut shell): E.399/7 (66 mm length).

North American

Composite hooks (wood with bone point lashed with sinew): E.654 (217 mm length), E.658 (216 mm length).

Trolling lure (bone shank with bone point): E.651 (146 mm length).

Museum of Archaeology and Anthropology

Downing Place, Cambridge, England

Curatorial Assistant: Rachel Hand

The collection at the Museum of Archaeology and Anthropology in Cambridge is especially important because much of the material was collected by James Cook himself, or at any rate was presented by Cook to John Montagu, 4th Earl of Sandwich (1718–92) and First Lord of the Admiralty, a famously rakish character and a great supporter of Cook's endeavours. Montagu in turn presented the objects to Trinity College, Cambridge, where he had been a student (1735–37), and the college deposited the collection in the museum in the early twentieth century. The Cambridge museum has 215 objects that can be traced to Cook's voyages, including 83 objects collected by Cook that were among the items originally presented to Trinity College by Lord Sandwich (Kaepler 1978a).

In addition to important pieces from across the Pacific, this collection includes a rich range of Māori carved and woven objects, including about 50 fishhooks, at least six of which can be attributed to Cook. Five of the Cook hooks are composite wood and bone, including one slender hook (D1914.72) of the style used for catching seabirds, and one wooden pohau mangā with a bone point. The barracouta lure was collected by Cook and given to David Pennant by Joseph Banks. Subsequently, the Earl of Denbigh permitted the curator of the Cambridge University Museum to select material of interest from the Pennant collection (Kaepler 1978a; Shawcross 1970).



Fig. 9 Double-barb hook with quartz sinker and underwing feathers from a New Zealand bush parrot, or kākā (Cambridge Museum of Anthropology and Archaeology, Cambridge: 1925.365).



Fig. 10 Hook and quartz sinker from the collections at the Museum of New Zealand Te Papa Tongarewa (Museum of New Zealand Te Papa Tongarewa, Wellington: ME0121180).

The collection also includes one ‘double internal barb hook’, complete with lashing and line, and attached to a quartz rock sinker decorated with red feathers (Fig. 9). Although labelled as ‘Sandwich Islands’ (Hawai‘i), the hook was considered as ‘probably of New Zealand origin’ by Kaeppler (1978a) and Tanner (1999). The hook and sinker are definitely from New Zealand: the feathers are underwing feathers from the New Zealand bush parrot (kākā, *Nestor meridionalis*), and the lashing is made from muka. Furthermore, the hook and sinker are identical to another example held in the Te Papa collections, although this lacks feathers (Fig. 10).

Twenty-one pāua-shell pā kahawai are represented in the collection, with one whalebone-shank example, three with metal backing, and the remainder wood-backed. Six have kiwi feathers attached at the distal end. One bone-shank and bone-point trolling lure is clearly fake, as noted by Peter Gathercole (1991). The earliest example is dated

1853, and none was collected by Cook. Several one-piece bone and shell hooks, and a selection of bone points (archaeological), were obtained on exchange from New Zealand in the early twentieth century. An online catalogue is available, but lacks images.

HOOKS EXAMINED

From Cook’s voyages

Composite hooks (wood with bone point): 1914.69 (110 mm length), D1914.70, D1914.71 (65 mm length).

Composite albatross hooks (wood with bone point): D1914.72 (120 mm length).

Pohau mangā (wood with bone point): 1925.382 (178 mm length).

One-piece hooks (bone, double internal barb): z6134; (attached to flax line with sinker decorated with kākā feathers): 1925.365.

Sinker (calcite with plaited flax line): 1914.

Other provenance

Composite hooks (wood with bone point): 1927.190.8 (165 mm length), 1927.190.9 (150 mm length), 1933.554 (145 mm length), 1977.818 (190 mm length), 1978.118 (150 mm length), Z6127 (180 mm length), Z6128 (170 mm length), Z6129 (85 mm length), Z6130B (55 mm length), Z6135 (135 mm length); (bone shank with bone point): 1935.1266 (165 mm length).

Composite albatross hooks (wood with metal point): 1925.258.

Pā kahawai (wood-backed pāua shell with bone point): 1893.62, Z5241, 1921.63.10 (12 mm length), 1922.47 (78 mm length), 1925.445 (125 mm length), 1935.1267 (128 mm length), 1935.1268 A, B, C, E (98–104 mm length), 1939.53 (80 mm length), 1955.313 (132 mm length), Z370 (74 mm length), Z5110 (80 mm length), Z6131 (90 mm length); (pāua shell with wire backing and bone point): 1921.63.9 (104 mm length), 1948.2563; (bone shank with bone point): Z5109; (triton-shell shank with bone point and dog hair): Z6130A (85 mm length); (mussel shell with metal backing and metal point): E1920.74 (90 mm length).

One-piece hooks (shell): 1947.301 (98 mm length), Z5976, Z5977, Z5979, Z6133 (all 25–27 mm length); (whale bone): 1920.399 (Chatham Islands?, 52 mm length).

Bone points (archaeological): 1948.2538 A-P.

Incomplete bone hooks (representing the process of making hooks from moa bone): 1948.2561 A.

Pitt Rivers Museum

South Parks Road, Oxford, England

Joint Head of Collections: Dr Jeremy Coote

The Pitt Rivers Museum (PRM) collection at Oxford is regarded by specialists as the most important of the Forster collections and one of the most important of all the collections made on any of Cook's three voyages, with a total of 186 objects identified as being from those voyages. The objects were acquired by Reinhold Forster and his son Georg during Cook's second voyage of discovery from 1772 to 1775 (Coote 2000, 2004). The collection was selected by the Forsters from a much larger number of objects acquired on the voyage, and was sent to Oxford in 1776 along with a handwritten 'Catalogue of curiosities' (Kaeppler 1978a). The PRM also holds a collection of artefacts acquired by Joseph Banks on the first Cook's voyage and sent to Oxford 18 months after his return, in around January 1773 (Coote 2004).

