

Memoirs of the Queensland Museum | **culture**

Volume 8
Part 1

Goemulgaw Lagal: Natural and Cultural Histories of the Island of Mabuyag, Torres Strait.

Edited by Ian J. McNiven and Garrick Hitchcock

Minister: Anastacia Palaszczuk MP, Premier and Minister for the Arts

CEO: Suzanne Miller, BSc(Hons), PhD, FGS, FMinSoc, FAIMM, FGSA, FRSSA

Editor in Chief: J.N.A. Hooper, PhD

Editors: Ian J. McNiven PhD and Garrick Hitchcock, BA (Hons) PhD(QLD) FLS FRGS

Issue Editors: Geraldine Mate, PhD

© Queensland Museum
PO Box 3300, South Brisbane 4101, Australia
Phone: +61 (0) 7 3840 7555
Fax: +61 (0) 7 3846 1226
Web: qm.qld.gov.au

National Library of Australia card number
ISSN 1440-4788

VOLUME 8 IS COMPLETE IN 2 PARTS

COVER

Image on book cover: People tending to a ground oven (*umai*) at Nayedh, Bau village, Mabuyag, 1921.
Photographed by Frank Hurley (National Library of Australia: pic-vn3314129-v).

NOTE

Papers published in this volume and in all previous volumes of the *Memoirs of the Queensland Museum* may be reproduced for scientific research, individual study or other educational purposes. Properly acknowledged quotations may be made but queries regarding the republication of any papers should be addressed to the CEO. Copies of the journal can be purchased from the Queensland Museum Shop.

A Guide to Authors is displayed on the Queensland Museum website qm.qld.gov.au

A Queensland Government Project
Design and Layout: Tanya Edbrooke, Queensland Museum
Printed by Watson, Ferguson & Company

Canoes of Mabuyag and Torres Strait

Ian J. MCNIVEN

McNiven, I.J. 2015: *Canoes of Mabuyag and Torres Strait*. *Memoirs of the Queensland Museum – Culture* 8(1):127-207. Brisbane. ISSN 1440-4788.

Outrigger canoes used by Torres Strait Islanders are the largest and most complex watercraft ethnographically documented for nineteenth century Indigenous Australians. Measuring up to 21 m in length, these vessels were central to the functioning of Torres Strait Islander society in terms of marine subsistence and the movement of people and goods between islands and the adjacent mainlands of New Guinea and Australia. Indirect archaeological evidence suggests that use of large outrigger canoes dates back at least 2,500 years ago in Torres Strait. This paper presents the first synthesis of Torres Strait canoes in nearly a century, building on the foundational research of Alfred Cort Haddon. Using previously unpublished archival records, photographs, paintings and material culture, particularly the Briery collection of detailed watercolour paintings of canoes made during the HMS *Rattlesnake* expedition of 1848-49, this new synthesis expands technological understandings of canoe structure and function with developed insights into the social dimensions of canoe use. Colour images of canoes provide the first detailed published presentation of the elaborate decorative and aesthetic qualities of Torres Strait canoes. What emerges is a detailed picture of arguably the largest and most elaborate item of traditional material culture used by Indigenous Australians.

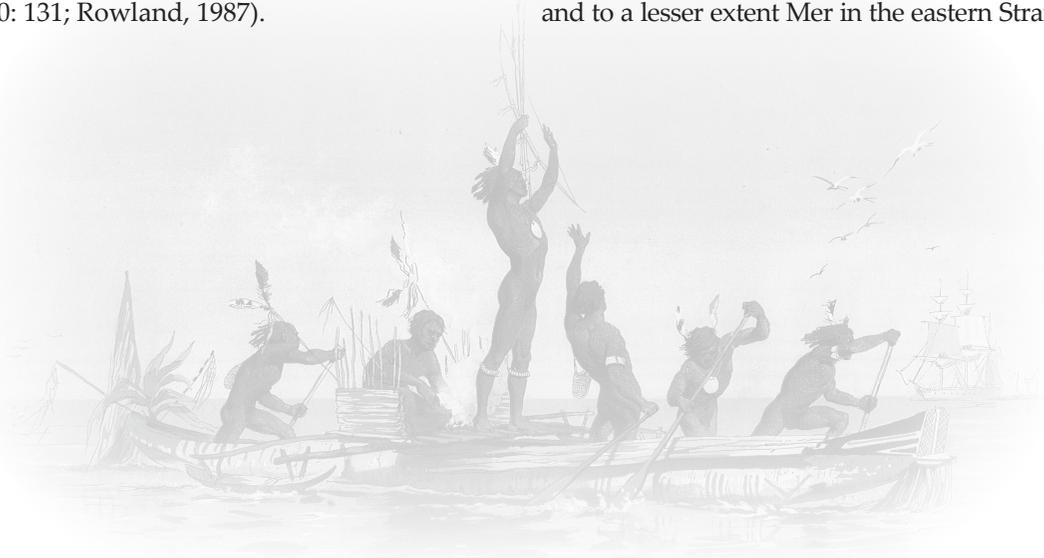
□ *Outrigger canoes, watercraft, Mabuyag, Torres Strait.*

Ian J. McNiven
Monash Indigenous Centre,
Monash University, Clayton, Victoria 3800, Australia
ian.mcniven@monash.edu

INTRODUCTION

Indigenous watercraft of Australia have long fascinated anthropologists and archaeologists (Haddon & Hornell, 1936-1938). In more recent years, the long-term history of watercraft in the region has been brought into focus by the realisation that the colonisation of Sahul (the combined landmasses of Australia and New Guinea) during the late Pleistocene represents the earliest uncontested evidence for use of purposefully-built, marine watercraft by modern humans (Balme *et al.*, 2009; Bednarik, 2003; Macaulay *et al.*, 2005). In terms of historically-known Indigenous watercraft in Australia, Aboriginal and Torres Strait Islander canoes of north Queensland are of special interest given they represent the only known examples of canoes with outriggers. It is generally believed that the concept of outrigger canoes diffused into northeast Australia from Melanesia where similar types of canoes are commonplace (e.g. Barker, 2004: 146; Beaton, 1985; Davidson, 1935; Lourandos, 1985: 38, 1997: 7; McCarthy, 1940; McNiven, 2006a; O'Connor & Veth, 2000: 131; Rowland, 1987).

Of the Australian Indigenous outrigger canoes, those from Torres Strait were the largest and most complex. Haddon (1937) provides the most detailed overview of these canoes based on nineteenth century observations by European mariners and his own anthropological field research in Torres Strait in 1888-89 and 1898 (e.g. Haddon, 1890a, 1904, 1908, 1912). His 1937 descriptions formed one section of his co-authored monumental survey of the geographical distribution of different forms of canoes across the Pacific – *Canoes of Oceania* (Haddon & Hornell, 1936-38). Like other accounts of canoes in the volume, Haddon's (1937) description of Torres Strait canoes was oriented towards technology and issues of canoe manufacture which were seen as relevant to broader questions relating to the 'history of migration, movement and cross-cultural borrowings' (Mondragón & Talaván, 2008: 9). Yet scattered throughout Haddon's previous publications on Torres Strait is a range of ethnographic information relating to the broader social context of Torres Strait Islander canoe use, drawn mostly from Mabuyag in the western Strait and to a lesser extent Mer in the eastern Strait.



From this work, Haddon (1904: 146) concluded that: 'One of the most valued possessions, or the most valued possession, of a Mabuyag man is his canoe' (Haddon, 1904: 146; see also Haddon, 1904: 289, 1912: 205, 149). Beckett (1972: 311-312) similarly acknowledged the importance of canoes: 'without the canoe hulls brought in from Papua the Islanders could not survive'. Barham (2000: 240-241) elaborates this critical point:

Without the canoes, neither the regular exploitation of offshore resources, particularly male-dominated dugong and turtle-hunting, nor social exchange of both specialist goods, horticultural produce and marital partners, would have been possible. Moreover, the canoe provided insurance against drought and associated crop failures, which represented the greatest risks to semi-permanent sedentary occupation on the small islands, by offering a reliable means of temporary evacuation in the event of crisis. Seen in this perspective, the need for sound reciprocal arrangements with both communities on adjacent islands and on mainland coastlines, through marital exchange and alliances, was paramount. Above all, the outrigger canoe, and associated systems of canoe procurement, technical maintenance, and regular hull replacement, appear to represent essential pre-requisites for the functioning of the Torres Strait Island communities as observed at European contact.

Haddon's work represents the single largest body of nineteenth century information on Torres Strait Islander watercraft, and his account of Mabuyag canoes similarly represents the most detailed body of nineteenth century information on the watercraft of any single Australian Indigenous group. While Haddon argues for a degree of uniformity

of canoe form and use across Torres Strait, his data for sections of Torres Strait beyond Mabuyag and Mer are scant. Yet Haddon was unaware of the unique and extensive archive of ethnographic information on Torres Strait canoes recorded by Oswald Brierly during the HMS *Rattlesnake* expedition of 1848-49. This archive, brought to light by David Moore (1979), allows Haddon's insights into Torres Strait canoes to be better contextualised in terms of detail, representativeness and technological change.

This paper presents a detailed update of Haddon's (1937) synthesis of Torres Strait canoes. Like Haddon, I focus on nineteenth century canoes prior to major modifications to marine vessels associated with the pearling industry and the introduction of luggers. While much of the paper draws heavily on Haddon's previously published information, I expand Haddon's technological focus by synthesising available information on the social dimensions of canoe use. My expanded synthesis includes three major sources of previously unpublished information. First, Haddon's fieldnotes, drawings and photographs from his 1888-89 and 1898 expeditions to Torres Strait held by Cambridge University (Library and Museum of Archaeology and Anthropology). Second, the Brierly 1848-50 archive of sketches and watercolour paintings held by the State Library of New South Wales (Mitchell Library, Sydney). Third, museum collections of material culture associated with Torres Strait canoes held by the Cambridge University Museum of Archaeology and Anthropology, the British Museum (London), and the Queensland Museum (Brisbane). A significant aspect to the paper is reproduction of watercolour paintings by Brierly and Haddon in colour. These images not only allow a unique appreciation of the spectacular colouring and adornment of Torres Strait canoes, they also provide

a better aesthetic context to appreciate the significance and visual form of painted canoe objects such as figureheads held by museums. From this new overview of Torres Strait canoes it will become clear that while Mabuyag canoes dominate available archival and museum records, demonstrated parallels with other parts of Torres Strait point to the broader regional applicability and representativeness of these records.

ANTIQUITY OF TORRES STRAIT CANOES

Understanding the history of canoe technology in Torres Strait is limited by poor insights into the antiquity of canoe technology in southeast Asia and Oceania more generally. In the absence of direct archaeological evidence for canoes beyond 1,000 years ago, the history of Oceanic canoes is based more on hypothetical assumptions on the technological requirements of long-distance voyaging. In this connection, hypotheses for the antiquity of double-outrigger canoes in southeast Asia range from pre-Austronesian (>4,000 years ago) (Horridge, 1987: 155; Irwin, 2010: 132) to Austronesian (<2,000 years ago) (Doran, 1974: 135). Three lines of evidence indicate outrigger canoe use in Torres Strait back to at least 2,500 years ago and watercraft use back to 9,000 years ago.

ARCHAEOLOGY

While archaeological remains of canoes have been found in Pacific island contexts such as burial caves (e.g. Ballard *et al.*, 2003) and canoes and canoe items such as paddles are known to preserve in mud along the Gulf of Papua (David *et al.*, 2005, 2008), no archaeological remains of canoes have been found in Torres Strait. However, a range of other archaeological evidence for activities that required watercraft hints at the possible antiquity of canoes in the region.

Use of islands and marine resources

People have been using watercraft in Torres Strait for as long as islands have been occupied and open water marine resources have been exploited. To date, the earliest evidence for use of islands comes from Badu 15 rockshelter, with lower level stone artefacts dating to between 9,000 and 6,800 years ago (David *et al.*, 2004), while earliest known evidence for use of marine resources is turtle bone in the lower levels of Dabangay midden on Mabuyag dating back to 6,000-7,000 years ago (Wright, 2011) (Figure 1). It is difficult to determine the nature of watercraft from this time period given that all large sea-going canoe hulls used in Torres Strait during the nineteenth century were imported from the Fly River mouth region, as suitable large trees were not available on Torres Strait islands (see below). While it is possible that large canoe hulls were imported into Torres Strait 7,000 years ago, lack of information on early trade systems of this period coupled with an absence of archaeological information on the antiquity of human occupation of the Fly River mouth and broader Trans-Fly region, makes such a hypothetical suggestion mere speculation. Whatever the situation, it is probable that some form of sea-going canoe was in use in Torres Strait at least 7,000 years ago.

Diffusion of outrigger canoes into Torres Strait

Haddon (1935: 313) wrote that the double-outrigger canoe was an early introduction to the region that followed a diffusion pathway that started in Indonesia ('where double outriggers are almost universal') and moved eastwards along the north coast of New Guinea before turning westwards along the southern Papuan coast into Torres Strait and southwards along the northern coast of Queensland. This canoe type was subsequently superseded by single-outrigger canoes across most of Melanesia.

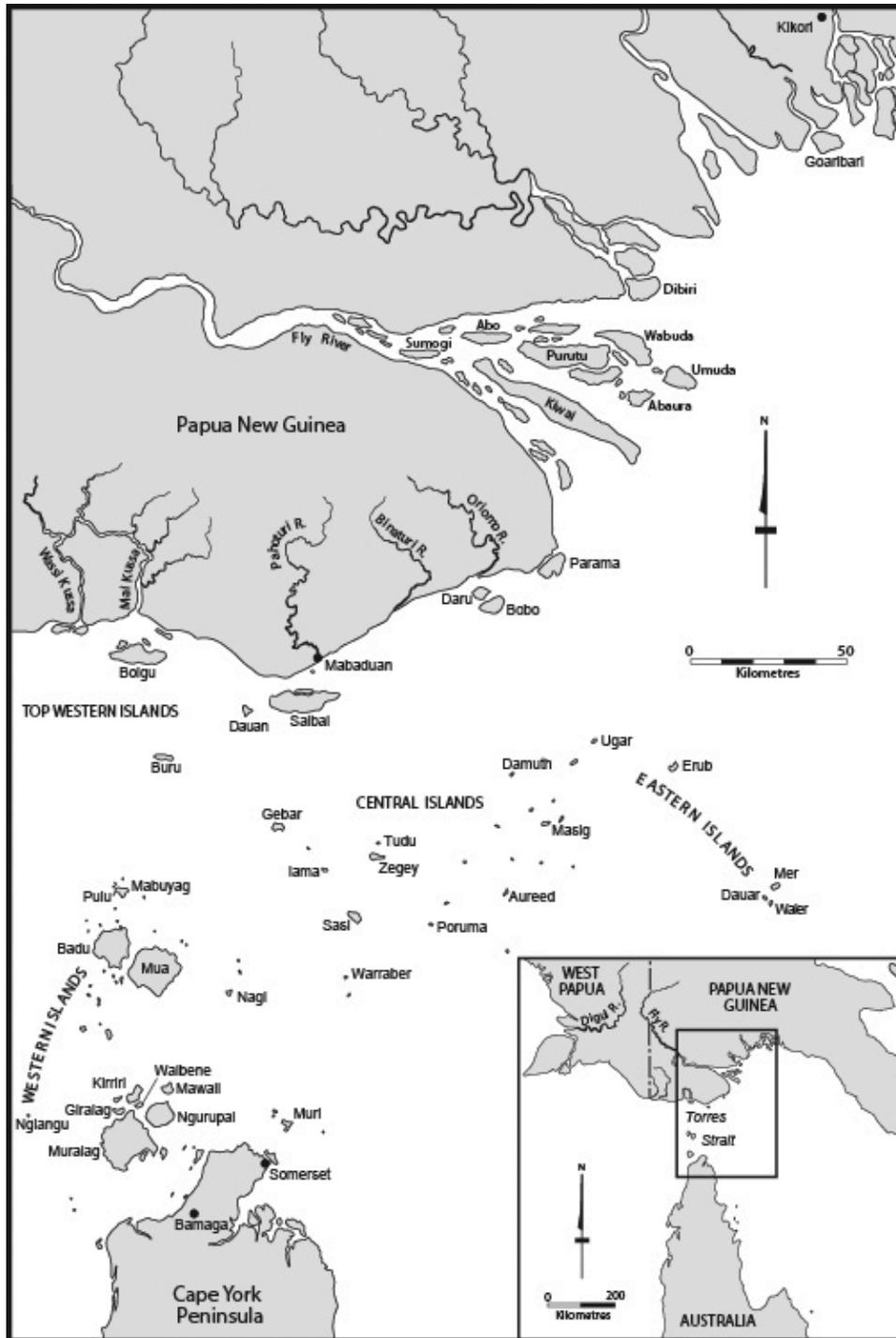


FIG. 1. Regional map.