The Oxford collection has not yet been satisfactorily published, although some individual items have been widely illustrated, and other non-fishhook items have been studied in great detail. This collection includes approximately 450 Māori fishhooks collected during the nineteenth or early twentieth centuries. Of these, less than a dozen were collected prior to the mid-1800s, but many of the hooks do not appear to be of Māori origin. There is circumstantial evidence (PRM catalogue notes) that Māori and Polynesian fishhooks were included among anthropological objects transferred from the Ashmolean Museum, Christ Church College, Oxford University, to the PRM in 1886. Furthermore, they probably originated either from Captain Cook on the second voyage and were donated by Reinhold or Georg Forster, or from two other collections obtained by Captain Frederick William Beechey in 1825–28 and Charles A. Pope in 1868–71. Beechey had presented a significant group of material to the Ashmolean Museum (PRM catalogue notes), collected in 1825–28 when he commanded the *Blossom* during a northern Pacific surveying voyage (Beechey 1831). The Pope collection (mostly originating in North America), from St Louis, Missouri, was probably donated by John O'Fallon Pope (son of Charles A. Pope), who was at Christ Church from 1868 to 1871 (PRM catalogue notes; Coote 2004).

Catalogue notes (attributed to Peter Gathercole, Department of Anthropology, Otago University, 26 February 1997) state that there is not enough distinctive stylistic evidence or concrete documentation to determine whether any of the fishhooks included in the Cook's catalogue were collected by the Forsters, or if they could even be associated with Cook's voyages. A number of fishhooks have been assigned Forster numbers (1282, 1292, and 1301–1305) but these attributions are tenuous. Catalogue notes (attributed to Assistant Keeper Evans of the Ashmolean Museum, 1884–1908) state that 'it is very plain that all these fish-hooks (No. 1281 to 1305) belong to more than one collection and that at some previous time they had been carelessly mixed together. There is not one of Captain Cook's original number labels on any of them, and therefore none may belong to his collection but probably that will never be known now'.

One composite wooden hook with a bone point (1887.1.379) was figured and described by Coote (2004: fig. 26) as a Māori fishhook from New Zealand (Fig. 11). The hook was probably part of the collection transferred to the PRM from Christ Church College, via the University Museum, in 1886. This collection comprised artefacts



Fig. 11 Composite wood and bone-point hook from Hawai'i (Pitt Rivers Museum, Oxford: 1887.1.379).

originally thought to be from North America, but some of which were later recognised as early Polynesian, and were incorrectly assumed to be from the Charles A. Pope collection (Coote 2004). It is unclear how Pope acquired the early Polynesian artefacts mixed among his North American material. Coote (2004) provided tenuous and circumstantial evidence to show that rather than being from the Pope collection, the wooden hook was acquired by Joseph Banks during the first Cook's voyage, and was part of a 'forgotten collection' of Banks material held in the PRM that had been among the objects donated in 1773.

However, the hook is not from New Zealand – the point lashing is typically Polynesian, not Māori, it is lashed with sennit, not New Zealand flax, and it has old ink writing directly on the wooden shank (partially obscured by the registration number): 'Sandwich Ids, Dr. Lee'S Trustees. Ch.Ch., Transf. fm. Unty. Mus.'. This hook could not have been included in the collection donated to Christ Church College by Banks in or prior to 1773 (Coote 2004), as the 'Sandwich' Islands (= Hawaiian Islands) were not visited by Europeans until Cook's third voyage in 1778. Hence, it remains a puzzle how Banks could have acquired a hook that could only have been collected on or after the third voyage. It is more likely that this hook is not part of the Banks collection, but rather came from the Beechey collection, which was transferred to the PRM at the same time as the Pope collection, and was acquired in Hawai'i during the period between 1825 and 1828.

An online catalogue is available. A few items are on display and hence not available for research, but these have good



Fig. 12 'Classic' Māori fishhook – probably a fake or replica produced for trade purposes (Pitt Rivers Museum, Oxford: 1884.11.47).

online images. No images are available for the majority of the hooks.

The collection includes 10 composite wooden hooks with bone points. At least two of these have ornately carved bone points and appear to be fakes. One of these latter hooks (Fig. 12) has an unusual inverted carved figure on the shank with inserted pāua-shell eyes and a plaited snood of sennit rather than New Zealand flax. This hook is reproduced in colour by Allan *et al.* (1999), where it is mistakenly captioned as 'a decorated Maori cutting tool with an edge created from inset shark's teeth', a detail apparently derived from the information provided for a different PRM object, i.e. 1886.1.1161 (PRM catalogue notes).

Post-European hooks include four slender wooden hooks with metal points. These hooks have very wide gapes and are not substantial enough to have been used for catching any fish large enough to take the hook, and may have been intended for catching seabirds rather than fish.

A large number of pā kahawai are represented in the

collection, two examples with pāua-shell-rim shanks (one with a pāua-shell point, the other bone), and the remainder comprising pāua shell backed with wood or wire. The majority of these lures were obtained by a private collector (Mr Charles Smith) from the Whanganui district and were probably collected between 1860 and 1869. A small collection of bone points (several provided by Frank Robieson, a dealer and known forger) and broken bone hooks is also held in the PRM.

HOOKS EXAMINED

Some possibly from Cook's voyages

Composite hooks (wood with bone point): 1884.11.28 (170 mm length), 1884.11.30 (44 mm length), 1884.11.47 (fake?), 1934.32.9, 1966.1.831–833, 1966.1.853–854, 1919.52.2 (fake?); (wood with metal point): 1924.62.10–13 (620–685 mm length).

Pā kahawai (wood with inlaid pāua shell, bone point): 70 examples, 65–155 mm length, 1886.11.1306, 1886.1.1307, 1887.1.153–154, 1917.53.276, 1920.90.4, 1922.9.2, 1923.87.88, 1923.87.121 (43), 1935.75.13–14 (2), 1938.35.1465–1468 (4), 1951.4.5, 2000.21.12 (shell inlay missing); (pāua shell backed with whale bone, bone point): 1923.87.124, 1923.87.125; (pāua-shell rim with shell point): 1884.11.35; (pāua shell backed with wood, with metal point): 1884.11.36; (mussel shell backed with wood, bone point): 1923.87.122, 1923.87.123; (pāua shell backed with wire, wire point): 1884.11.37, 1884.11.38, 1906.20.9, 1932.47.1.3, 1932.85.6, 1923.87.361.