Davidson (1935: 71) similarly posited diffusion of outrigger canoes into Torres Strait from New Guinea but hypothesised that ‘the single out-outrigger diffused earlier than the double-type’ along the Queensland coast. Golson (1972) hypothesised that around 6,000-5,000 years ago Papuan peoples moved into Torres Strait using what he considered to be an ancient form of double-outrigger canoe which had a *direct* boom-to-float attachment (i.e. outrigger float attached directly to the end of the boom) (cf. Haddon, 1935: 311-312). Subsequently, Austronesian speaking peoples using double-outrigger canoes with an indirect boom-to-float attachment (i.e. outrigger float separated from the end of the boom by vertical sticks) moved into the region in the past 2,000 years. Moore (1979: 308-313) similarly posited occupation of parts of Torres Strait by 6,500 years ago but limited the introduction of outrigger canoes to Austronesian incursions from eastern New Guinea around 2,000 years ago. The date of 2,000 years ago cited by Golson and Moore was based on existing archaeological evidence for the migration of pottery-using (Austronesian) peoples along the south coast of Papua New Guinea at the same time (e.g. Allen, 1972; Vanderwal, 1973). Recent evidence for the migration of pottery-making peoples into Torres Strait from eastern New Guinea around 2,500 years ago with likely ancestral Austronesian linkages (David *et al.*, 2011; McNiven *et al.*, 2006, 2011) may similarly mark the introduction of double-outrigger canoes to the region and the development of what Barham (2000) terms the ‘Torres Strait Cultural Complex’ around 2,500 years ago.

Diffusion of outrigger canoes down the Queensland coast

Indirect support for introduction of outrigger canoes to Torres Strait circa 2,500 years ago comes from the Queensland coast. For example, Beaton (1985) documented major

increases in occupational intensity of the Princess Charlotte Bay region located nearly 500 km south of Torres Strait commencing around 2,500 years ago. He concluded that: ‘The use of the islands 2,500 years ago probably had to await the introduction of the outrigger canoe of Papua-Melanesian origin’ (Beaton, 1985: 18). Beaton’s hypothesis is unlikely given that off-shore island use along the Queensland coast has since been shown to extend back more than 5,000 years (Barker, 2004; McNiven *et al.* 2014; Rowland, 2008). For the central Queensland coast, Barker (2004: 146) argues that outrigger canoes, as part of a broader package of ‘specialised marine technology’ that included harpoons and fish-hooks, are ‘present only after 3000 BP ... or perhaps even later, after 520 BP [c. 600 years ago]’ (see also McNiven, 2006a; Rowland, 1987).

Rock art

Rock art paintings of canoes provide a unique insight into the antiquity and form of watercraft in the region. Brady (2005: 449) recorded 41 paintings of canoes on six islands along the western island chain – Dauan, Pulu, Badu, Mua, Zurath and Kirriri, and on the adjacent mainland at Somerset near Cape York (Figures 1-2). For the most part, the age of these paintings is unknown. However, radiocarbon dating of charcoal found associated with fragments of red ochre pigment excavated below a rock art panel with two and possibly three canoes at Kabadul Kula on Dauan suggests the paintings were executed around 1,200-1,400 years ago (McNiven *et al.*, 2004a; McNiven *et al.*, 2009) (Figure 3).

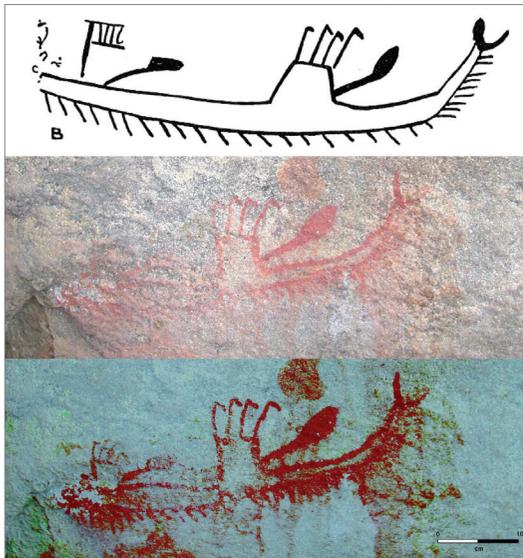


FIG. 2. Rock paintings of a canoe, Kirriri, southwest Torres Strait. Top: Sketch of painting made by Alfred Haddon in 1888 (from Haddon, 1904: Fig. 76), Middle: photo of painting (from Brady, 2005); Bottom: computer enhancement of same photo (from Brady, 2005).

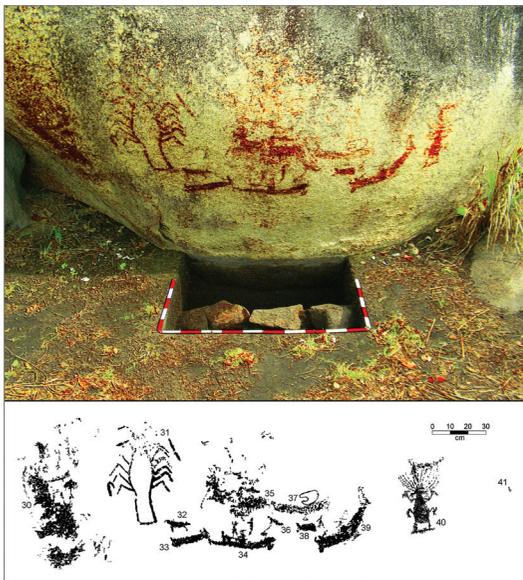


FIG. 3. Kabadul Kula, rock art Panel 2, Dauan, northern Torres Strait. The excavation pit revealed a concentration of red ochre pigment fragments dating to c.1,200-1,400 years ago suggesting an age for the paintings. Paintings include a canoe with outriggers (#39), canoe with crew (#34) and a canoe with a crab-claw sail (#37).

TORRES STRAIT CANOES: CLASSIC REPRESENTATIONS

The following selection of representations consists of images (watercolour paintings, engravings, lithographs and photographs) created by Europeans and scale models created by Torres Strait Islanders. They cover eastern, central and western Torres Strait and reveal the impressive size and complexity of canoes and the general uniformity of form that is the Torres Strait Islander canoe. These images will also be used when discussing in detail specific attributes of canoes in subsequent sections of this paper.

PAINTINGS & DRAWINGS

Torres Strait Islanders captured the imagination of many European mariners passing through the region during the late eighteenth and early to mid-nineteenth centuries. As master mariners in their own right, European voyagers were in a position to appreciate the size and complexity of the canoes coupled with the extraordinary sailing skills of Torres Strait Islanders.

the canoes [of the Islanders of Mer] are very long and narrow, swimmingly light, which renders the aid of outriggers necessary to prevent their upsetting. These outriggers consist of two long bamboo spars laid and fastened with grass ropes across the centre of the canoe, distant from each other about six feet [two metres], and on the outer ends of these two spars, on either side, another spar is tied parallel to the canoe itself, about seven feet [two and a half metres] from it, that is, beyond the gunwale or edge, and resting on the surface of the water, which, of course, must considerably impede the velocity of the vehicle, but which effectively prevents the risk

of upsetting. The space between the cross spars on the canoe, and to the distance of about two feet [two thirds of a metre] beyond its gunwale or edge on each side is fitted or filled up with a bamboo hurdle, covered with a grass mat (Rutherford, 1834: 195).

Some European voyagers were part of expeditions sent to Torres Strait by the British Admiralty to map the maze of reefs that

thwarted many sailors attempting to pass through this strategic shipping route out of Australia. In other cases, the expeditions had been returning to England or France via Torres Strait following detailed research in the Pacific. These expeditions included skilled maritime artists who captured on paper the impressive form and social dimensions of Torres Strait Islander canoes (Figures 4-13).

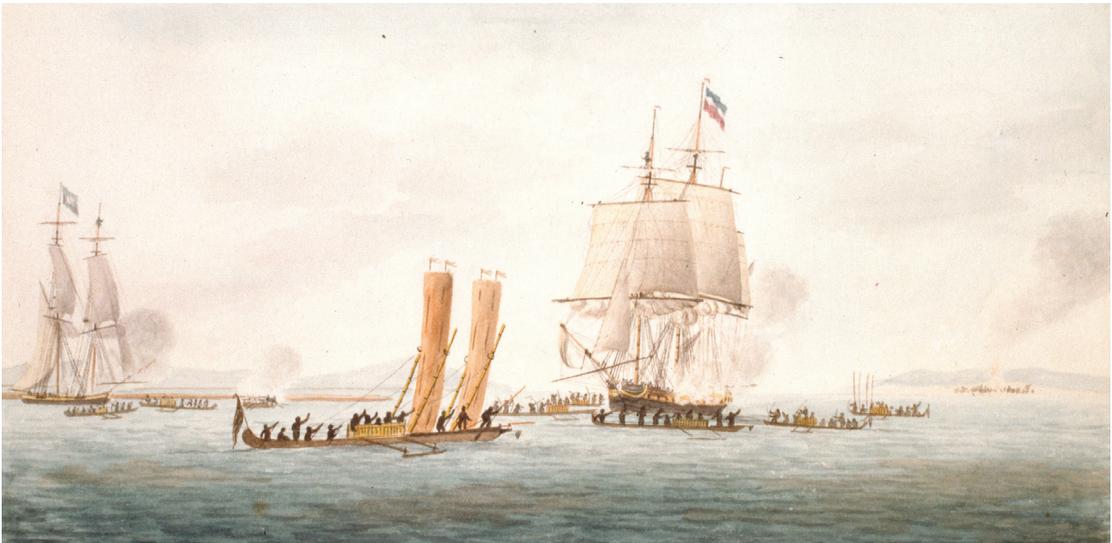


FIG. 4. Canoes of Erub, eastern Torres Strait, painted by Lt. George Tobin, September 1792 (Courtesy: Mitchell Library, State Library of NSW, PXA 563). In September 1792, Captain William Bligh in HMS *Providence* (accompanied by HMS *Assistant*) passed through Torres Strait on return to England from his second breadfruit voyage to the Pacific (Flinders, 1814). A flotilla of canoes came out from Erub to meet the two ships. A skirmish took place when Lt. Tobin fired on one of the canoes, believing his vessel was to be attacked (McNiven, 2001). Tobin recorded the event in a series of watercolour paintings that are housed in the Mitchell Library in Sydney. These paintings are the earliest European representations of Torres Strait Islander canoes.



FIG. 5. 'View of Murray's Islands with the natives offering to barter', watercolour painting by William Westall 1802 (Courtesy: National Library of Australia, PIC R4347, Westall box 10). Westall was expedition artist on board the *Investigator* accompanying Lt. Matthew Flinders during his famous circumnavigation of Australia (Findlay, 1998; Flinders, 1814).

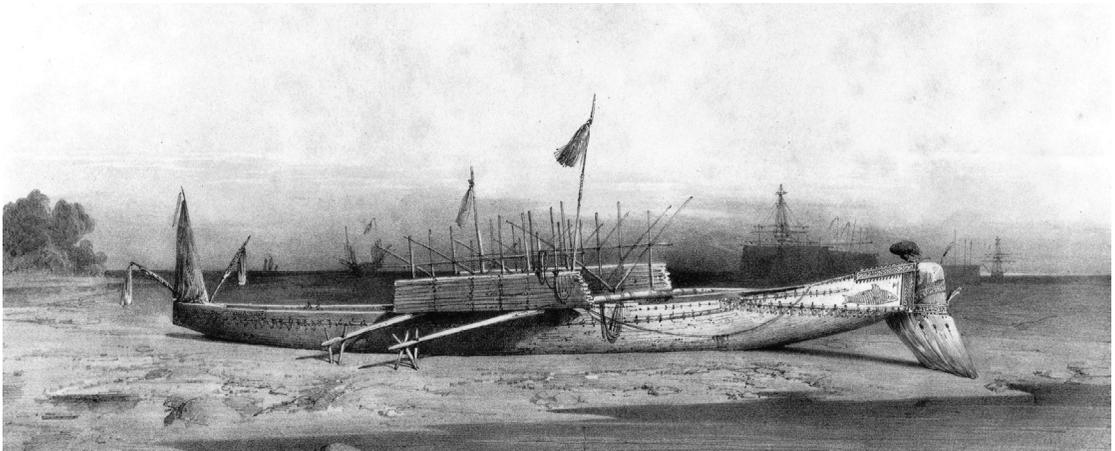


FIG. 6. Canoe on the beach, Tudu, central Torres Strait. Lithograph by Louis Le Breton. Excerpt from original published in d'Urville (1846: Pl. 190). Near the end of his second great voyage of 1837-40 to the 'South Seas', Frenchman Capt. Jules Sebastien-César Dumont d'Urville sailed through Torres Strait between 31st May and 12th June 1840 (Rosenman, 1987: 539-551). While d'Urville's crew spent time freeing their two ships *Astrolabe* and *Zélée* from Tudu's fringing reef, expedition artist Louis Le Breton made a number of drawings of people, artefacts and structures on Tudu, including a large canoe drawn up on the beach at the southern end of the islet. Note that the right (starboard) outrigger float has been removed, possibly for maintenance. This image is the first European illustration of a Torres Strait canoe out of water.



FIG. 7. 'Pacific Ocean, a native canoe meeting strangers off the Murray Islands.' Watercolour painting by Edwin Porcher, 1845. Porcher executed the painting during his participation in the 1844-45 British Admiralty survey expedition to Torres Strait under the command of Capt. Frances Blackwood in HMS *Fly* (Jukes, 1847). (Courtesy: National Library of Australia, nla.pic-an4101817). Published in Singe (1993: cover).



FIG. 8. Hand-coloured lithograph of a canoe at Erub, eastern Torres Strait, drawn by Harden Sidney Melville in 1844-45 and published in Melville (c.1849: Pl. XIX). Melville was artist onboard HMS *Fly* (Jukes, 1847). This image is the only known nineteenth century illustration showing a Torres Strait canoe being loaded with items (coconuts and water) in preparation for a voyage (Sweetman, cited in Allen & Corris, 1977: 35).



FIG. 9. Hand-coloured lithograph of a canoe drawn up within a village on Erub, eastern Torres Strait, drawn by Harden Melville in 1844-45 and published in Melville (c.1849: Pl. XVII). This image is the earliest illustration showing how Torres Strait canoes were stored out of the water within the social space of a village. Considerable effort was required to move large and heavy canoes from the water, up the beach, and into the village precinct.