Assorted bone points and hooks: 1893.78.68–72, 1919.16.5, 1930.8–16.

British Museum

Great Russell Street, London, England

Curator: Dr Natasha McKinney

The British Museum holds over 3000 Māori objects, including around 350 fishhooks. The earliest pieces were brought back from Cook's three voyages of discovery during the years 1768–80 and attracted much public interest when they first went on display in the museum's South Sea Room in 1803. Documentation of that early material was poor and it was not until the end of the nineteenth century that James Edge-Partington began the task of cataloguing it. In recent years, Adrienne Kaeppler (1978a,b) has shown that some 28 of the museum's Māori items can be traced to Cook's voyages. However, the earliest acquisition date for any of the fish-

hooks is 1875, although many were obtained from much earlier collections, but without further details.

Subsequent growth of the Māori collection was predominantly through the efforts of Augustus Wollaston Franks (later Sir Wollaston Franks), who joined the museum in 1851. By the time he retired in 1896, the ethnographic collections had increased ten-fold; he himself donated over 8000 objects to the museum, including 222 Māori items. Other nineteenth-century acquisitions include the collection of Henry Christy, the Sir George Grey collection, the Sudeley collection, and the Meinertzhagen collection of over 600 objects. An online catalogue is available, but not all objects have images and databasing is ongoing.

The museum also received much of the Harry Beasley collection. Beasley was a major ethnographic collector in the early twentieth century in England whose main interest was in material from the Pacific Islands. In 1928, he opened his own museum, Cranmore Ethnographical Museum, in Chislehurst, Surrey (Waterfield & King 2006). He also wrote a number of journal papers and a book on Pacific fishhooks (Beasley 1928), in which Māori fishhooks are particularly well represented. The Beasley collection is of considerable interest because it includes many unique examples of Māori hooks that use materials not found in the manufacture of hooks held elsewhere in European or New Zealand collections. For instance, among the composite hooks at the British Museum are three in which the lower jaw of a dog has been used for the point attached to wooden shanks (Fig. 13), another made from part of the lower jaw of a horse with a shell point, and others made using cow's horn, pig's tusk and shell (turban shell, *Cookia*?). Four lures made from stained moa bone (BM 95-408), with bone points (but without pāua-shell inlays) and intact shank-lines, are unique, and other similar lures are not known in any collection examined in Europe or New Zealand, with the exception of a single lure in the Te Papa collections (ME00227). The unusual nature of many of these hooks suggests that they may have been made as replicas or fakes, possibly commissioned by dealers selling hooks to Beasley. The presence of dog-jaw points at archaeological sites has been well documented (e.g. Furey 1996), but no examples are known from the Cook voyages material.

The Beasley collection also provides some interesting series of hooks showing transition in designs from simple stout hooks made for fishing, to more ornate, often highly carved hooks, which may have been produced for trade rather than fishing (e.g. Fig. 4).



Fig. 13 Composite wood hook with a bone point manufactured using the lower jaw of a dog (British Museum, London: 1944.Oc.2.158).



Fig. 14 Early pā kahawai were made using pāua-shell rim for the shank and a dogfish dorsal-fin spine, or a piece of shell, for the simple, unbarbed hook (Museum of New Zealand Te Papa Tongarewa, Wellington: OL000106/10).

Pā kahawai lures in the Beasley collection demonstrate a transition from simple pāua-shell-rim-shank lures with unbarbed points made from dogfish spine or shell (Fig. 14) (all possibly dated pre-1860), to the earliest dated wood-backed pāua-shell lures (from the Whanganui region) in the mid-1860s.

HOOKS EXAMINED

Not from Cook's voyages

Composite hooks (wood with bone point): Q81.Oc.1320 (205 mm length), 95-161 (48 mm length), 95-162 (150 mm length), 95-164 (68 mm length), 95-165 (130 mm length), 95-411 (100 mm length), 6000 (140 mm length), 6047 (45 mm length), 9356 (130 mm length), 96.11-19.10 (150 mm length), 1914 (point from trolling lure?, 95 mm length), 1917, 178, 173, 1926-38 (185 mm length), 1944.Oc.2.150 (pre-1924, 195 mm length), 1944.Oc.2.151 (180 mm length), 1944.Oc.2.152 (185 mm length), 1944.Oc.2.153 (130 mm length), 1944.Oc.2.154 (125 mm length), 1944.Oc.2.170 (dated 1793, resin,

50 mm length), 1944.Oc.2.171 (very ornate, 150 mm length), 1944.Oc.2.157, NZ 171 (150 mm length), NZ 184 (Q81.Oc.1322, 60 mm length), NZ 177 (120 mm length), NZ 185 (Q81.Oc.1332, 65 mm length), NZ 186 (Q81.Oc.1330, 50 mm length), NZ 176 (fake, 145 mm length), NZ 172; (wood with shell point): 1944.Oc.2.175 (65 mm length), 1944.Oc.2.172 (resin over lashing, 70 mm length), 1944.Oc.2.173 (resin over lashing, 90 mm length), 1944.Oc.2.174 (60 mm length), 1944.Oc.2.155 (resin over lashing, 180 mm length), 2053 (90 mm length), 2052 (resin over lashing, 85 mm length), 1944.Oc.2.161, 1944.Oc.2.165, 1944.Oc.2.164, 1944.Oc.2.162, 1944.Oc.2.159, 1944.Oc.2.163, 1944.Oc.2.160, 1967.Oc.4.1 (88 mm length); (wood with dog-jaw point): 251, 1944.Oc.2.158; (bone with shell point): 2054 (poorly made, horse jaw, 175 mm length); (wood shank with metal point): 6643 (175 mm length), 1935.4-11.13 (200 mm length), Q81.Oc.1329, Q81.Oc.1337, 1944.Oc.2.169 (not NZ?).