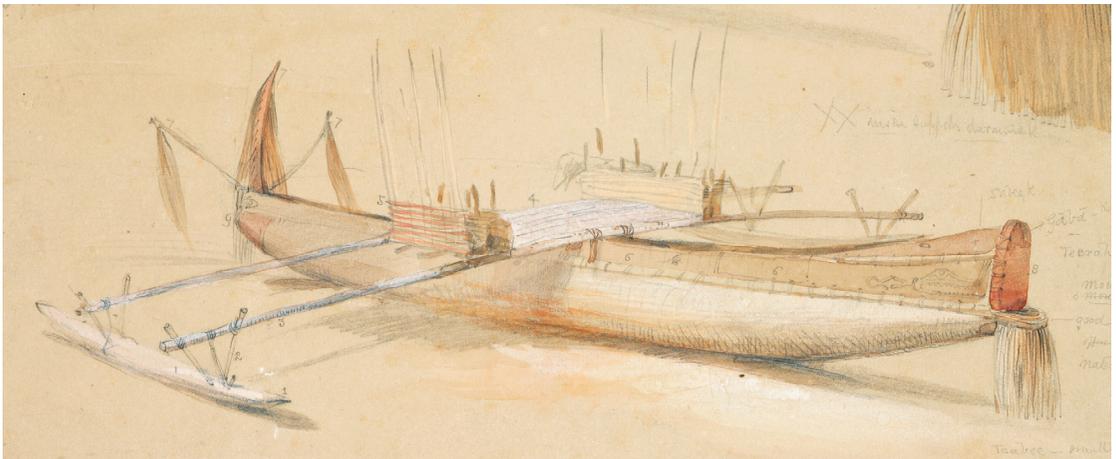


FIG. 10. Detail of pencil sketch and watercolour by Oswald Brierly of a canoe named *Bruwan*, Muralag, southwest Torres Strait, 1848-50 (Courtesy: Mitchell Library, State Library of NSW, PX*D 81). Brierly was the artist on the British Admiralty 1848-49 expedition to survey Torres Strait under the leadership of Capt. Owen Stanley in the ship *HMS Rattlesnake* assisted by *HMS Bramble* (MacGillivray, 1852). Brierly was a skilled artist and his illustrations and notes provide a unique archive of early ethnographic material for the region, particularly the Kaurareg people of southwest Torres Strait (Moore, 1979). His sketches represent the first glimpses of the elaborate colouring and decoration of Torres Strait canoes and remain the most detailed nineteenth century recordings of these watercraft. Brierly's expedition notebooks and sketches are housed in the Mitchell Library, Sydney.



FIG. 13. Chromatograph of the Kie Marina (Big Shadow), a 15.9 m-long Kaurareg canoe, by Oswald Brierly following recordings made in 1848-49 on the HMS *Rattlesnake* expedition (published in Methven, 1854).



FIG. 14. Photograph of a canoe drawn up within a village on Erub, eastern Torres Strait, c.1880s. This image is one of the earliest known photographs of a Torres Strait canoe. Photographer unknown (McNiven Collection).

PHOTOGRAPHS

In the second half of the nineteenth century, Torres Strait canoes become increasingly represented by photography. The most extensive archive of photographs of Torres Strait canoes was made by anthropologist Alfred Haddon who visited the region with a camera in 1888 and again in 1898 as head of the famous Cambridge Anthropological Expedition to Torres Straits. These photographs are housed in the Cambridge University Museum of Archaeology and Anthropology, England. Following the geographical focus of his research, most Haddon canoe photographs come from Mer in the eastern Strait and Mabuyag in the western Strait (see next section). Haddon's photographs capture both the older style canoes and late nineteenth century changes to canoes associated with the operation of the pearlshell and *bêche-de-mer* industries (Figures 15-18).



FIG. 15. Canoe with single outrigger drawn up on the beach at Mer, 1898. Photographed by Alfred Haddon (Courtesy: CUMAA, N.37896.ACH2, cropped). Published in Haddon (1912: Pl. XXV, Fig. 1). The single outrigger and long thin outrigger float reflects changes introduced by South Sea Islanders.



FIG. 16. Photograph of a canoe, Hammond Island (Kerriri), southwest Torres Strait. (Empire postcard). Undated but probably late nineteenth century. Photographer unknown (McNiven Collection).

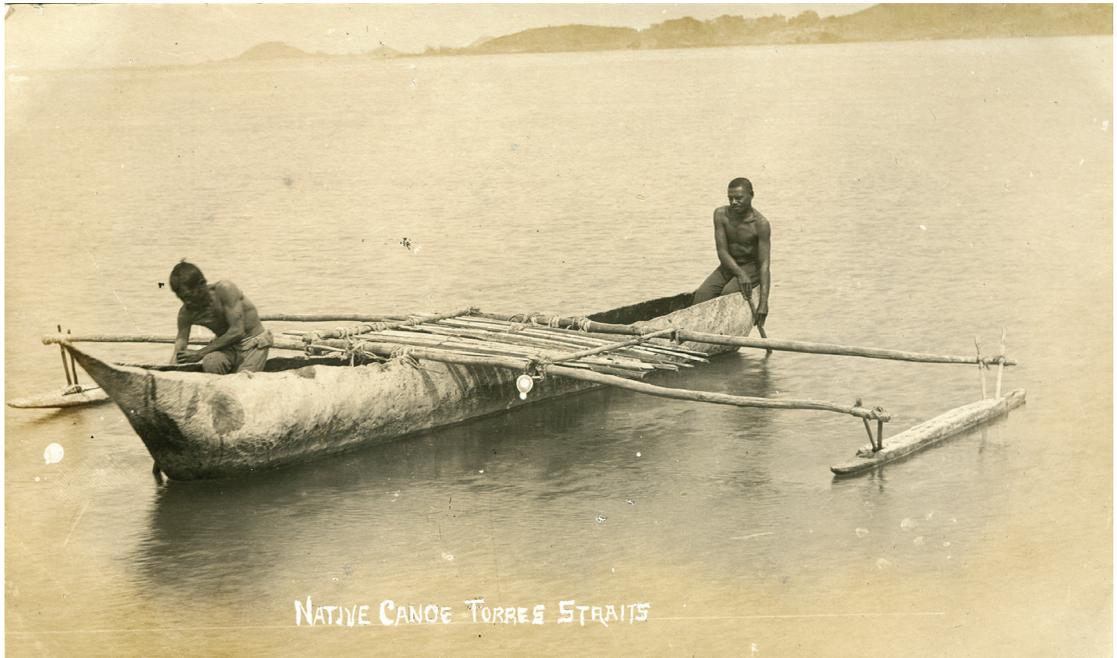


FIG. 17. Photograph of a canoe, possibly Thursday Island area, southwest Torres Strait. (Empire postcard). Handwritten inscription dated 'Thursday Island, 9/5/05' indicates the photograph was taken late nineteenth/early twentieth century. Photographer unknown (McNiven Collection).



FIG. 18. Canoes at Mer, photographed by Alfred Haddon, 1888 (Courtesy: CUMAA, N.22829.ACH2, cropped). Note the lugger-style rigging.

MODELS

Rare and unique insights into the form of Torres Strait canoes are provided by a unique model of a Torres Strait canoe held by the British Museum, London (Haddon, 1935: 311) (Figure 19). Acquisition records indicate that the canoe was presented to the museum on 9 November 1870 by A.W. Franks Esq. who obtained it from W.J. Kennett. The model was probably collected by W.J. Kennett, who accompanied missionary Rev. F.C. Jagg (Society for the Propagation of the Gospel, London) as a 'teacher and instructor in useful arts' at Somerset settlement, Cape York, in 1867-68 (Moore, 1979: x, 235). The model most likely represents a Kaurareg canoe from southwest Torres Strait.

The hull is carved from a single piece of wood and has a maximum length of 555 mm. The gunwale attachment, outrigger booms, central platform and storage crates are made from split bamboo. The attachments have been secured with fibre string and resin. Smudges of red pigment occur on the hull. Some of the bamboo sticks have engraved designs similar to those found on bamboo smoking pipes. As such, it is probable that these sticks represent sections of a recycled pipe. The model includes two paddles.

MABUYAG CANOES: CLASSIC REPRESENTATIONS

Representations of Mabuyag canoes (paintings, drawings, photographs and models) from the nineteenth century



FIG. 19. Model of a Torres Strait canoe collected by W.J. Kennett, 1860s (Courtesy: British Museum, Oc.6933.a © The Trustees of the British Museum). Published in Edge-Partington and Heape (1890, I: Pl. 320, Fig. 1) and Cranstone (1961: Pl. 25).

are dominated by one person – Alfred Haddon of Cambridge University. Haddon visited Mabuyag on two occasions – in 1888 as a zoologist and then in 1898 as an anthropologist, having converted to the discipline a result of his earlier visit to Torres Strait (see Herle & Rouse, 1998).

PAINTINGS & DRAWINGS

Haddon was a skilled artist but he was not of a calibre of either Brierly or Melville. His water colour paintings of canoes on Mabuyag from 1888 provide the only records of the colouring of Mabuyag canoes (e.g. Figure 20). In addition to his own drawings, Haddon provided pencil and paper to Mabuyag people in 1898 and requested that they also draw representations of local canoes (Figures 21-23).



FIG. 20. Canoe on the beach on the east coast of Mabuyag, painted by Alfred Haddon, October 1888. Haddon notes that the name of the canoe is *Yawaikan/lawaikan*. (Courtesy: CUMAA). Published in Urry (1998: Fig. 9.2).

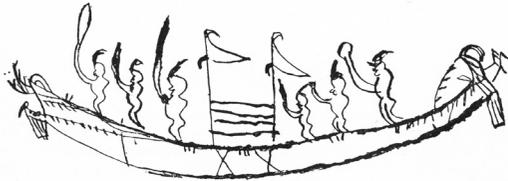


FIG. 21. Canoe, Mabuyag. Drawing by Sunday of Mabuyag showing men performing 'the turtle ceremony' in the canoe at Goemu village, 1898 (Haddon, 1912: Fig. 214).

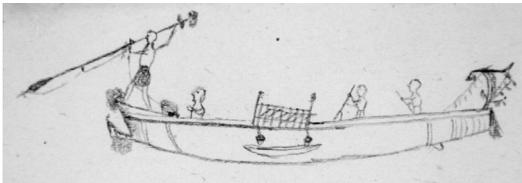


FIG. 22. Detail of a drawing of a canoe with harpooner and crew by Ellia, Mabuyag, 1898 (Courtesy: CUMAA, 2010.435C). Published in Kuklick (1998: Fig. 7.3).

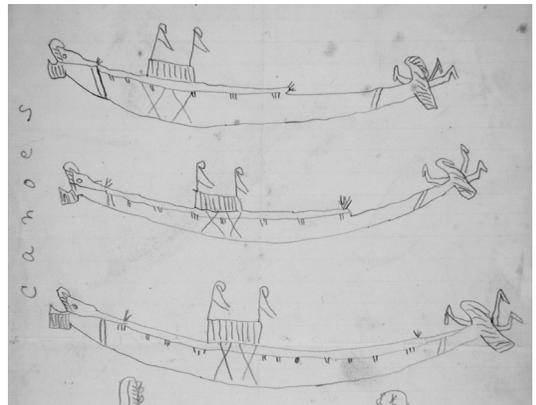


FIG. 23. Detail of a drawing of three canoes, probably by Gizu, Mabuyag, 1898 (Courtesy: CUMAA, 2010.624).

PHOTOGRAPHS

Haddon's photographs of canoes on Mabuyag represent the single largest collection of nineteenth century photographs of canoes for any island in Torres Strait. Figures 24 and 25 are particularly significant as they represent the only known photographs of a Torres Strait canoe with traditional sails fully rigged. Haddon also took photographs of canoes drawn up on the beach and moored in shallow water immediately offshore in 1888 and 1898 (Figures 26-30). A similar photo of a canoe moored in shallow water was taken by Henry Mobsby in 1899 (Figure 31). In 1901, travel writer William Edgar Geil visited

Mabuyag during preparation of his book *Ocean and Isle* (Geil, 1902) and similarly took photographs of canoes moored in shallow water and drawn up on the beach (Figures 32-34). A rare photograph dating to c.1910 of a beached canoe with men showing the arrangement of crew and harpooner (Figure 35) complements Ellia's drawing of a crewed canoe in 1898 (Figure 22).

MODELS

Haddon commissioned the manufacture of three model canoes on Mabuyag in 1898 'merely for the purpose of getting the names of the ropes, etc' (Haddon annotation, Figure 36).



FIG. 24. Canoe on the beach at Bau, Mabuyag, with men demonstrating crew arrangement. Photographed by Alfred Haddon, September/October 1888 (Courtesy: CUMAA, N.22899.ACH2). Published in Haddon (1912: Pl. XXVI, Fig. 2) and Lawrence (1994: cover).



FIG. 25. Canoe on the beach at Bau, Mabuyag, with men demonstrating crew arrangement. Port side view of canoe in Fig. 24. Photographed by Alfred Haddon, September/October 1888 (Courtesy: CUMAA, N.22778.ACH2). Published in Haddon (1912: Pl. XXVI, Fig. 1).



FIG. 26. Detail of a canoe drawn up on the beach at Bau, Mabuyag. This canoe appears to be the same vessel in Figs 24-25 but without masts and sails. Photographed by Alfred Haddon, September/October 1888 (Courtesy: CUMAA, N.22810.ACH2).



FIG. 27. Detail of canoes drawn up on the beach at Bau, Mabuyag. Photographed by Alfred Haddon, 1898 (Courtesy: CUMAA, N.37888.ACH2). Published in Haddon (1912: Pl. XXV, Fig. 2).



FIG. 28. Detail of a canoe moored on the water, Mabuyag. Photographed by Alfred Haddon, 1898 (Courtesy: CUMAA, N.37894.ACH2).



FIG. 29. Detail of a canoe moored on the water, Mabuyag. Bow view of canoe in Fig. 28. Photographed by Alfred Haddon, 1898 (Courtesy: CUMAA, N.37895.ACH2).



FIG. 30. Canoe moored on the water and another on the beach at Bau, Mabuyag. Two pearling luggers in the background with six people in the foreground cleaning pearlshells. Photographed by Alfred Haddon, 1898 (Courtesy: CUMAA, N.23011.ACH2).

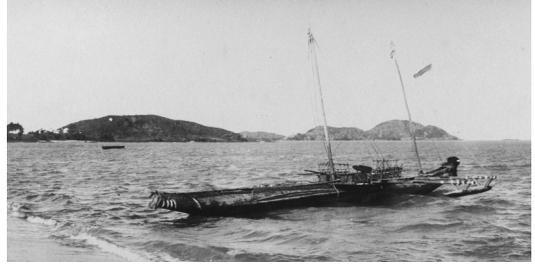


FIG. 31. Canoe anchored off the beach at Bau, Mabuyag, 1899. Photographed by Henry W. Mobsby during a tour of Torres Strait by J.F.G. Foxton (Home Secretary, Queensland Government) (Courtesy: John Oxley Library, State Library of Queensland, Box 10213).

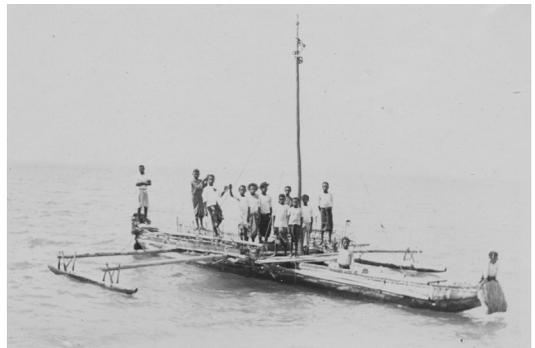


FIG. 32. Canoe on water, probably Mabuyag. Photographed by William Edgar Geil, undated but probably December 1901 (McNiven Collection).



FIG. 33. View of stern of a canoe drawn up on beach, Mabuyag. Photographed by William Edgar Geil, December 1901 (McNiven Collection).



FIG. 34. Front side view of a canoe drawn up on beach, Mabuyag. Photographed by William Edgar Geil, December 1901. Same canoe as shown in Figure 33 (McNiven Collection).