Composite albatross hooks (carved wooden shank with greenstone point): NZ 202 (145 mm length); (wood shank with bone point): 1944.Oc.2.156 (180 mm length), 1944.Oc.2.166 (130 mm length), 1944.Oc.2.167 (115 mm length), 1944.Oc.2.168 (90 mm length), 95-168 (100 mm length), NZ 181 (125 mm length), NZ 182 (98 mm length), 1915 (95 mm length), 95-164.

Metal hooks: 1944.Oc.2.199, Q81.Oc.1344, 95-410.

One-piece hooks (shell): 95-509 (29 mm length), 95-510 (28 mm length), 95-511 (28 mm length), 95-512 (30 mm length), 95-513 (30 mm length), 1944.Oc.2.192, Q81.Oc.1319, 4343, 78.11-1.599, 1944.Oc.190, 95-166 (2); (bone, rotating): 1944.Oc.2.201, 1944.Oc.2.202, 1944.Oc.2.203, 1944.Oc.2.176, 1944.Oc.2.200, 1944.Oc.2.297 (fake), 95-496, 95-506, 95-497, 95-495, 95-498, 95-499, 4315, 1918, 1919, 95-507, Q81.Oc.1336; (bone, double internal barb): Q81.Oc.1333, 4316, 95-504, 95-501, 95-502, 95-503, 95-500, 95-505; (bone, Chatham Island 'U'): 6077, 1944.Oc.2.246, 1944.Oc.2.243, 1944.Oc.2.248, 1944.Oc.2.247, 1944.Oc.2.244, 98.10-21.66, 7060; (wood): 1944.Oc.2.149 (270 mm length), NZ 179, 250 (150 mm length), 1916 (130 mm length).

Pohau mangā (wood with bone point): NZ 197, 95-402, 1944.Oc.2.178, 95-403, 95-401, 1944.Oc.2.179; (wood with metal point): 1944.Oc.2.180 (78 mm length), 95-404 (75 mm length).

Pā kahawai (pāua-shell-rim shank with bone point): 1944.Oc.2.191 (dated 1793, 75 mm length); (pāua-shell rim with dogfish-spine point): 1944.Oc.2.194 (70 mm length), 1944.Oc.2.195 (78 mm length), 1944.Oc.2.193 (90 mm length), 2058 (78 mm length); (pāua-shell-rim shank with shell point): 4339 (60 mm length), 4338 (80 mm length), Q81.Oc.2.1334 (dog hair, 82 mm length), 95-166 (90 mm length), 4341 (80 mm length), 95-160 (78 mm length); (wood-backed pāua-shell shank with bone point): 28 (79–180 mm length), 4762, 1944.Oc.2.181, 1944.Oc.2.182, 1944.Oc.2.183, 1944.Oc.2.184, 1921.10-14.25a, 96.11-19.11, 96.11-19.13, 96.11-19.12, 81.Oc.1311, Q81.Oc.1346, Q81.Oc.1308, Q81.Oc.1342, Q81.Oc.1347, 1923-5, 46-1-4.4, TRH 19, 1934.12-5.11, 1934.12-5.10, 1928-93, 4345, 4346; (moa-bone shank with bone point): 95-408, 95-409, NZ 198, NZ 199; (shell shank, *Trochus?*, with bone point): 4344; (shell with dogfish-spine point): 1944.Oc.2.189; (whalebone shank with bone point), 1944.Oc.2.188; (wood-backed bone shank with 'point line' and bone point): 1919; (cow-horn-backed pāua shell with bone point): 95-407; (pig's tusk with wire point):

1944.Oc.2.198; (pāua-shell shank with wire point): 96-772 (75 mm length), 8256 (with kiwi feathers, 75 mm length); (wire shank and point with shell backing): 1944.Oc.2.197 (92 mm length), 1944.Oc.2.196 (98 mm length), 6856 (95 mm length), Q81.Oc.1358 (112 mm length), Q81.Oc.1351 (122 mm length), Q81.Oc.1349 (110 mm length), Q81.Oc.1352 (127 mm length).

Georg-August-Universität

Wilhelmsplatz, Göttingen, Germany

Curator: Dr Gundolf Krueger

The Cook–Forster collection at the Georg-August University of Göttingen represents one of the world's most distinguished collections of ethnographical artefacts from the South Pacific. Parts of the collection were bought on commission by London dealer George Humphrey for King George III of England, then sold to the University of Göttingen in 1782, and in 1799 the university bought the remainder of the personal collection of the deceased Reinhold Forster, who had accompanied Cook on his second voyage (1772–75).

The collection comprises more than 350 artefacts acquired during Cook's voyages from 10 island cultures in Polynesia, Melanesia, Micronesia and the Pacific coast of the Americas, and includes 16 fishhooks from New Zealand (Hauser-Schäublin & Krüger 1988). Two of these are double internal barbed one-piece bone hooks, seven are composite wood and bone hooks, one is a single-piece bone hook, one is a single-piece shell hook (top shell, *Trochus?*), and four are wood and bone pohau mangā. Although several of the Polynesian lures in the collection are attributed to the Forster collection purchased in 1799, 15 of the New Zealand hooks were purchased from George Humphrey in 1782.

All of these hooks derive from Cook's second and third voyages, and some may have been purchased at an auction of the collection of David Samwell, who served as surgeon's mate on the *Resolution* from February 1776 to August 1778, at which time he was transferred to the *Discovery* to replace surgeon William Anderson, who had died on the voyage (Kaeppler 2008). Samwell's collection was sold in June 1781 and, in the only known annotated copy of the sale catalogue, George Humphrey is shown to have bought a number of lots, which probably became part of the collection prepared for Göttingen (Kaeppler 2008). According to Kaeppler (2008), it is also possible that some of Cook's voyage items were obtained from Jacob Forster, a relative of Reinhold and Georg Forster, who was married to Elizabeth Humphrey, sister of George Humphrey (Frondel 1972; Whitehead 1973).