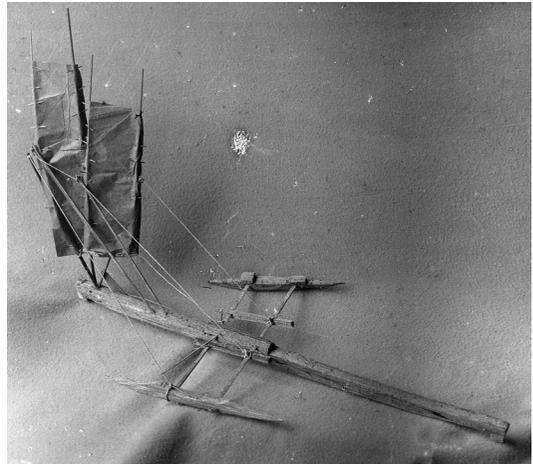


FIG. 36. Model canoe, Mabuyag. Photographed by Alfred Haddon, 1898 (Courtesy: CUMAA, N.37891.ACH2).



FIG. 35. Canoe drawn up above the beach with men demonstrating crew arrangement and harpooner standing on bow with harpoon (*wap*) with cassowary feather tassel. Southeast coast of Mabuyag, c.1900. Empire postcard printed c.1910 (McNiven Collection).

CANOE LIFECYCLE: PRODUCTION & DESTRUCTION

LARGE (IMPORTED) CANOES

The dugout hulls of all large Torres Strait canoes were imported from the Fly River mouth region of Papua New Guinea to the immediate northeast of Torres Strait. Such was the importance of imported Papuan canoes that Beckett (1987: 26) concluded that ‘Papua may be said to have underwritten the island economy’.

Observers of Torres Strait canoes in the late eighteenth century and continuing throughout the nineteenth century noted unanimously the use of a single tree trunk for the dugout canoe hull (Bligh, 1792 cited in Lee, 1920: 180; Portlock, 1792 cited in Lee, 1920: 254; Rutherford, 1834: 195; King, 1837a: 754; d’Urville, 1840 cited in Rosenman, 1987, II: 550; MacGillivray, 1852, II: 15; Connor, 1873 in Moresby, 1875: 4; Moresby, 1876: 133; Haddon, 1890a: 381, 1912: 207). Early recorders also understood that the canoes were imported from somewhere along the nearby New Guinea coast (King, 1837a: 660, 754; d’Urville, 1840 cited Rosenman, 1987, II: 550; Chester, 1870: 2), with Sweatman (1840s cited in Allen & Corris, 1977: 35) making the important observation that ‘the canoes are procured from New Guinea, there being no trees on the islands of sufficient size to make them’.

Fly River delta source

It was only when British colonial rule, including missionary and anthropological activity, began to extend along the southern Papuan coast in the late nineteenth century that specific information on the source of Torres Strait canoes, and the elaborate trade system associated with the purchase and transfer of these canoes southwards to the islands of the Strait, emerged.

In 1890, *The Journal of the Anthropological Institute of Great Britain and Ireland* published two papers that finally solved the mystery of the origin of Torres Strait canoes. The papers by Edward Beardmore (1890) and Alfred Haddon (1890b) both resulted from Haddon’s trip to Torres Strait in 1888. Haddon visited Beardmore who had resided for some years in Mawatta on the New Guinea coast. Beardmore was ‘a small trader and buyer of pearl-shell and bêche-de-mer’ (Lawrence, 2010: 95) and ‘had very friendly relations with the natives’ according to Haddon (1890b: 466). Both Haddon’s and Beardmore’s papers were prompted by answering James Frazer’s 1887 anthropological questionnaire (Ackerman, 1987: 121). Beardmore (1890: 464) noted:

Canoes are made at Kiwai and Paramoa [Parama] (Bampton Island) but not, I am assured, up the Maikūsa [Mai Kussa] Baxter River, where the people are cannibals and deadly enemies to all the others this side of their country. Payments are made to suit the purchaser, *sometimes in advance*, but usually by three instalments of shell ornaments (or in recent times of trade, such as tobacco, tomahawks, and calico). The unadorned canoes, with but a single flimsy outrigger, are transferred from one village to another until the destination is reached; each party receiving the canoe being responsible for the payment by the next.

Similarly, Haddon (1890a:341; see also Haddon, 1904: 296) recorded:

The large canoes in the Straits all come from Daudai [New Guinea coast opposite Torres Strait], about the neighbourhood of the Fly River. I was told the logs were cut and hollowed at Wabad (Wabuda?) [Island] and fitted with a single small outrigger. Thence they passed through the hands of the

Kiwai and Mowat [Mowatta] people on the mainland of New Guinea, and across to the island of Saibai. Here they are re-rigged with two outriggers, and a gunwale is fitted and the canoe decorated with a figure-head, bow ornament, and otherwise ornamented with feathers and shells. From Saibai the canoes found their way to the other islands of the western division of the Straits.

The scale of the output of canoes at the mouth of the Fly River is revealed by the Rev. James Chalmers of the London Missionary Society (LMS):

The large and best canoes are dug out at the villages near the mouth of the [Fly] river on the left bank. Once I called there, and all along the bank, in front of the village, were quite a few hundred large canoes, covered with coconut leaves. My boat's crew were natives of Ipisia and Sagunane [villages on Kiwai Is.], and, as soon as those ashore saw them, the coconut leaves were thrown aside and the canoes exposed for sale (Chalmers, 1903: 123).

These observations were confirmed by Haddon (1904: 296; see also Haddon, 1935: 350):

The large canoes all come from the delta of the Fly River. I was told in 1888 that the logs were cut and hollowed out at Wabad and fitted with a single outrigger. In 1898 we were informed they came from Wabad and Dibi, the former is evidently Wabuda [Island] and the latter Dibiri [Island]. The late Rev. James Chalmers (*Journ. Anth. Inst.* XXXIII. 1903, pp. 111, 117) refers to canoes being made at and exported from Dibiri and other villages near the mouth of the Fly River, on its left bank.

David Lawrence's detailed analysis of Torres Strait canoe trade, which involved recording of oral histories at the mouth of the Fly River, confirms that 'all large canoes in Torres Strait came from the Fly estuary ... principally Wabada village in the Bamu River where canoes were fitted with one outrigger' (1994: 272; see also Lawrence, 2010).

Hull manufacture

During the early twentieth century, details on the elaborate secular and ritual processes associated with production of canoe hulls at the mouth of the Fly River were recorded. The two key sources are Finnish anthropologist Gunnar Landtman, who undertook anthropological research at the mouth of the Fly River, especially Kiwai Island, in 1910-1912 (Lawrence, 2010), and local LMS missionary Rev. Edward Baxter Riley. Riley (1925: 110) observed that before chopping down the carefully-selected tree, the following words were spoken: 'You now stand up a tree; we are going to cut you down; you will presently walk about on the top of the water; by and by we shall decorate you [paint you]'. The root end of the tree was always the bow end of the canoe and it would take 40-60 men to drag a canoe to the river bank (Riley, 1925: 113). Riley (1925: 109) noted that construction was staggered due to other life commitments; thus 'to complete one may take from six to twelve months, after which finishing touches are given to it'. Landtman (1927: 209) made the following observations:

While the work [hollowing out the canoe trunk] was in progress the workers were not allowed to swim in the sea, for this would not only harm the canoe, but themselves as well. There existed an association between the tree and the canoe-builder: the sap flowing from the cuts in the tree was its blood, and by way of a

sympathetic connection between the two, the builder's skin was thought to have been pierced in a magical sense, so that if he got into the sea, the water would penetrate his body and drag him down.

After decoration, the final act of construction was as follows:

The old couple also "wake up" the canoe by swinging a bullroarer close to the bow of it, first in reference to the harpooning of a dugong or turtle, and then a second time for the capturing of the animal, these two actions being looked upon as distinct. The same observances, sometimes varying, are generally repeated before harpooning expeditions (Landtman, 1927: 211).

Trade routes

The canoe trade system between New Guinea and Torres Strait has been extensively documented and discussed by Haddon (1904, 1935), Lawrence (1994) and Vanderwal (2004). Broadly speaking, canoes entered the eastern, central and western islands of the Strait through three separate trade pathways. The eastern route to the Murray Islands 'passed through Erub (Darnley) and Parama to the Fly River delta' (Haddon, 1904: 297; see also Haddon, 1908: 185). The central route 'was from Mowat [Mowatta] to Tud [Tudu], and from thence to the [other] central islands, and *viâ* Nagir [Naghir] to Muralug [Muralag]' (Haddon, 1890a: 342; see also Haddon, 1904: 296, 1935: 350). The western route was characterized by Beardmore (1890: 464) thus: 'The builders, or rather diggers-out, usually deliver at Mowat [Mowatta], from thence the canoe travels to Saibai, then to Mabruäg [Mabuyag] and from there to Bădu, Moa [Mua], and ultimately say to Muralüg [Muralag] or Năgir [Naghir]'. A slight variation is provided by Haddon (1904:

297): 'There is no mention of canoes going to Moa. Probably the perpetual warfare with Badu and Mabuiag extinguished the trade with that island. The trade route was: – Muralug [Muralag], Badu, Mabuiag [Mabuyag], Dauan and Saibai, Mawata [Mawatta] and Tureture, Saguane and Kiwai, to Wabad [Wabuda] and Dibi [Dibiri]'. During his trip to Torres Strait in 1888, Haddon (1904: 296; see also Haddon 1890a: 341-342) obtained the following information about ordering a canoe:

If a Muralug [Muralag] man wanted a canoe he would communicate with a relative at Moa who would speak to a friend of his at Badu; possibly the Muralug [Muralag] man might himself go to Badu. The Badu man would cross to Mabuiag to make arrangements and a Mabuiag [Mabuyag] man would some time or other proceed to Saibai, or at all events let a Saibai man know about it. If there was no canoe available at Saibai word would be passed on along the coast that a canoe was to be sent down. The canoe would then retrace the course of the verbal order, and ultimately find its way to Muralug [Muralag]. If a man in any of the intermediate places had a new canoe to spare, he would sell it. Should a canoe have to be made to order, a very long time would elapse before it arrived, as the message itself would be transmitted only when there happened to be a canoe going to the next stage, and the same applied to the delivery of the canoe.

In addition to the three trade routes extending southwards from New Guinea, it is also clear that canoes were traded between various island groups. For example, Rev. W.H. MacFarlane informed Haddon (1935: 65, 77) that Badu and Mua in the western Straits 'sent human skulls' to Tudu in the

central Straits 'to exchange for canoes' – 'one head would purchase an ordinary canoe and a lower jaw a small canoe'. These cross-exchanges are consistent with Lawrence's (1994) view that Torres Strait exchange routes were not set in stone but were open to manipulation and negotiation.

Exchange and payment system

The system of payment for canoes was complex, involving instalment payments using a range of prestigious and valuable exchange objects whose value could be negotiated depending on a broad range of social and political circumstances. A useful overview of the system is provided by Haddon (1904: 296; see also Haddon, 1890a: 342):

Payment was usually made annually until the canoe was a little broken; generally three instalments were paid. When a piece came off the canoe it was forwarded together with the final payment as a proof of the statement as to the condition of the canoe. The annual payment was, say, three *dibidib* or goods of about equal value. Should a man be 'hard up' when the annual payment became due, a certain amount of credit would be given, if the man had honestly paid all he could afford, doubtless his relatives or friends helped him. If the man could afford it he would make a single and final payment. ... The intermediaries were paid for their services by 'charging on', the amount depending upon individual cupidity, or they might be recompensed for their trouble by presents from the purchaser.

Shell valuables were the most diverse form of payment for canoes. They include *alup* (*Melo* spp. shell containers), *bu* (trumpet shells, *Syrinx aruanus*), *dibidib* (cone shell discs) and *uraz/waraz* (necklaces made from *Oliva* sp.

shells) (Haddon, 1890a: 342-343, 1904: 296-297, 1912: 44). The most valuable shell item was a *wauri/waiwi* (arm-shell made from a cone shell) which 'was the most valuable ornament' for Torres Strait Islanders (Haddon, 1890a: 370). Indeed, a single *wauri/waiwi* could purchase a canoe (Haddon, 1890a: 343, 1908: 185; see also Haddon, 1912: 236, 1935: 50) (Figure 37). Lawrence (2010: 96-97) makes the interesting observation that in the Fly River delta an arm-shell (known locally as *mabuo*) was valued at between £2 and £4 around 1900 which was equivalent to 2-4 months wages for Papuans employed on pearling boats. Other items used in canoe payments include human skulls and jaws taken in raids (Haddon, 1935: 80), harpoons (Haddon, 1904: 297), ochre (Haddon, 1935: 77, 80, 382), dugongs (Haddon, 1904: 97, 112, 119), 'pieces of iron ... obtained from wrecks' (Haddon, 1904: 296-297) and money earned from working on pearlshell boats (Haddon, 1935: 112).

From the canoe producers side at the mouth of the Fly River, Landtman (1927: 214) reported that 'When at last the canoe broke up, the owner sent the seller an armshell or string of



FIG. 37. Cone shell arm-shell *mabuo* from the Fly River delta. Max L = 172 mm (McNiven Collection) (Photo: Steve Morton). These shell valuables probably were traded in from Torres Strait (where they were known as *wauri/waiwi*) as part of canoe payments. According to Jiear (1904 cited in Lawrence, 2010: 96), 'the wealth and importance of a family is gauged largely by the number of arm shells the members of it possess'.

dogs' teeth (which highly valued ornaments seem to have been conventionally regarded as the last instalment in paying for a canoe), and, to emphasise the significance of this gift, he attached a small piece of the broken craft to it'. Furthermore, 'If a canoe got wrecked or was destroyed in some other way shortly after its purchase, the owner sent in the ordinary final payment, together with a piece of the ruined vessel, as mentioned above, but no further instalment after that' (Landtman, 1927: 215).

Commercial morality

Haddon (1890a: 316) reported that 'There must have been a strong sense of commercial morality, or the custom of purchasing canoes on the three-year-hire system could never have originated or have been kept up'. He noted that this morality had a 'utilitarian foundation' given that cheating or breach of contract would result in a cessation of canoe supply which would be disastrous in terms of peoples' ability to obtain food (especially turtle and dugong), in addition to initiating violent conflict and sorcery (see also Beardmore, 1890: 464; Haddon, 1890a: 342, 1904: 296). Yet McNiven *et al.* (2004b: 271, 283) note that it could also be argued that a certain 'symbiotic relationship' existed between Torres Strait Islanders and Papuan lowlanders in that the former required canoes from the latter but the latter also required stone for axes to make canoes which they obtained from the former. If trade ceased then neither group could have canoes.

SMALL (LOCAL) CANOES

While large canoes imported from New Guinea dominate the Torres Strait canoe literature, it is also clear that a smaller type of locally-made canoe was employed by Torres Strait Islanders. Numerous references specifically mention the use of 'small' canoes vis-à-vis large canoes across various parts of

the Strait – southwest (Haddon, 1904: 330; Moore, 1979: 137-138), west (Haddon, 1935: 65), central (Brierly 1849 cited in Moore, 1979: 137; MacGillivray, 1852, II: 41) and east (Haddon, 1908: 32; Rutherford, 1834: 198). Haddon (1912: 207) recorded that 'A small canoe in Mer is called *wasar*' (Figure 38). He also observed that 'Small canoes were and are used by the women to go fishing on neighbouring reefs' (Haddon, 1890a: 381, 1912: 205; see also Lawrie, 1970: 265).



FIG. 38. Photograph of a small canoe with two young boys, Mer. Image is dated 1901 and credited to Nicholas, St Austell Studios, Thursday Island (McNiven Collection).

Carved local trees

Few details are available on the manufacture of small local canoes. The most detailed account is provided by Brierly on the Kaurareg in 1849, summarised by Moore (1979: 150) thus:

They go into the bush and select a large tree and cut it down with axes—axes they get from the ships that pass. When the tree is felled, all the people, men, women and children, all help drag it down to the waterside. They make a cut at each end of the log, then chip it all out with axes out of the middle. They don't use fire.

Sometimes only one man works at it—it takes him a long time. Sometimes his friends help him, then he gets it finished much sooner. Some work at the outrigger poles, some at the float. All going on at a quantity of meat, turtle, *koti*, [obarr?] into the fore part of her. She is then launched, men and women all helping. The food is then taken out and eaten on the shore by the men, the women not being allowed to touch it. It is *adzarr* to them. This *adzaar* is a kind of tabu applied to certain things which the women are not allowed to eat. The first turtle caught in the new canoe is *adzarr* to the women.

Locally-made Kaurareg canoes were made 'from the trunk of the cotton tree hollowed out, the wood of which being soft and spongy becomes very light when dry' (Kennett, 1867 cited in Moore, 1979: 239; see also Brierly 1849, cited in Moore, 1979: 112-113). It is also possible that the Kaurareg obtained small canoes made by the Gudang of Cape York (Moore, 1979: 118). MacGillivray made the following observation on Naghir: 'A solitary native was seen at work upon a canoe near the beach, but when a boat approached the shore he withdrew. The canoe was about half finished' (1852, II: 34; see also Brierly, 1849 cited in Moore, 1979: 135).

Following observations made in 1888, Haddon reported: 'Although canoes may be locally made in the Cape York district and in the Prince of Wales [Muralag] group and at Nagir [Naghir], as MacGillivray informs us, and I too have seen a small canoe which was made by a Muralug [Muralag] native; this is only occasionally done, and those there made are probably all of small size' (1890a: 383; see also Haddon, 1912: 207 and Moore, 1979: 239). Gabey (1949: 3) noted that Murray Islanders made small canoes from local cotton trees (possibly *Bombax* sp.)

(Lawrence, 1994: 283). It is also possible that small canoes were made from logs deriving from New Guinea found floating in the sea – a known feature of the Strait (King, 1837a: 754; Singe, 1979: 5-6). Manufacture of small canoes from 'floating logs' was observed in the Top Western Islands during the early twentieth century (Done, 1987: 36).

Recycled large canoes

Another way of making a small canoe was cutting a large canoe down to size. The first hint of this process is provided by MacGillivray while off Warraber in the central Strait in the 1849: 'The canoe was rather singular in form, with greater beam than I had ever seen in one, nor did the sides tumble home as usual; the bow was sharp, but the stern square, as if effected by cutting a very large canoe in halves, and filling up the open end' (1852, II: 40). This cut-down canoe appears to be depicted in a painting by Oswald Brierly titled 'small canoe from Sue [Warraber] Island' dated December 1849 (Figure 39). A similar cut down canoe is mentioned in legendary stories from Mabuyag concerning Kuyam, and from Mer concerning Abob and Kos (Haddon, 1904: 75, 1908: 25). Such canoes are called *gabö* in the western Strait and *pau* or *pao* in the eastern Strait (Haddon, 1912: 207). In some cases, *pau* represents a section of large canoe which has 'a piece of wood nailed across each end to keep out the sea' (Haddon, 1912: 158). A related form of canoe referred to as *kauta* by the people of Mabuyag is made simply from the split side of a large canoe (Haddon, 1904: 104, 1912: 207). Barham & Harris (1987: 94) note that a 'half-canoe' was used to navigate canals on Saibai.

NAMING

Little information is available concerning the process of naming canoes. Haddon (1912: 205) stated simply that 'Many canoes have



FIG. 39. Watercolour painting titled 'Small canoe from Sue [Warraber] Island', central Torres Strait, dated 7 December 1849 and executed by Oswald Brierly during the expedition of the HMS *Rattlesnake*. Excerpt from original (Courtesy: Mitchell Library, State Library of NSW, PX*D 82).

proper names which in some cases are now painted on the gunwale, but I do not know whether giving names to canoes was an old custom'. Haddon recorded the names of six large canoes on Mabuyag (Table 1) but did not elaborate on the meaning or significance of these names or the naming process. The name of the canoe *Adi* from Mabuyag is painted in white on the starboard stern of the gunwale (Figure 68), while the name of the canoe *Wa[?]o* from Erub is painted on the portside stern of the hull (Figure 14). All other information on canoe naming comes from Oswald Brierly's ethnographic recordings of the Kaurareg from 1848-49 (Moore, 1979) (Table 1). The Brierly archive was unknown

to Haddon. In 1849, Brierly noted:

All the principal canoes of Moralug [Muralag] had names, like vessels of white men. There were five large and some smaller ones at the island. The name of the largest was *Uzanna*, which means a large net, and its chief man Ubee. The next, a smaller one, was called *Yerka*, meaning the gum or resin of a tree, and its chief was Eela. About six men to each canoe. A third was called *Bouwan* after a native of that name, its owner or chief Tepat (alternative name: Passiwapod). The name of the fourth was named after a native's dog, Pogatsie, its captain

Table 1. Canoe names from Mabayag and the Muralag Group.

Goemulgal (Mabayag) Canoe name	Reference	Canoe size	Kaurareg Canoe name	Canoe size	Reference
<i>Waumeran</i> (frigate bird)	Haddon (1904:308)	large	<i>Kie Marina</i> (big shadow)	large	Moore (1979: 45, 283)
<i>Aritabun</i> (rain snake)	Haddon (1904:316)	large?	<i>Uzanna</i> (large net)	large	Moore (1979: 99, 150)
<i>Yacawaikan</i> / <i>larawaikan</i> (caretaker/watcher/observer)	Haddon drawing (1888) Haddon (1912:213) Herle & Philp (1998:12) Fig. 20	large	<i>Yerka</i> (gum/resin of a tree)	large	Moore (1979: 150)
<i>Adi</i> (great one)	Haddon (1912:210, Pl.XXXV) Fig. 68	large	<i>Bouwaan</i> (person's name)	large	Moore (1979: 150)
<i>Ausin</i> (person's name)	Haddon (1912:214)	large	<i>Pogatsie</i> (name of a dog)	large	Moore (1979: 150)
			<i>Maleel</i> (iron bar)	large	Moore (1979: 150)
			<i>Bidthem</i> (poisonous snake)	small	Moore (1979: 83, 89, 151)
			<i>Alpanya</i> <i>Walter Morrice of London</i>	?	Moore (1979: 87)
			<i>Bruan</i> / <i>Bruuan</i>	large	Text associated with drawings in Figures 10, 46, 64, 67.
			<i>Booroan</i>	small	Text associated with drawing in Fig. 48.

* Meaning of canoe names courtesy of Rod Mitchell.

Sallalli. The fifth canoe was called *Maleel*, meaning iron bar, its owner Pequi. They are great wreckers and pull the ships to pieces as much as they can to get the iron bars which they call maleel. All the raised woodwork of their canoes is the planks taken from ships. ... Sallalli, an old man with a small canoe called *Bidthem* – a poisonous snake (Moore, 1979: 150-151).

Brierly added that: '*Pogutz* was a dog that belonged to a man upon the island. It had a curious ugly crooked tail and when this canoe was made it had an ugly bent stern like *Pogutz's* tail and they called it *Pogutz* after him' (Moore, 1979: 188). Brierly also recorded another Kaurareg canoe named *Alpanya*, adding that 'On the port side of the bow of this, the name of a vessel "*Walter Morrice of London*" was cut (we had heard of this vessel having passed through the Straits in safety before our arrival)' (Moore, 1979: 87). It is possible that the English words were carved into the canoe by a crewmember of the *Walter Morrice* (Garrick Hitchcock, pers. comm. 2012). The information on Kaurareg canoe names indicates that the process of giving canoes names was indeed 'an old custom'. Indeed, the canoe with the dual name of *Alpanya* and *Walter Morrice of London* indicates also that the process of giving European names to canoes is a tradition that extends back at least to the 1840s. While Haddon's information suggests only large canoes were named, Brierly makes it clear that both large and small canoes could be given names.

CANOE OWNERSHIP

Members of the 1848-49 *Rattlesnake* expedition were of the opinion that senior men who are community leaders 'are generally the owners of large canoes' (MacGillivray,

1852, II: 27). Brierly is clear that Kaurareg canoes, at least those with names, belonged to individual men (Moore, 1979: 87, 150-151, 188). This view of individual men of seniority owning canoes was supported in part by Haddon after his visit to the region in 1888 (Haddon, 1890a: 330). In terms of inheritance, Haddon (1935: 345) noted that: 'A canoe (which in Mabuyag is as important as a garden in Mer) descends to all the sons, the eldest being the captain in his capacity of executor. If there are no sons, the next brother of the deceased takes it outright, but if the sons are very young he keeps it till they are old enough to manage it for themselves. This joint ownership of canoes is a fruitful cause of disputes' (see also Haddon, 1904: 286-287). Brierly (1849, cited in Moore, 1979: 100) makes it clear that canoes could also be loaned by their owners to others to use.

MAINTENANCE

Few details are available on maintenance of Torres Strait canoes beyond care taken to cover canoes from the sun while on the beach (see below). However, it is obvious that canoes would require dedicated maintenance given the battering they would endure while sailing the open and often rough seas of Torres Strait. Wind and waves twisted and flexed double-outrigger canoes lashed together with twine and placed considerable stress upon large canoe hulls. While plant materials (wood and twine) provide flexibility and allow canoes to absorb considerable impact, cumulative impacts necessitated constant tinkering and maintenance. For example, in September 1792, Lt. Portlock from the HMS *Assistant* visited Rennel Island (Mauar) in the central Strait and observed that 'There were also two or three canoes lying up among the houses that appeared to be damaged' (cited in Lee, 1920: 260). Brierly mentions a Kaurareg canoe that 'had new outriggers and planks fastened on her' (1849 cited in Moore, 1979: 188).

Interestingly, all other references to canoe maintenance discuss caulking leaks in hulls from cracks and opened joins of attachments such as bow and stern boards. For example, Barbara Thompson explained to Brierly 'how hulls were repaired, by caulking with strips of tea-tree and mangrove bark, driven in with an ironbark chisel' (Moore, 1979: 284, see also Moore, 1979: 173). Mabuyag people used *biiu* ('a slimy paste made from the shoots of the mangrove') and possibly *kupa* (coconut husk fibres) to caulk canoes (Haddon, 1904: 73, 118, 1912: 210, 1935: 387; Ray, 1907: 201, 205-206).

DESTRUCTION

Canoes grow old and the timber weakens and becomes brittle and splits, thus rendering the canoe unusable. Little of this process is discussed in the Torres Strait literature, probably because it is obvious. Yet canoes can come to an end prematurely. Numerous old stories from the region speak of canoes capsizing in rough seas and storms (e.g. Haddon, 1935: 49, 53; Moore, 1979: 222). Brierly (1850 cited in Moore, 1979: 222) mentions a canoe that failed to get its sails down before a 'squall struck' and 'she turned right over, filled and went down'. In some case, canoes swamped by heavy seas were recovered (Kennett, 1867 cited in Moore, 1979: 243). In late 1871, a Tudu canoe capsized in a storm killing some of the crew. According to Frank Jardine (Somerset, Cape York), who reported the event, Tudu people attributed the capsizing to Poruma (Coconut Island) sorcery. A Tudu raiding party traveled to Poruma but was turned back by gunfire. On the return voyage, another group was intercepted and two people beheaded (story detailed in Mullins, 1995: 84; see also Fuary, 1991: 120). The role of sorcery in canoe mishaps was a constant concern (Haddon, 1935: 53, 169; Hunt, 1899: 8).

During the early years of contact between European mariners and Torres Strait Islanders in the late eighteenth and early nineteenth centuries, interactions were often violent and Europeans retaliated on a number of occasions by either destroying canoes with canon fire or burning large groups of canoes drawn up on the beach (Flinders, 1814, I: xxvi; McNiven, 2001). For example, in 1793, a group of men from the *Shah Hormuzear* and *Chesterfield* 'burnt and destroyed ... sixteen canoes, measuring from fifty to seventy feet in length' on Erub in revenge for killing an officer and four seamen (Flinders, 1814, I: xxxv; King, 1837b: 42, 88-89).

RECYCLING

In addition to recycling of large canoes into smaller canoes, and hull fragments used in the final canoe payment discussed above, fragments of old canoe hulls were re-carved into a broad range of new items, including canoe washboards on Dauan (Connor, 1873 cited in Moresby, 1875: 4), house doors on Mer (Haddon, 1912: 105, 1935: 300), house taboo markers on Mabuyag (Haddon, 1904: 270), corpse stretchers on Mer (Haddon, 1935: 323) and grave goods on Mabuyag (Haddon, 1904: 286). Examples of recycled canoe attachments include sections of gunwale carved and used in turtle ceremonies on Pulu by the people of Mabuyag (Haddon, 1935: 353; Moore, 1984: 148), platform and crates used as a support for the Waiat spirit figure on Dauar (Haddon, 1908: 277, 1935: Fig. 47), and a stern post carved into a tobacco charm on Dauan (Haddon, 1904: 346, 1908: 207). The fragmentation of Torres Strait canoes into ritual objects has been discussed by McNiven (2006b).

CANOE SIZE

Considerable metrical information is available on the size of Torres Strait canoes from the nineteenth century. This detailed information

reflects that European mariners were clearly impressed with the size of canoes and wished to convey canoe scale by taking a series of measurements. Most measurements simply record the length of canoe hulls but in some cases multiple dimensions were taken on single canoes.

MULTIPLE DIMENSIONS

Capt. Bligh in HMS *Providence* made the first recordings on the general size and dimensions of Torres Strait canoes at Ugar in the eastern Strait. He noted that 'Their canoes were 58 feet long, 3 feet wide, and 2 feet deep' (Bligh, 1792 cited in Lee, 1920: 180). Lt. Portlock who accompanied Bligh in HMS *Assistant* saw larger canoes:

'their canoes ... were from 60 to 70 feet long; about 2 feet 6 inches wide, and about the same depth ... They had an outrigger on each side, and over the body of the canoe was a stage projecting 3 or 4 feet past each gunwale and about 8 or 10 feet long. There was a kind of barricade on each side of this stage, about 2 feet high, and here they carried their spears and long bamboo poles for setting their canoes along the reefs' (Portlock, 1792 cited in Lee, 1920: 254).

In 1848-49, Oswald Brierly and John MacGillivray from the *Rattlesnake* expedition recorded general dimensions of various Kaurareg canoes. Brierly recorded the *Kie Marina* thus:

She is one of the largest canoes I have seen, measuring 52 feet [15.86 metres] overall with a stage 9 feet 3 inches [2.82 metres] in length, 8 feet 2 inches [2.5 metres] wide. This stage was placed well forward on the body of the canoe, the length of the forepart of the canoe in front of it being 17 feet 5 inches [5.3 metres], the after part 26 feet 7 inches [8.1 metres]. The double locker at the

sides took up 18 inches [45.7 cm] of the width of the stage. The proportion is about 34 per cent before and 2/3 aft of the stage, the stage being half the length of the part before it (1849 cited in Moore, 1979: 123).

Brierly (1849 cited in Moore, 1979: 126) added further dimensions of *Kie Marina*: '27 inches [68.5 cm] beam half way between front of stage (cotsie) and stern. 31 inches [78.7 cm] including the wash streak [strake] is the depth also at this part which is the widest and deepest part of the canoe. Entire length overall 52.2 [ft] [15.92 m]'.

MacGillivray recorded a similarly large canoe: 'one which I measured alongside the ship was forty-five feet long and three and a half in greatest width' (1852, II: 16). The dimensions of a small canoe were recorded also by Brierly: 'The present canoe was a short affair differently constructed from any I had seen. It was about 18 feet [5.5 m] long with as much beam as an ordinary ship's boat of the same length (five feet [1.5 m] at least) and a flat stern just like the sterns of the ducht [Dutch?] pulling boats on the Thames. It was very thin, lay flat upon the water with a round bottom and had a small stage about five feet [1.5 m] square in the centre with single side lockers and double' (1849 cited in Moore, 1979: 138-139).