One composite hook (no. 35) was presented along with other pieces to the newly founded Hanover Museum in 1854 as part of the Cook–Forster collection. However, in contrast with other fishhooks from New Zealand, which are well documented, this hook is not mentioned in the Reinhold Forster legacy and cannot be identified exactly from George Humphrey’s catalogue (G. Krüger, Institut für Ethnologie der Universität Göttingen, pers. comm. 2009). The hook has a snood lashing that is almost parallel to the point rather than at a strong angle, and it resembles replica hooks made in the late 1800s rather than authentic hooks collected during Cook’s voyages. It is possible that this fishhook was originally a gift from Georg Forster to Reinhold Friedrich Blumenbach, the curator of the Academic Museum of Göttingen (besides other gifts given by Forster during visits to Göttingen in 1778 and following years), or it may have been given to Blumenbach by Joseph Banks after his return from Cook’s first voyage (Blumenbach and Banks corresponded for a long time) (G. Krüger, pers. comm. 2009). Hence, that hook was included in the Cook–Forster collection. However, the type of snood lashing and the point are unusual for an early Māori fishhook, and it is possibly either a hook intended to catch albatross or an early nineteenth-century replica, and thus may or may not be part of the Cook–Forster collection.

High-resolution images of the New Zealand fishhooks in this collection are available online. Some of the Cook–Forster collection is on permanent display, but most of the objects are in storage. Cook’s Pacific Encounters is an online catalogue of the Cook–Forster collection held at the Institute of Cultural and Social Anthropology, Georg-August University of Göttingen, Lower Saxony, Germany. In a joint project between the university and the National Museum of Australia, this online catalogue website explores the university’s collection of Pacific artefacts acquired during the three Cook’s voyages between 1768 and 1780.

NEW ZEALAND MĀORI HOOKS ILLUSTRATED

From Cook’s voyages

Composite hooks (wood with bone point): No. 45, Oz 332, Oz 333, Oz 339, Oz 340, Oz 341 (all 130 mm length), Oz 338 (110 mm length).

Composite albatross hooks (wood with bone point): Oz 331 (130 mm length).

One-piece hooks (bone, double internal barb): Oz 328 (30 mm length), Oz 329 (30 mm length); (bone, rotating): Oz 327 (30 mm length); (shell): Oz 330 (20 mm length).

Pohau mangā (wood with bone point): Oz 334 (130 mm length), Oz 336 (180 mm length), Oz 337 (150 mm length).

Pā kahawai (whalebone shank with bone point, hook lashing attached): Oz 335 (111 mm length).

Possibly from Cook’s voyages

Composite hook (wood with bone point): No. 35 (Hanover 1854, 125 mm length).

Historische Museum Bern

Helvetiaplatz, Bern, Switzerland

Curator: Dr Thomas Psota

Material from Cook’s voyages held in the Bern Historical Museum was donated by John Webber, artist on the third voyage, and represents the largest extant, well-documented collection from that voyage. Unlike the collections made by Cook, which often comprised ceremonial artefacts or gifts, the Webber collection is of more typically ordinary, useful things (Kaeppler 1978a). Most of the items are from Hawai’i, Tonga and the Society Islands, with only a few from New Zealand.

Although a New Zealand Māori fishhook was listed in the shipping list of objects sent to Bern (Henking 1957), none is present in the collection or detailed on earlier lists. There are four Polynesian fishhooks in the collection, including one whalebone-shank lure with a turtle-shell point from Tahiti, and three pearl-oyster-shell lures with turtle-shell points, most probably from Tonga. Attached to all four examples are twisted and braided fibre lines made from sennit, and three have small tufts of feathers at the distal end of the shank.

Museo Zoologico e di Storia Naturale della Specola

Via la Pira, Firenze, Italy

The collection of ethnographic objects from Cook’s voyages held in the Museum of Zoology and Natural History in Florence was the first to be described and published (Giglioli 1893; Kaeppler 1978b). However, there is no documentation of how the objects were brought to Florence, and the evidence that they are from Cook’s voyages is circumstantial, although at least some may be from the auction of Leverian Museum lots in London in 1806, and others may have been purchased in 1779 from the sale of a collection of items acquired by London dealer George Humphrey, who had obtained them from the *Resolution*

and, possibly, the *Adventure* when the ships returned in 1774 (Kaepler 1978b).

Giglioli (1893) described a number of artefacts that he stated originated from Queen Charlotte Sound, New Zealand, but, as Kaepler (1978b) noted, it is not possible to confirm that the objects came from Cook's voyages, let alone to locate them. Two fishhooks are included among the items detailed by Giglioli. The first is described as incomplete, being only the bone point of a hook that Giglioli attributed to the point of a wood-shank lure lined with pāua shell (pā kahawai), but without citing any evidence for this. No wood lures or pā kahawai are known from Cook's voyages or were collected by other early European explorers, and it is more likely that this bone point was from a composite fishhook. The second hook described by Giglioli comprises an almost complete composite hook with a flax snood lashing, but lacks a bone point.

Observations on types of hooks

The majority of Māori fishhooks in European museums that were collected by James Cook and other early explorers in the Pacific region during the eighteenth century are composite hooks made of wood with bone points. There are a few one-piece bone or shell hooks, and some 'double internal barb' hooks represented in the collections. A number of pohau mangā were collected by Cook, and a few pā kahawai made using a pāua-shell rim for the shank may possibly be from the Cook voyages, although no wood-backed pāua-shell pā kahawai represented in any collection can be reliably dated as being collected prior to the mid-1860s.

Composite hooks

Composite hooks held in European museum collections are made with strong, curved wood shanks and bone points, and are the most common examples of hooks that were obtained by James Cook and other early explorers (Figs 2, 7, 15). These hooks are generally much larger than one-piece bone, shell or greenstone hooks, and were particularly sought after by collectors in the nineteenth and early twentieth centuries – many examples are represented in the collections.

Māori fishhooks collected during the Cook voyages are stoutly lashed with muka. A number of allegedly Māori hooks collected in the late nineteenth century appear to be replicas or fakes, having been lashed with sennit, fibre pre-



Fig. 15 Traditional Māori hooks made for fishing are characterised by their stout components and a quality of workmanship that is lacking in many later replicas. Composite hook with attached bait bag (Musée du Quai Branly, Paris: 71.1978.50.1.1-2).

pared from coconut husk (*Cocos nucifera*). Sennit, also known as 'afa', was used for lashing fishhooks throughout tropical Polynesia (Parkinson 1773; Henry 1928), but was not available in New Zealand. Although Māori sometimes used gum from native plants such as kōuaha (rangiora, *Brachyglottis repanda*) to preserve lashings (Paulin 2007), none of the composite hooks from the Cook voyages appears to have been treated with resin. Other hooks in collections dated to the mid-nineteenth century have been treated with resin, and some hooks have been treated with shellac or other preservatives by collectors.