Mabuyag

The most comprehensive measurements available for Torres Strait canoes were made by Alfred Haddon on two canoes at Mabuyag. The first canoe was recorded in 1888 thus:

15.24 m. (50 ft.) long; the hollowed trunk was 2.69 m. (8 ft. 6 in.) in circumference, with an opening 30 cm. (1 ft.) wide. The platform was 2.08 m. (6 ft. 10 in.) across and 2.21 m. (7 ft. 3 in.) long. The inner side of the platform crate was 30 cm. (1 ft.) in height, and the outermost 74 cm. (2 ft. 5 in.). The inner and outer receptacles

were respectively 165 mm. (6½ in.) and 89 mm. (3½ in.) wide. The thwart poles of the outrigger were 1.65 m. (5 ft. 5 in.) apart, and projected 3.78 m. (12 ft. 5 in.) beyond the gunwale, or 2.92 m. (9 ft. 5 in.) beyond the platform. The float was 3.66 m. (12 ft.) long' (Haddon, 1912: 210; see also Haddon, 1890a: 383).

Dimensions of the second canoe, named *Adi*, were recorded (probably in 1898) as follows:

total length of 13 m. (42 ft. 6 in.), at the centre the inside breadth of the hull is 46 cm (18 in.), but the average beam is from 61 to 71 cm., the central height is 115 cm. The gunwale is 76 mm. (3 in.) high, the higher forward portion is 13 cm. (the sudden angle which occurs when these two meet is called *ngur pagami*). The outriggers extend on each side to 3.55 m. (11 ft. 8 in.), the floats are 3.76m. (12 ft. 4 in.) long and 30 cm. (1 ft.) broad, the outrigger poles are 99 cm. (3 ft. 3 in.) apart, and the distance between them and the float is about 25 cm. The steering-board is 2.19 m. (7 ft. 2 in.) by 27 cm., and the centre-board is 2.64 m. (8 ft. 8 in.) by 63.5 cm.; both consist of simple plank straight, or nearly so, at one end and rounded off at the other (Haddon, 1912: 210).

Tudu

In 1888, Haddon made the following measurements of a canoe on the sandy cay of Tudu in the central Strait: 'One old canoe at Tudu was 20.65 m. (67 ft. 9 in.) long, the trunk was 107 [c]m. (3 ft. 6 in.) across in the widest part, and 79 cm. (2 ft. 7 in.) deep' (Haddon, 1912: 210; see also Haddon, 1890a: 383).

HULL LENGTH

Haddon (1937: 193) indicated that the length of hulls on Torres Strait canoes was '30 to 60 feet long, or occasionally longer'. Close

examination of records indicates that the range, taking in small and large canoes, is wider and between 5.5m (18 ft) and 21.3 m (70 ft). Various observers made general comments on the large size of Torres Strait canoes: 40 ft (12.2 m) (King, 1837a: 754), >45 ft (>13.7 m) (Connor, 1873 cited in Moresby, 1875: 4), ≥50 ft (15.2 m) (Bligh & Portlock, 1792 cited in Flinders, 1814, I: xxiii; Kennett, 1867 cited in Moore, 1979: 239) and 60 ft (18.3 m) (MacGillivray, 1852, II: 15; Moresby, 1876: 29). While these generalisations are borne out by length measurements of specific canoes, the range is wider with canoes up to 70 ft and over 21 m recorded (Table 2). A high degree of reliability is placed on these measurements given they were made mostly by master mariners who were highly skilled in vessel and distance measurement.

HULL WIDTH

All observers concur that the width of Torres Strait canoe hulls was around 1 m: 0.6-0.7 m (Haddon, 1912: 210), 0.9 m (Bligh, 1792 cited in Lee, 1920: 180) and 1.1 m (Haddon, 1890a: 383, 1912: 210; MacGillivray, 1852, II: 16). King (1837a: 754) commented that canoes are 'so narrow that the men cannot pass each other without crawling between their legs, in the bottom of the boat'.

HULL HEIGHT

Of the few measurements available for hull height, they range from 0.6 m (Bligh, 1792 cited in Lee, 1920: 180) to 1.2 m (Haddon, 1912: 210). Images of people standing either to the side or inside of canoe hulls reveals the top of the hull at groin level (Figures 8, 25, 26).

HULL THICKNESS

Remarkably, no recordings could be found for the thickness of wood along the sides and base of canoe hulls.

Table 2. Lengths of Torres Strait canoes.

Length (ft)	Length (m)	Location of Canoe	Canoe name	Year recorded	Reference
18	5.5	Muralag group		1849	Brierly (cited in Moore, 1979: 138)
25	7.6	Muralag group		1848	Brierly (cited in Moore, 1979: 28)
29	9.8	Muralag group		1848	Brierly (cited in Moore, 1979: 28)
35	10.7	Albany Is. (Pabaju)		1844-45	Sweatman (cited in Allen & Corris, 1977: 157)
42.5	13.0	Mabuyag		1898	Haddon (1912: 210)
45	13.7	Mt. Adolphus Is. (Muri)		1849	Brierly (cited in Moore, 1979: 96, 98)
45	13.7	Muralag group		1848-49	MacGillivray (1852, II: 16)
50	15.2	Murray Islands		1792	Bligh (cited in Lee, 1920: 175)
50	15.2	Erub		1793	Bampton & Alt (cited in Flinders, 1814, I: xxxv)
50	15.2	Mabuyag		1888	Haddon (1890a: 383, 1912: 210)
52.2	15.9	Muralag group	<i>Kie Marina</i>	1849	Brierly (cited in Moore, 1979: 126)
53	16.2	Mt. Adolphus Is. (Muri)		1849	Brierly (cited in Moore, 1979: 96, 98)
58	17.7	Ugar		1792	Bligh (cited in Lee, 1920: 180)
67.8	20.7	Tudu		1888	Haddon (1890a: 383, 1912: 210)
70	21.3	Erub		1793	Bampton & Alt (cited in Flinders, 1814, I: xxxv)
70	21.3			1844-45	Sweatman (cited in Allen & Corris, 1977: 35)

CANOE STRUCTURE

The dugout hull is only the foundation of a Torres Strait canoe. Attached to the hull are a range of structures that mark the distinctive and unique form of Torres Strait Islander canoes. These structures include elaborate boarding of the bow and stern, a gunwale, a central platform with storage crates, and double outriggers with floats. All of these attachments have specific terms (Table 3). Records of these terms as spoken by the two Indigenous languages of Torres Strait – Western-Central language (W-C hereafter) and Miriam Mir language (MM hereafter) – are incomplete in the literature.

The following section discusses each of these structural attachments with detailed images.

GUNWALE

Also referred to as the side washboards and washstrakes, gunwales are attachments to the top edge of the canoe hull that have the effect of raising the sides of the hull above the water surface. All detailed images of Torres Strait canoes show the presence of two gunwale boards, one on each side of the hull. Why Haddon (1937: 193) claims that 'A washstrake appears to have been absent from many of the canoes of the eastern islands of Erub and Mer and this is still the case', is not clear. Although

Table 3. Canoe structure terminology, western and eastern Torres Strait.

Item	Western-Central language	Miriam Mir language	Reference
Canoe	<i>gul</i>	<i>nar</i>	Haddon & Hornell (1937: 193)
Hull	<i>gar</i>	<i>gem</i>	Haddon & Hornell (1937: 193)
Bow	<i>buai</i>	<i>tarim</i>	Haddon (1912: 207)
Stern	<i>kun</i>	<i>kor</i>	Haddon (1912: 207)
Gunwale [washstrake]	<i>garbad</i>	-	Haddon & Hornell (1937: 193)
Gunwale (front end)	-	<i>bag</i>	Haddon (1912: 207)
Gunwale (upper edge)	-	<i>maumer</i>	Haddon (1912: 207)
Bamboo gunwale-hull joiner	<i>maumau</i>	<i>torob</i>	Haddon (1912: 207)
Bamboo gunwale-hull joiner string	<i>uru</i>	<i>ked</i>	Haddon (1912: 207)
Gunwale-hull joiner holes	<i>tira</i>	<i>neb</i>	Haddon (1912: 207)
Weather-board (added to gunwales at bow)	<i>sabi</i>	<i>werem sab</i>	Haddon & Hornell (1937: 193)
Weather-board rod (protruding ends to attach anchor rope)	<i>gudagub</i>	-	Haddon & Hornell (1937: 193)
Weather-board front deck cover	<i>awar</i>	<i>lak sop</i>	Haddon & Hornell (1937: 193)
Weather-board front deck cover cross-bar support	<i>gub</i>	<i>gob</i>	Haddon (1912: 207)
Vertical flat end-board (bow)			
[bow washboard]	<i>gab</i>	<i>garbad</i>	Haddon & Hornell (1937: 193)
Vertical flat end-board (stern)			
[stern washboard]	<i>kuna gab</i>	<i>kor garbad</i>	Haddon (1912: 207)
Platform	<i>natar</i>	<i>tam</i>	Haddon & Hornell (1937: 193)
Platform bamboo decking	<i>iabu puil</i>	-	Haddon (1912: 208)
Platform crates	<i>kusil</i>	<i>sal</i>	Haddon & Hornell (1937: 194)
Platform crate inner sticks	<i>kuiku saail</i>	-	Haddon (1912: 208)
Platform crate outer sticks	<i>saail</i>	-	Haddon (1912: 208)
Platform crate (inner)	<i>aingu tamul</i>	-	Haddon (1912: 208)
Platform crate (inner front)	<i>buai tamul</i>	-	Haddon (1912: 208)
Platform crate (inner middle)	<i>dada tamul</i>	-	Haddon (1912: 208)
Platform crate (inner rear)	<i>kuna tamul</i>	-	Haddon (1912: 208)
Platform crate (outer)	<i>watarau tamul</i>	-	Haddon (1912: 208)
Platform crate outer angled projecting sticks to support punting poles	<i>adaka saail</i>	-	Haddon (1912: 208)
Platform fireplace	<i>mui kun</i>	<i>ur memeg</i>	Haddon (1912: 208)
Platform shelter	<i>mud moder</i>	-	Haddon (1912: 208)

Item	Western-Central language	Miriam Mir language	Reference
Outrigger booms	<i>tug</i>	<i>tug</i>	Haddon (1912: 207), Haddon & Hornell (1937: 193)
Outrigger booms (front)	<i>buai tug</i>	<i>tarim tug</i>	Haddon (1912: 208)
Outrigger booms (rear)	<i>kuna tug</i>	<i>kor tug</i>	Haddon (1912: 208)
Outrigger float	<i>saima</i>	<i>sirib</i>	Haddon & Hornell (1937: 194)
Outrigger float attachment sticks	<i>saiu pat</i>	<i>kag</i>	Haddon & Hornell (1937: 194)
Pair of cross-ties hull support	<i>dami/doam</i>	<i>zirim</i>	Haddon & Hornell (1937: 193)
Lee-board	<i>walunga</i>	-	Haddon & Hornell (1937: 197)

gunwales were attached to hulls coming out of New Guinea, they were inadequate for open sea travel and were replaced, at least on the western trade route, on Saibai by 'a more seaworthy one' (Haddon, 1888: 98, 1912: 207). Wood for the long strips of planking required for gunwales could be 'cut out from the sides of old canoes' or salvaged from European shipwrecks (Brierly, 1849 in Moore, 1979: 150; Connor, 1873 in Moresby, 1875: 4). Haddon (1912: 207) notes that the gunwale board was 'about 101 mm. (4 in.) in height', adding that it is '76 mm. (3 in.) high, the higher forward portion is 13 cm.' (Haddon, 1912: 210; see also Haddon, 1890a: 381). The most detailed account of attaching the gunwale to the canoe hull is provided by Connor (1873 in Moresby, 1875: 4) based on observations on Dauan: 'the edges of the canoe and washboard are trimmed nicely. Holes are cut in each at about 3 inches interval, and a lashing made of plaited coconut fibre is rove. Along the joint they place a strip of split bamboo. By knocking this, round which the lashing is passed, they get a good purchase in the spring of the bamboo, as the lashing is hauled taut during the knocking' (see also Haddon, 1890a: 381; Moresby, 1876: 133). Use of coconut fibre lashing with pegs is also documented (Bligh & Portlock, 1792 cited in Flinders, 1814, I: xxiii; King, 1837a: 754). The form of attachment of gunwales is illustrated well in Figures 10, 14 and 16.

BOW & STERN WASHBOARDS

The bow and stern of the canoe have flat boards inserted vertically and perpendicular to the long axis of the canoe (Figures 33, 39, 40). Also referred to as 'end-boards' (Haddon, 1890a: 381, 1912: 207) and 'breakwaters' (Haddon, 1937: 193), washboards limit in-wash of water. Addition of the stern washboard is critical given that the rear of the canoe hull is cut square and open. The most detailed account of attaching washboards comes from Dauan: 'The head and stern washboards are joined by a shield-shaped piece of wood, and the joint is caulked by the inside bark of the mangrove, beaten up with a little water. The lashing goes over this, and as it soon hardens, the whole is quite watertight' (Connor, 1873 in Moresby, 1875: 4).

BOW WEATHERBOARD

A box-like structure is usually added to the bow above the gunwale and behind the washboard (Figure 41). The triangular-shaped weatherboards are attached to the top of the gunwale in similar fashion to the technique of attaching the gunwale to the top of the hull. Furthermore: 'The front part of the sabi [weatherboard] has a small deck-covering, *awar* (lak sop), which is supported by a cross-bar, *gub* (gob). A hole is bored in each sabi through which a stout stick is passed, that end which projects on the starboard side is called *gudagub*

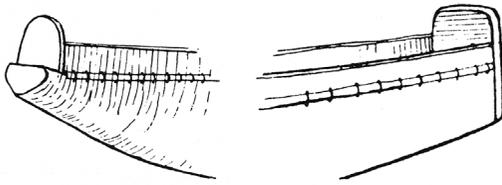


FIG. 40. Washboards – bow (left), stern (right) (after Haddon, 1937: Fig. 120A, B).

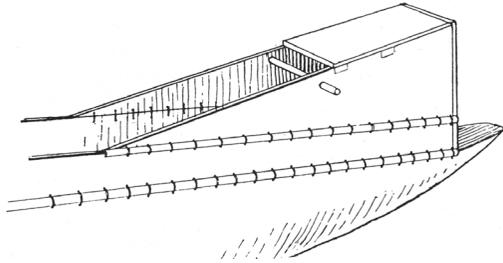


FIG. 41. Weatherboard at bow of canoe (after Haddon, 1937: Fig. 120C).

and serves for the attachment of the anchor rope' (Haddon, 1912: 207, see also Haddon, 1914: 632, 1937: 193).