Several composite hooks and hook points were supplied to European museums in the late nineteenth century by dealer and forger Frank Robieson (Watt 1990; Day 2005). It is interesting to note that many of these hooks were



Fig. 16 Replica composite hooks are often characterised by having snood lashings parallel to the direction of the point. This example has also been fabricated using the bone point from a trolling lure (British Museum, London: 1914).

obtained from Robieson between the years 1881 and 1883, and are reported as being from Otago. During this period, the leaders of the Māori pacifist resistance movement at Parihaka in Taranaki, Te Whiti o Rongomai and Tohu Kakahi, were imprisoned without trial in Dunedin, Otago (Cowan 1922–23). It is possible that contact between Robieson and Te Whiti at this time resulted in the commissioning of Te Whiti by the dealer to make fishhooks (and other artefacts) for sale, and that subsequently Te Whiti continued the production of artefacts in collaboration with the dealer James Butterworth in New Plymouth (Day 2005) on his return to Parihaka in 1883.

The number of slender composite hooks in the European collections that were possibly used for catching seabirds rather than fish suggests that hook and line was an important method for Māori taking petrels (Procellariidae) and other seabirds such as albatross (Diomedidae) for both food and feathers (Fig. 8).

Trolling lures

Trolling lures collected by Cook and other early explorers in New Zealand are limited to wooden pohau mangā. No pā kahawai (either simple pāua-shell shank, or lures made with pāua shell backed with wood) can be positively attributed to Cook.

The sharp teeth of barracouta (mangā, *Thyrsites atun*) would easily cut flax lines, so pohau mangā were larger than pā kahawai and comprised a long piece of plain reddish wood, usually tawhai (southern beech, *Nothofagus* spp.) or rimu (red pine, *Dacrydium cupressinum*), and a simple bone point embedded at the distal end and held in place by a wooden pin. The bone points were rapidly replaced with iron nails after European contact. Examples of lures made with straight bone shanks and no pāua-shell lining are represented in museum collections (some of these may be very old), and were also illustrated by Sydney Parkinson from the first Cook voyage (Parkinson 1773: pl. XXVI, fig. 4) (Fig. 1), although no examples can be traced to the Cook voyages. A few lures with curved whalebone shanks and inlaid pāua-shell lining are also present in museum collections, but none of these has provenance details or known dates of manufacture. The earliest pāua-shell trolling lures (pre-1860?) comprise hooks made with pāua-shell-rim shanks and simple, non-barbed points often made from dogfish (*Squalus* spp.) dorsal-fin spines or shell.

Unbaited composite trolling lures were used throughout tropical Polynesia specifically to catch scombrids such as tuna (e.g. bonito, *Sarda chiliensis*). Many eighteenth-century examples are represented in collections, and were made using pearl-oyster shell (*Pinctada* spp.), occasionally backed with whale bone (Fig. 17). Pearl shell was frequently exchanged over long distances (Hooper 2008), and these often very delicately carved hooks were of great value, particularly in French Polynesia, and were considered to be a special gift for a guest at the time of Cook's voyages (Forster 1777; Nordhoff 1930).

Numerous examples of Polynesian tuna lures were gifted to European explorers and are well represented in museum collections (particularly the Musée du Quai Branly, Paris, and Museum für Völkerkunde, Vienna). New Zealand Māori pā kahawai, although made from brighter and more attractive pāua (abalone) shell, do not appear to have been as highly regarded as suitable gifts, or were rare; examples obtained by pre-nineteenth-century explorers in collections cannot be verified.



Fig. 17 Polynesian tuna lure (Tonga): whalebone shank backed externally with pearl-oyster shell, turtle-shell point (Museum of New Zealand Te Papa Tongarewa, Wellington: FE 007444).



Fig. 18 Metal replaced natural components soon after European contact. Pā kahawai made using wire backing, which also forms the point (Museum of New Zealand Te Papa Tongarewa: OL000106).

In contrast, archaeological examples of lures in New Zealand museums are mostly incomplete stone ‘minnow shanks’, and later examples (post-1860) in museums throughout New Zealand and Europe are mostly wood-backed pāua-shell pā kahawai. Post-European examples of pā kahawai were usually made using wire, which formed both the shank and point by curving around the rear of the pāua shell, and was securely lashed in place (Fig. 18). Historical records clearly indicate that pāua shell was used in the manufacture of lures, but these records do not provide details of how the lures observed were constructed. Straight-shank Polynesian lures made using bone, stone or shell have the fishing line extending to the base of the shank to hold and support the point of the hook: this ‘shank-line’ is a necessary component to secure the point when playing a large fish. The strongly concave pāua shell used in New Zealand prevents

the line from running down the inner face of the shank to attach to the bone point, and these lures appear to rely on the point being lashed securely to a bulge at the base of the shank. Hence, curved pāua-shell lures may not have been strong enough to catch large oceanic pelagic fishes such as tuna (Scombridae) or kingfish (haku, *Seriola lalandi*), but would have secured smaller coastal pelagic species such as kahawai (*Arripis trutta*) and kōheru (mackerel, *Decapterus koheru*).

Pā kahawai made with pāua shell backed with wooden shanks (and whose points have reverse barbs) were widely sought after by collectors in the late 1800s, and are common in museum collections both in New Zealand (Paulin 2007) and Europe. The earliest known examples of wood-backed pāua-shell lures date from the 1860s and were collected at Whanganui, in the lower North Island. These

early examples are notable in being made from very dense, hard wood, unlike later examples dated from the 1880s onwards, which are made from a light wood, possibly tōtara (*Podocarpus totara*). Bagnall (1886) noted that kahikatea (*Dacrycarpus dacrydioides*) was one of the few New Zealand timbers that did not float when green, although Polack (1838) observed that when dried it was extremely buoyant. A lure that sank would be far more effective than those that floated or skimmed along the surface of the water, and further study of the types of wood used may shed useful information on the manufacture of the original and later replica lures.