PLATFORM

One of the more distinctive features of a Torres Strait canoe is the central platform or stage upon which people sat, cooked food and slept. These platforms are shown clearly on all classic images of Torres Strait canoes (Figures 4-35). Two of Brierly's sketches provide insights into the form of canoe platforms (Figures 42-43). The size of platforms was measured variously at 2.4-3.0 m long (measured perpendicular to long axis of canoe) (Portlock, 1792 cited in Lee, 1920: 254), 1.4 m wide (Brierly – Figure 42), and 2.2 m long x 2.1 m wide (Haddon, 1912:

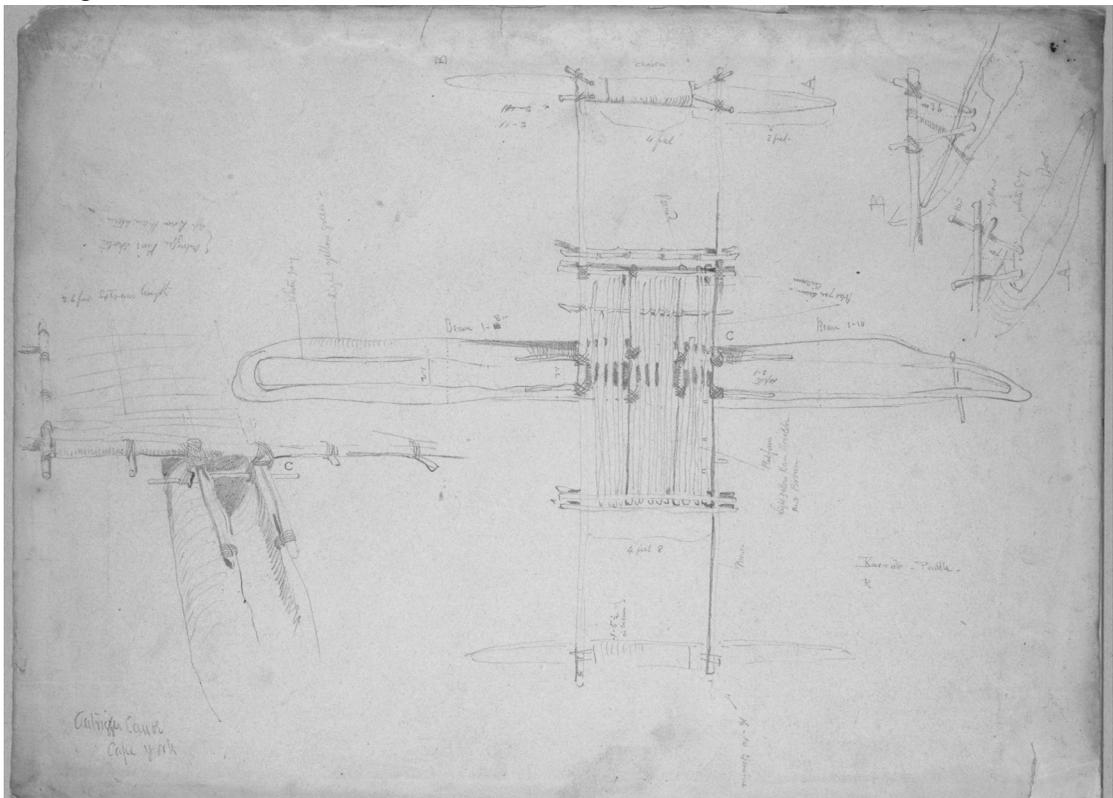


FIG. 42. Pencil sketch plan view of a canoe from southwest Torres Strait by Oswald Brierly, 1848-49 (Courtesy: Mitchell Library, State Library of NSW, PX*D 81). This image is the only known plan view of a Torres Strait canoe and also provides a rare detailed view of the process of outrigger boom attachment to the gunwale (lower left).

210). These measurements appear to represent the open area in between the storage crates located on the sides of the platform beyond the hull and over the water (see below). Including the area of storage crates, the total length of a platform could be 3-4 m given that platforms were recorded as projecting 'a foot or two' (0.3-0.6 m) (Haddon, 1937: 193), 'about two feet' (0.6 m) (Rutherford, 1834: 195) and '3 or 4 feet' (0.9-1.2 m) (Portlock, 1792 cited in Lee, 1920: 254) beyond each gunwale. Platforms were 'made of lengths of bamboo, *iabu puil*, which run transversely to the length of the canoe' (Haddon, 1912: 208; see also Haddon, 1890a: 382). These lengths of bamboo are attached to the top of the two large bamboo boom poles running across the top of the hull (Haddon, 1914: 610). Woven mats often covered the open area of the platform (Brierly, 1849 in Moore, 1979: 121, 139, 189, 280; Rutherford, 1834: 195).

CRATES

Storage crates made with narrow wooden uprights and sides filled in with long sticks spaced apart were located along the sides of the central platform. The openness of the construction is revealed by descriptions of the cages as 'netting' (Sweatman, 1844-45 in Allen & Corris, 1977: 35), 'wattled work' (Brierly, 1849 cited in Moore, 1979: 93), 'wicker cages' (Connor, 1873 in Moresby, 1875: 4) and 'wattled basket' (Haddon, 1890a: 382). Small canoes tended to have one crate on each side of the platform (Figures 39, 42) while large canoes typically had double crates on each side of the platform (Figures 10-12, 14, 16, 24-29 and 43-44). A detailed drawing of the structure of double crates was executed by Brierly in 1849 (Figure 44). Details of the method of attaching crates to the platform and outrigger boom are seen

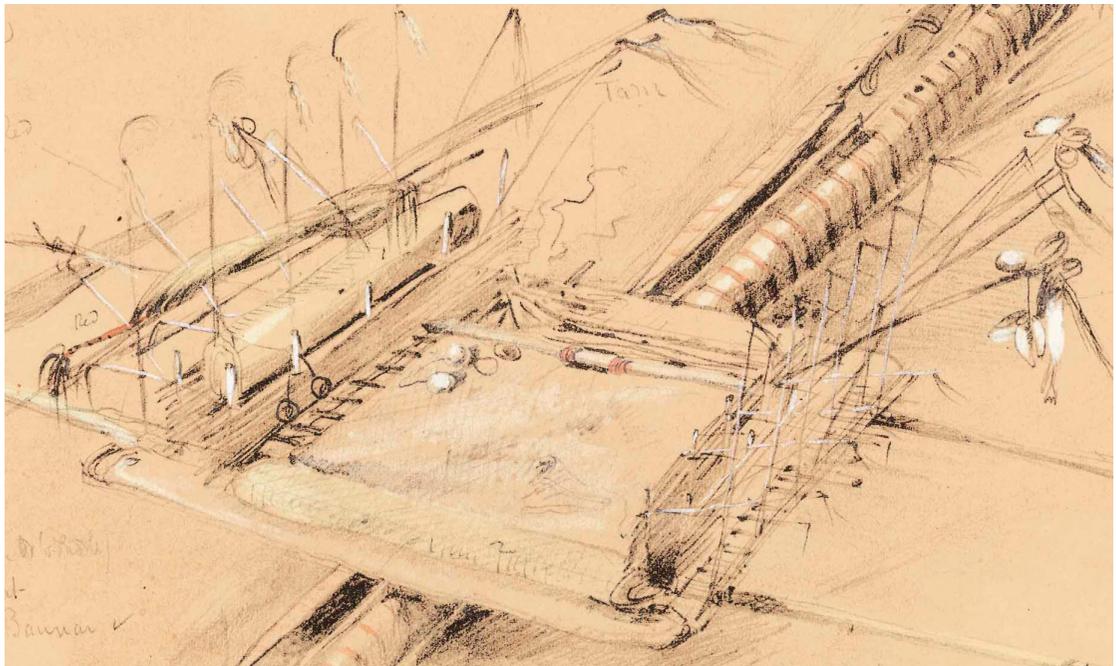


FIG. 43. Detail of platform from large canoe from Ugar (see Fig. 12). Sketched and painted by Oswald Brierly on 10 December 1849 (Courtesy: Mitchell Library, State Library of NSW, PX*D 82). Note fireplace in top left corner of platform and paired coconut shell water bottle lying on platform and hanging on crate post next to a rolled-up woven mat stowed in the crate.

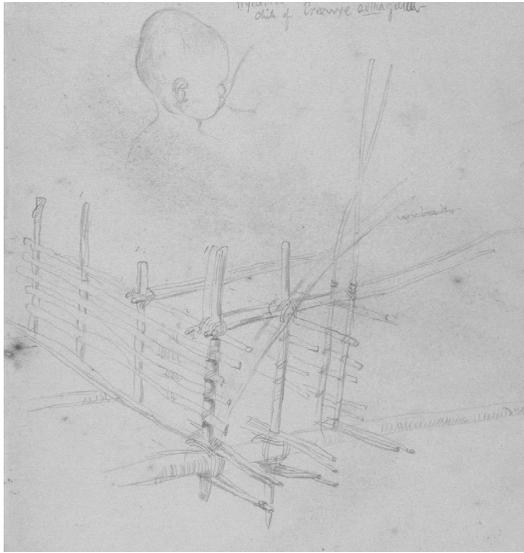


FIG. 44. Detail of a pencil sketch of a double storage crate from one side of a canoe, southwest Torres Strait, by Oswald Brierly, 1849 (Courtesy: Mitchell Library, State Library of NSW, PXA 510).

in the 1860s canoe model in the British Museum (Figure 45). Haddon (1912: 208, see also Haddon, 1890a: 382) provides a detailed description of the crates and the associated system of gear/food storage:

Each side of the platform is bounded by a peculiar kind of crate or watted basket, *kusil* (sal [in MM]), built on to the platform. It consists of two rows of short vertical sticks, the front ones are called *kuiku saiil*, and an outermost row of long ones, *saiil*, occasionally 1.22–1.52 m. (4–5 ft.) in height (usually they run much shorter now than formerly). Long sticks are woven between the uprights, and the ends are also enclosed. Thus two long narrow receptacles are formed along the outer edge of each side of the platform: the outer one, *watarau tamul*, is the firewood compartment as its name implies; the inner one is divided by partitions into three compartments, *aingu tamul*, ‘food



FIG. 45. Detail of the underside of the crate on the starboard side of the 1860s canoe model in the British Museum (Courtesy: British Museum, Oc.6933.a © The Trustees of the British Museum).

compartments’: the front one, *buai tamul*, is where the ‘mate’, *buai-garka*, keeps his food, the middle, *dada tamul*, and the hindmost, *kuna tamul*, contain the food of the crew. The ‘captain’ keeps his food in the stern of the canoe. Bows and arrows were frequently kept in readiness by being placed on the *kusil*. Projecting obliquely upwards and outwards from the ends of the crates are two sticks, *adaka saiil*, which support the bamboo poles, *suru* (imut [in MM]), which are used for punting the canoe when on the reef or in shallow water, they are thus stored out of the way of the crew.

The range of items stored in crates was varied. Most relate to fishing gear (e.g. tackle and spears), canoe movement (e.g. punting poles and paddles), fire making (e.g. firewood) and sustenance for voyaging (e.g. water bottles and food) (Table 4).

Table 4. Items stored in canoe crates.

Item	Comments	Reference
'spears'		Portlock (1792 cited in Lee, 1920: 254); Kennett (1867 cited in Moore, 1979: 239-240); Connor (1873 in Moresby, 1875: 4)
'short fish spears'		Brierly (1848 cited Moore, 1979: 56)
'fishing lines'	'hung on pegs'	Brierly (1848 cited Moore, 1979: 56)
'fishing gear/ 'fishing tackle'		Sweatman (1844-45 cited in Allen & Corris 1977: 35); Kennett (1867 cited in Moore, 1979: 239-240) Haddon (1890a: 382)
'long bamboo poles'	'for setting their canoes along the reefs'	Portlock (1792 cited in Lee, 1920: 254)
'bamboo poles'	used for 'punting'	Haddon (1912: 208)
paddles	Sketch shows paddles in crate	Brierly (sketch dated 28 Nov 1849 in Mitchell Library)
'bows and arrows'		Haddon (1890a: 382)
'men's bags'		Brierly (1849 cited in Moore, 1979: 93)
' <i>marappis</i> '	'bamboo containers, pipes'	Brierly (1849 cited in Moore, 1979: 93)
'firewood'		Brierly (1848 cited Moore, 1979: 56) Haddon (1912: 208)
'old meat cans'		Brierly (1848 cited Moore, 1979: 56)
'bottles'		Brierly (1848 cited Moore, 1979: 56)
'water-bottles'	paired coconut containers	Haddon (1890a: 382) (see Fig. 43)
' <i>liee</i> '	'baskets'	Brierly (1848 cited Moore, 1979: 56)
'cordage'	(e.g. Figure 23)	Haddon (1912: 208)
'turtle flesh'	attached to 'sharpened pegs'	Brierly (1849 cited in Moore, 1979: 93)
'food'		Haddon (1912: 208, 1937: 194)
woven mat	rolled up	Brierly (sketch dated 1849) (see Figure 43)
flags	Poles with tassels	Brierly (sketch dated 1849) (see Figure 43)

FIREPLACES

Fireplaces were recorded on platforms of canoes across various parts of Torres Strait and were known as *mui kun* (W-C) and *ur memeg* (MM) (Haddon, 1912: 208) (Figure 43). Comments such as canoes ‘invariably carried a fire’ (Brierly, 1848-49 cited in Moore, 1979: 239) and ‘there is generally a central fireplace’ on the platform (Haddon, 1937: 194) indicate that canoe fireplaces were common. To avoid burning the platform, fireplaces were set up on ‘a mass of damp bark or leaves’ (Brierly, 1848 cited in Moore, 1979: 45), a ‘piece of bark ... with sand’ (Brierly, 1849 cited Moore, 1979: 56, 112), or on ‘earth’ (Sweatman, 1844-45 cited in Allen & Corris, 1977: 35). Haddon (1912: 120-121) also reported use of an elaborate portable fireplace in the eastern Strait: ‘The ashes of the fire may be prevented from scattering by a framework of four low boards, a moveable fireplace of this kind with a wooden bottom, *ur memeg* [MM], is taken on board a canoe when going on a long journey’. Fires were ignited using a ‘fire brand’/‘glowing stick’ that was carefully curated and which could ‘be blown into a flame when required to ignite a fire’ (Haddon, 1890a: 385, 1912: 122). Canoe fireplaces were used to cook food such as fish (Brierly, 1849 cited in Moore, 1979: 112; Haddon, 1890a: 311, 1912: 131). Haddon (1935: 70) was informed that one method of killing turtles used by men from Nagher in the central Strait when out turtle hunting was to insert stones heated from a canoe fireplace into a turtle’s mouth when it surfaced to breathe. In this connection, Lawrie (1970: 195) records a rare instance of a turtle being butchered on a canoe from Saibai.

SHELTER

On occasion, shelters were erected above canoe platforms. These no doubt helped protect crews from the elements while

moored and when sleeping (Brierly, 1848-49 cited in Moore, 1979: 190; Haddon, 1904: 76, 315). Shelters usually consisted of a woven mat supported by poles (Bligh & Portlock, 1792 cited in Flinders, 1814, I: xxi, xxiii; Brierly, 1849 cited in Moore, 1979: 75, 280; Haddon, 1914: 610, 1937: 194) and were referred to as *mud moder* (under mat) in the western Strait (Haddon, 1912: 208) (Figures 46-47). The shelters could be substantial, as indicated by Bligh (1792 cited in Lee, 1920: 176) who observed ‘a man who was sitting upon the top of a house in the centre of the canoe’.

OUTRIGGER BOOMS

All recorded observations of Torres Strait canoes from the late eighteenth through to the mid-nineteenth centuries concur on the use of double outriggers. Two outrigger booms extended from each side of the canoe upon which was attached a float (see next section). Outrigger booms were made from bamboo due to its strong and flexible properties. Early observers recorded a range of distances at which boom poles were spaced apart: ‘about four feet [1.2 m]’ (Brierly, 1848 cited in Moore, 1979: 28), ‘about five feet apart [1.5 m]’ (Connor, 1873 in Moresby, 1875: 4) and ‘about six feet [1.8 m]’ (Rutherford, 1834: 195; Sweatman, 1844-45 cited in Allen & Corris, 1977: 35). Haddon (1912: 207-208) provides the most detailed available account on the arrangement of booms:

Four bamboo poles, 3.66–4.57 m. (12-15 ft.) long, constitute the thwart poles, *tug* (*tug* [MM]), of the outrigger, and at the same time form the framework of the platform. Two of the poles, from about 1.07 m. (3 ft. 6 in.) to about 1.83 m. (6 ft.) apart, project a foot or two on one side of the canoe and stretch out some 3.05–3.66 m. (10–12 ft.) on the other, and the other two are similarly placed on



FIG. 46. Canoe named *Bruan* from Muralag at anchor in Evans Bay (Cape York). Note temporary woven mat half-shelter erected above the central platform and fireplace with smoke. Pencil sketch and painting by Oswald Brierly, 31 October 1849 (Courtesy: Mitchell Library, State Library of NSW, PX*D 82).