Given the value of attractive shell lures elsewhere in the Pacific, it is surprising that no examples of pāua-shell pā kahawai were gifted to James Cook, collected during the Cook voyages, or obtained by other early explorers in New Zealand waters. Wood-backed pāua-shell lures are unknown from archaeological sites in New Zealand, although incomplete stone 'minnow-shank' lures are well represented archaeologically. Examples of complete stone-shank fishing lures with intact lashings and points from the Pacific region are extremely rare: only one example from Tonga was examined among the European collections (National Museum of Ireland: 1923 338b), and only one example is known in New Zealand collections (Auckland Institute and Museum: 5369).

One-piece hooks

Relatively few examples of one-piece bone or shell hooks were collected by James Cook and other explorers. One example, a double internal barbed hook held in the Hunterian Museum, Glasgow (E.554/2), and documented as being collected in the Bismarck Archipelago, New Guinea, closely resembles other hooks from New Zealand and is lashed with New Zealand flax. This hook has possibly been mislabelled at some time, is probably from New Zealand, and may also be part of the Cook collection. Kaepler (1978a) and Tanner (1999) noted that an example of a double internal barb hook in the Cambridge Museum of Anthropology and Archaeology, attached to a quartz sinker with red feathers (Fig. 9), was possibly from New Zealand, but was labelled as being from Hawai'i. This hook is clearly of New Zealand origin, and is almost identical to a hook and quartz sinker (which lacks feathers) held in the Te Papa collections (Fig. 10).

One-piece hooks ('double internal barb' hooks and single-piece bone or shell hooks) are well represented in museum collections in New Zealand and are particularly common

as archaeological specimens. However, single-piece bone hooks are uncommon in European museums, other than in the British Museum, where many examples were obtained on exchange with New Zealand museums in the early twentieth century.

One-piece bone or shell hooks are generally small: single-barb hooks range up to 70 mm in length, while double internal barb hooks rarely exceed 30–50 mm in length. The maximum size of one-piece bone and shell hooks is determined by the strength of the material required to land a large fish – there are numerous archaeological examples of broken hook shanks in collections. Although bone from giant moa (Aves: Dinornithidae) and stranded whales (Cetacea) could be used to make larger hooks and was readily available, a large fish could easily snap such a one-piece hook. Hence, large hooks were composite and made with strong wooden shanks, and bone or shell limited in use as points. Matthews (1911) noted that Māori considered the shape of the hook most important, and that hooks preferred for catching sharks were 'short in the shank, never exceeding the breadth of three fingers, the standard measure'.

Double internal barb (or 'shank-barb') hooks are more commonly represented among archaeological hooks from sheltered eastern bays and northeastern coasts of New Zealand (e.g. Golden Bay, Nelson, Northland to Bay of Plenty, Hawkes Bay) and were possibly used to target small-mouthed pelagic-feeding species such as tarakihi (*Nemadactylus macropterus*) and trevally (*Pseudocaranx dentex*), among others. This double-barb hook design with a very narrow gape has a functional importance similar to the narrow gape of larger composite hooks, which worked by trapping the jawbone rather than penetrating the fish (see Paulin 2007).

Leach (2006) suggested that the double internal barb hook design was a means of producing a narrow gap during manufacture of the hook. However, in a subsequent paper, Davidson & Leach (2008) speculated that the double internal barbed hooks functioned by catching elements of the branchial (gill) arch between the narrow gape of the hook as the fish ejected debris through the gill opening. This theory is similar to that proposed by Paulin (2007), who suggested that the double internal barbs function as a trap to hold the jawbone, rather than penetrating the tissue as in the rotating hook theory proposed by Leach (1973). However, it is impossible for a double-barb hook, or any hook, to trap a branchial gill arch in the manner suggested by Davidson & Leach (2008).

Davidson & Leach's (2008) theory proposes that the small hook catches the branchial arch as the fish ejects unwanted material through the gill opening. While fish can eject detritus such as sand and small shell fragments between the branchial arches and out through the gill opening, the anterior or leading edge of each gill arch is lined with comb-like structures known as 'gill rakers' (Parker & Haswell 1897). 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 (gill cover) 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. Thus, the gill rakers enable fish to draw water continuously in through the mouth and out through the gill opening, so that it passes over the gill filaments to supply oxygen, and at the same time trap food items, which can then be swallowed. Even a very small hook could not pass through the mesh or grid created by the gill rakers, hence it could not trap a gill arch as suggested by Davidson & Leach (2008).

General observations

While this paper documents Māori fishhooks in collections in Russia, France, Austria, Germany, Italy, Ireland, Scotland and England, it is by no means comprehensive: there are Māori fishhooks in collections in other museums in Europe and elsewhere. Kaeppler (1978a,b) noted that at least 50 European museums had Māori artefacts. Digitisation of collections will eventually make many of these collections accessible online, although inadequate funding for this and baseline cataloguing is a problem faced by all institutions.

Some Māori hooks in museum collections have been modified historically by collectors and museum staff for display and research purposes. As collections were established in the late eighteenth and early nineteenth centuries, there was a desire to display ethnographical items, including artefacts representing fishing technologies from distant lands, as 'artificial curiosities'. Rather than preserving them as cultural artefacts in their own right, the curiosities were seen as part of the diversity and complexity of nature, and were thus positive proof of the existence of a Divine Creator (e.g. Digby 1810–17). Consequently, in order to display many fishhooks, lines made of non-traditional materials such as hemp, sisal, jute, linen flax and cotton were frequently added, or used to replace deteriorating lines; however, these added lashings were often incorrect and misleading. At least

one hook known to have been collected during the second of Cook's voyages has been modified by unknown collectors or museum curators. This hook is one of two composite hooks in the Forster collection at Göttingen (Oz332 and Oz333), which are similar and were possibly made by the same person. The condition of the hooks and catalogue description of how the bone point was inserted into a groove at the end of the shank suggest that the lashing of one (Oz332) has been unwound for examination, and then retied: the lashing is crude and unfinished when compared with the second (Oz333).

Most snood lashings that have been added to Māori hooks by collectors or museum curators, and lashings on hooks that have been made as replicas by those not familiar with functional Māori fishhooks, are tied so that the snood is aligned with the shank, parallel to the direction of the point (Fig. 16). In fact, the rotating manner in which the traditional fishhook functioned requires the snood lashing to be at an angle to the direction of the point (ideally at 90°) (Fig. 15). This is in contrast to metal hooks, in which the line is attached parallel to the direction of the point, enabling the hook to be 'set' (with the barbed point penetrating the fish) by the fisherman with a strong, upward jerk of the line when the fish takes the bait. The traditional Māori fishhook rotated away from the direction of the point and did not need to be set by the fisherman, as the fish hooked itself by trapping the jaw when tension was applied to the line (Paulin 2007). Composite hooks intended for catching albatrosses and other seabirds are generally much lighter in weight than hooks made for catching fish. These composite hooks have snood lashings that are more in line with the point (Fig. 8). However, it is not always possible to determine if some hooks with parallel snood lashings were made as albatross hooks, or were intended to be sold as replica fishhooks.

A bait string (*pākaikai*) was an essential component of the traditional Māori hook. The thick wood or bone shank prevented bait being threaded onto the hook, as in modern metal hooks, hence the bait had to be tied to the lower bend of the hook, leaving the point and narrow gape free to trap the fish's jaw. Many traditional hooks, particularly smaller one-piece bone hooks, had a small hole, notch or protrusion at the outer portion of the bend of the hook, to which the bait string was attached. Larger wooden composite hooks sometimes had a bait string extending from the snood lashing (*whakamia*). In most museum examples, however, the bait string, when present, has been confused with the snood whipping string (*whewheta*), which was used to

protect the lashing, and has been wound around the snood lashing as well. Among the hooks examined, no replica or fake hooks had bait strings attached.

Early collectors obtained numerous hooks that have been described as being made of human bone or with points of human bone, which seems to have enhanced the perceived value of the hook. However, in many of the hooks examined it is not possible to determine visually whether bone components are human, particularly if the bone has been polished. At present, DNA sampling techniques are too destructive to allow for an adequate sample to be extracted and tested, hence analyses must wait until less intrusive techniques are available. In the future, it may be possible to identify the materials used in the manufacture of traditional hooks through DNA analysis, and to distinguish modified or replica examples that use materials available only in the post-European contact period. Future development of techniques may provide some interesting insights, provided the issue of DNA contamination through years of handling can be resolved.

Conclusions

Only two European museum collections, at the Museum of Archaeology and Anthropology in Cambridge and Georg-August-Universität in Göttingen, contain Māori fishhooks that can positively be attributed to the Cook voyages 1768–79. There are other hooks that were possibly collected during Cook's voyages, but their exact status cannot be verified as precise details of the collectors and dates have been lost. Hooks known to have been collected on the second and third Cook voyages in the collections at the National Museum of Ireland, Dublin, have unfortunately become amalgamated and confused with hooks collected later, in the nineteenth century, and cannot now be clearly distinguished or identified. Similarly, hooks possibly collected during the second Cook voyage and held in the Pitt Rivers Museum, Oxford, have been mixed with hooks from the Beechey collection (1825–28) during the transfer from the Ashmolean Museum in 1886. Circumstantial evidence suggests that fishhooks in the Hunterian Museum collection, Glasgow, may have been collected on Cook's voyages, but this cannot be verified. Other European museums have Māori fishhooks in their collections, but attributions to Cook's voyages cannot reliably be established.

From the viewpoint of ethnography, it is important to understand the nature of Māori culture before it was

influenced by European contact. After 200 years of curio trading, the ethnographic collections from Cook's voyages – now largely in museums in Europe – are of critical importance. These voyages represent the first European contact from which identified collections were made, and provide a baseline of material from which studies can be undertaken, and from which changes in material culture can be documented. The majority of Māori fishhooks in museum collections (other than those from archaeological sites) were made by Māori with metal tools supplied by Europeans, or were made by European forgers, and were intended for trade. Hooper (2008) suggested that separating authentic from non-authentic artefacts is often couched in terms of whether something was made pre-contact and with stone tools (authentic), or made post-contact for sale and not for indigenous or traditional purposes (non-authentic).

In order to understand traditional Māori fishing culture, it is important to distinguish hooks made by Māori for fishing prior to European contact from those made for fishing by Māori using new materials after European contact. In addition, it is necessary to distinguish hooks intended for use by fishermen from those made by Māori after European contact for trade and exchange, those made by Māori on commission from European artefact dealers, and those made by European forgers, both in New Zealand and Europe.

The numerous Māori fishhooks in European and New Zealand museum collections include many replicas, ranging from well-made copies to crude fakes. Fake hooks, likely made by European forgers, can be distinguished from traditional or authentic Māori fishhooks collected by James Cook (and other eighteenth-century explorers during the exploratory phase of European expansion into the Pacific) through the form of the hook. These replicas do not meet the design requirements of a rotating hook to allow them to function efficiently. In particular, the lack of an inturned point or angled snood lashing, crude, often atypical adornment carvings, and the use of non-New Zealand fibres are all indicative of hooks that were never intended to be used for fishing.

Many early hooks collected in the late nineteenth and early twentieth centuries, made by Māori for trade purposes, cannot readily be distinguished from those made for fishing. Māori were quick to adopt new materials and metal tools that became available after European contact, and continued to make fishhooks using metals and imported fibres as well as traditional materials. As Hooper (2008) noted, whether the tool used was made of stone or shell, or of iron or steel,

has little to do with authenticity and more to do with speed of manufacture. These objects are the products of dynamic indigenous situations that demonstrate initiative with new tools, ideas and materials, and they have been made with greater or lesser amounts of skill. After European contact, Māori continued to make fishhooks following traditional designs and using methods that were sufficiently conservative to provide clear, demonstrable links with the past, thereby providing continuation and connection to traditional culture.

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