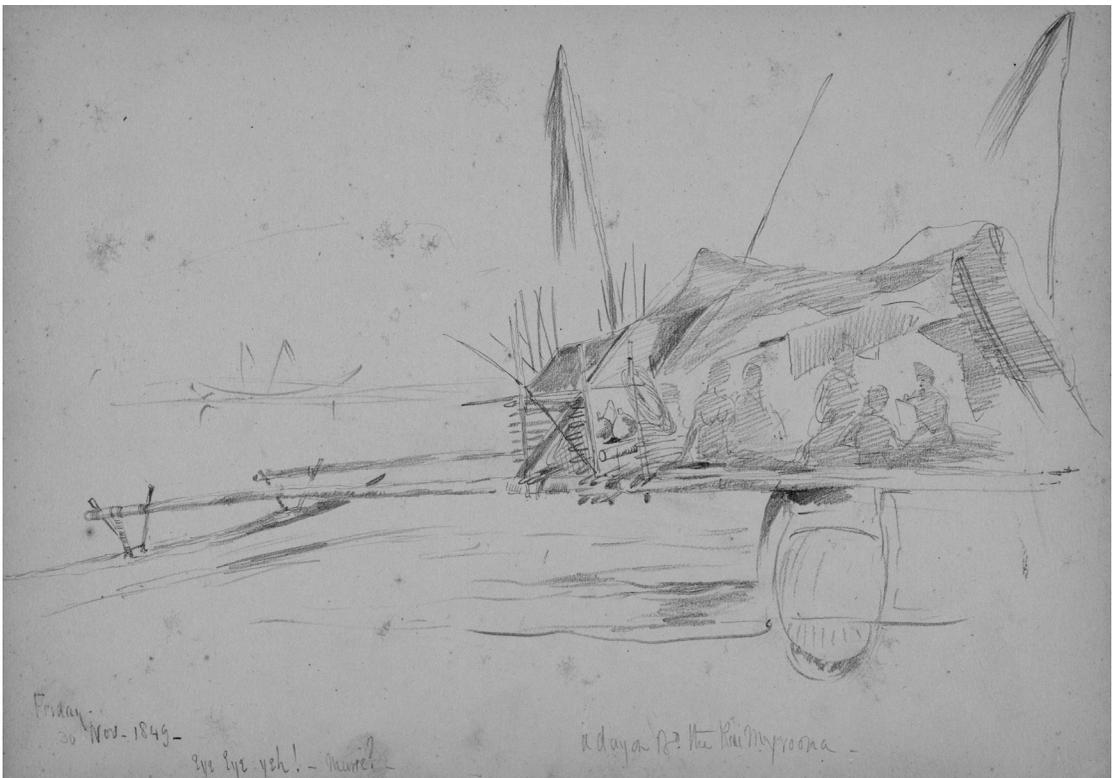


FIG. 47. Canoe named *Kie Marina* at anchor with a temporary woven mat full-shelter erected above the central platform. Pencil sketch by Oswald Brierly 1848-49 (Courtesy: Mitchell Library, State Library of NSW, PXA510). Brierly has drawn himself under the shelter drawing/taking notes. Published in Moore (1979: Pl. 7).

the opposite side; the front poles are called *buai tug* (*tarim tug* [MM]) and those behind *kuna tug* (*kor tug* [MM]) (see also Haddon, 1890a: 382, 1914: 609, 1937: 193).

Few details are available on how boom poles were attached to the canoe hull. However, classic canoe images, particularly Brierly's detailed drawings, provide unique insights into the attachment process. It is clear that the booms were attached to the top of the gunwale (Figures 10-12, 14, 16, 19, 24-27, 29, 32 and 35). The boom was fixed in place with fibre cordage wrapped around the boom pole and then attached to a cross-spare extending through the lower sections of both the portside and starboard gunwales (see Figures 42, 45, 48). Wooden braces or cross-ties were fixed into place under the cross-spare to provide added strength to support the platform (Figures 48-49). Known as *dami* or *doam* (W-C) and *zirim* (MM), these 'cross-ties' also increased the structural strength of the middle of the canoe and kept the hull 'more open' (Haddon, 1890a: 382, 1912: 208, 1937: 193).

OUTRIGGER FLOATS

At the ends of outrigger booms were suspended two long narrow floats, one on each side of the canoe. Each float helped prevent 'the narrow vessel from capsizing and also adds a good deal to its buoyancy' (Sweatman, 1844-45 cited in Allen & Corris, 1977: 35). Floats were known as *saima* (W-C) and *sirib* (MM) (Haddon, 1937: 194), with Brierly recording the term *sarreem* amongst the Kaurereg of the southwest Strait (cited in Moore, 1979: 98). Haddon (1912: 208) recorded that floats were 'about 2.44-3.66 m. (8-12 ft.) long' and 'made of the light wood of the *pasei* tree'. On Naghir, Seligmann (1898: 70) observed 'Casuarina trees along shore - used especially for canoe outriggers'.

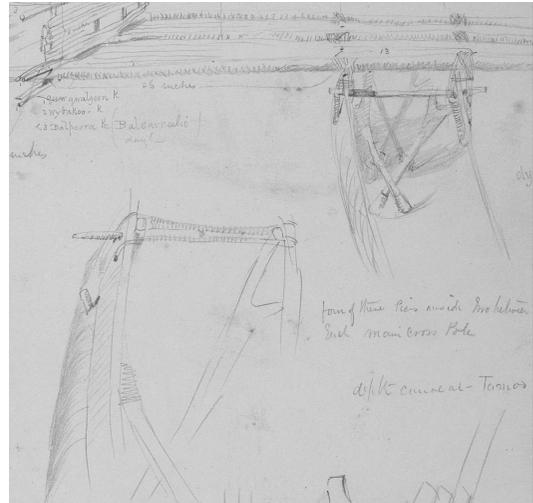


FIG. 48. Detail of boom attachment process on a 'small canoe', southwest Torres Strait. Pencil sketch by Oswald Brierly, 28 November 1849 (Courtesy: Mitchell Library, State Library of NSW, PXA 510).

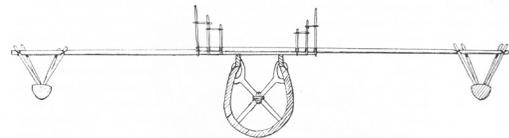


FIG. 49. Diagram of canoe cross-section showing relative position of hull, platform, crates, outrigger booms and floats (after Haddon, 1937: Fig. 116a).

On the adjacent Kiwai coast, canoe outrigger floats are made from mangrove wood (David Lawrence, pers. comm., 2011). Both ends of the float are typically pointed and turned up and the point where attachment sticks are embedded into the float is raised to add structural strength (Haddon, 1890a: 382, 1937: 194). The form of floats is illustrated well in Figures 10-14, 17, 19, 39). The float is connected to the boom by special attachment sticks known as *saiu pat* (W-C) and *kag* (MM) (Haddon, 1937: 194). On Mer in the eastern Strait, *kag* sticks are made from the *kus* tree (Haddon, 1935: 139). In 1848, Brierly observed that attachment sticks were of

such a length to 'allow the outrigger just to rest on the water on each side when the canoe was full' (cited in Moore, 1979: 28). However, 'When the canoes were empty these outriggers would not come sufficiently low to touch the water if the canoe was on an even keel but they generally canted a little so that if one rested on the water the other was raised above it' (Brierly, 1848 cited in Moore, 1979: 28) (Figure 49).

Two different techniques were used to attach floats to booms. First, each boom end is attached to the float by a pair of sticks usually with the addition of a fibre rope support. This technique is well documented in illustrated canoes from the eastern Strait (Figures 11-12, 14), central Strait (Figures 6, 39) and southwestern Strait (Figures 10, 13, 42, 46-47). Second, the end of each boom is attached to the float using two pairs of sticks (Figure 50). While this was the main attachment technique described by Haddon (1890a: 382, 1912: 208, 1914: 610, 1935: 306, 1937: 194), it is seen only on canoes from Mabuyag (Figures 20, 26-32, 35). While it is possible this difference reflects traditional sub-regional stylistic variations across the Strait, it is also possible Mabuyag canoe technology had undergone a number of post-contact changes resulting from the influx of South Sea Islanders associated with the pearlshell industry (see below).

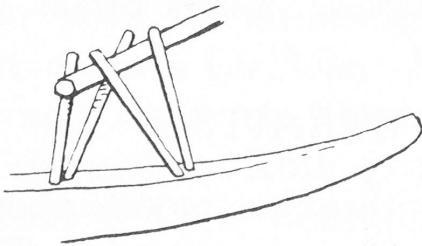


FIG. 50. Two-paired stick technique to attach float to outrigger boom (after Haddon, 1937: Fig. 116b, 2).

CANOE APPARATUS

SAILING

The rigging and operation of traditional sails and masts is one of the most complex and least understood dimensions of Torres Strait canoes. Most information comes from Haddon's observations on Mabuyag in 1888. The paucity of information reflects technological change and the introduction of cloth sails and a lugger rigging setup during the pearling era after 1870. Haddon (1912: 212) stated: 'in 1888 I believe there were only one or two canoes with mat sails among the Western Islanders and none either in the Murray Islands or Erub, and in 1898 none existed in Torres Straits'.

Sails and masts

While the earliest European images of canoes from 1792 show canoes in full sail with the characteristic double bow sail arrangement (Figures 4-5), most nineteenth century illustrations show canoes without sails. It is clear that sails and masts were detachable and could be erected and dismantled when required. Bligh (1792 cited in Lee, 1920: 185) provides the earliest European description of Torres Strait canoe sails based on observations near Tudu:

The sails of their canoes are made of matting in an oblong form rudely stitched together. The mast to which it is hoisted consists of 2 bamboo poles, the lower ends fixed close together in the bottom of the canoes and the upper ends extended the width of the sail, from whence it is hoisted traveling upon two guys. Some canoes have two sails. They are always fixed together in the fore-part of the canoe. We observe them always row well to the windward

before they set their sail, and I think they have a piece of plank which they sometimes use as a lee-board.

In the 1830s, King (1837a: 754) recorded that 'These mats, called *soo soo*, are made of the young leaves of the cocoa-nut [pandanus] split into shreds; the sails of the canoes are made of the same material'. On Warraber in the central Strait in December 1849, MacGillivray recorded people sitting in the shade 'under temporary sheds made by stretching large mats – the sails of canoes – over a framework of sticks' (1852, II: 41). 'The large mats used as sails are made by the women from the fallen leaves of the pandanus' (MacGillivray, 1852, II: 20; see also Brierly, 1849 cited in Moore, 1979: 33). Also in 1849, Brierly observed that masts of Kaurareg canoes were set up in the bow of the canoe, resting on the canoe base and held in place with little support apart from the rigging (Moore, 1979: 110-111). On Dauan and Saibai in the northern Strait, canoes were observed with 'two mat-sails' on 'shifting poles' (Moresby, 1876: 134).

The pandanus mat sails are 'two in number, and are oblong erections of matting some twelve feet [3.7 m] in height and about five feet [1.5 m] wide. They are placed in the bows. The mats are skewered on to two long bamboos, which support them along their length; a bamboo stay also serves to keep the sail upright' (Haddon, 1890a: 382; see also Haddon, 1912: 65). Brierly (1848, cited in Moore, 1979: 30) recorded a canoe sail at Evans Bay that was 'about 15 feet [4.6 metres] long by 3½ broad [1.0 metre]'. When not in use on a canoe, the sails were rolled-up and stored either in crates on the sides of the platform (Figure 43) or in the bottom of the hull (Haddon, 1904: 92; Moore, 1979: 28). The complex rigging arrangement for sails, masts, boom poles and rigging ropes is described in detail by Haddon (1912: 209-210, 212-213, 1937: 196-197) (for further details see: Portlock, 1792

cited in Lee, 1920: 254; Flinders, 1814, II: 109-111; MacGillivray, 1852, II: 17, 20; Sweatman, 1848-49 in Allen and Corris, 1977: 35).

STEERING

Steering and manoeuvring of canoes was achieved using sails, a rudder, a centreboard, paddles and punting poles. As with other structural features of canoes (e.g. hull, platform), no examples of rudders, centreboards or punting poles are known to occur in museums.

Rudder

Haddon (1890a: 382) observed in 1888 that a 'large flat board is used as a rudder at the stern on the windward side when sailing' (see also Haddon, 1912: 208). Rudder is known as *kuli* (W-C) and *kor user* (MM) (Haddon, 1912: 208, 1937: 196). During the first half of the twentieth century, Rev. Done observed that 'steering is accomplished with a hewn out plank eight to ten feet long, and a foot or more in width. This steering paddle, as it is called, is held in position at the windward side of the canoe by a loosely fastened pole.' (Done, 1987: 41). Gunnar Landtman took photographs of Kiwai men using large plank rudders on outrigger canoes in 1910-12 (Landtman, 1927: Figure 75; Lahdentausta *et al.*, 2001: 16).

Centreboard

A 'lee-board' or 'centre-board' (*walunga* in W-C), attached to the side of the starboard bow with a horizontal length of bamboo 'lashed' to the hull side, is employed while sailing (Haddon, 1937: 197; see also Haddon, 1904: 20, 1912: 210). During the first half of the twentieth century, Rev. Done (1987: 41) observed that 'In beating against the wind a second plank [in addition to the steering paddle] is thrust down between the outriggers to act as a centre board'.

Paddles

Numerous images of Torres Strait canoes show men paddling (e.g. Figures 5, 7, 13, 22) or holding paddles in beached canoes (e.g. Figures 8, 24-25, 35). Torres Strait paddles were known as *kaba* (W-C) and *uzer* (MM) (Figure 51). Basic in form, they were made from *pasei* wood with an ovoid-shaped blade and a length of around 5-6 ft (1.5-1.9 m) (Bligh, 1792 cited in Lee, 1920: 181; Haddon, 1890a: 382, 1937: 196, 1912: 208; MacGillivray, 1852, II: 16; Portlock, 1792 cited in Lee, 1920: 255). Haddon (1912: 208; see also Haddon, 1890a: 382) noted that paddles were ‘without any ornamentation, except in some cases a simple beading at the end of the handle’ (Figure 51). However, the paddle he collected in 1888 has ‘traces of yellow decoration’ according to Moore (1979: 99). When not in use, paddles could be stored in the platform crates or in the bottom of the canoe hull (Brierly, 1848 cited in Moore, 1979: 28; Table 4).

Punting poles

Torres Strait canoes were often moved around in shallow water with the aid of bamboo punting poles known as *suru* (W-C) and *imut* (MM) (Haddon, 1937: 196; see also Brierly, 1849 cited in Moore, 1979: 125). The poles were tied to the sides of the canoe when not in use (Haddon, 1890a: 382).



FIG. 51. Paddle from Torres Strait collected by Alfred Haddon in 1888 (Courtesy: British Museum, 89+190 © The Trustees of the British Museum). Length 157 cm (Moore, 1984: 645, Pl. 77). This item is the only known nineteenth century Torres Strait paddle in a museum.

EQUIPMENT

A range of small items such as ropes, anchors and balers were part of the operating equipment on canoes.

Ropes

Ropes were used primarily for rigging of sails. They were made from ‘twisted climbers – often the *Flagellaria indica*’ (MacGillivray, 1852, II: 16) and ‘the stem of the Queensland bean, *Entada scandens*, *sirip* [W-C] or *sireb* [MM], is used for canoe cables as it is particularly strong’ (Haddon, 1908: 47, 1912: 89, 208; see also Moore, 1984: 66). On Iama and Saibai, ‘rushes, *gai* (a sp. of *Juncus*), are dried in the sun and twisted into rough ropes which are used for canoe lashings’ (Haddon, 1912: 89).

Anchor

In 1793, Lt. Portlock observed that ‘When they had got to within 100 yards of her they brought to anchor with a stone or something else fastened to a rope that rode them very well considering the strength of the tide’ (cited in Lee, 1920: 275). In 1848-49, MacGillivray recorded that ‘a large stone serves for an anchor’ (1852, II: 16). Haddon (1890a: 382) noted that ‘The anchor is a large stone attached to a hawser and kept in the bow’. The anchor is a ‘flat oblong perforated stone’ according to Haddon (1912: 208). They are known as *iadi* (W-C) and *par* (MM) (Haddon, 1937: 196).

Baler

The most often cited Torres Strait canoe balers are those made from large baler shells (*Melo* spp.) (Brierly, 1848 cited in Moore, 1979: 28; Haddon, 1937: 196, 1912: 208-209, 1937: 196; MacGillivray, 1852, II: 17; Portlock, 1792 cited in Lee, 1920: 255). They are known as *alup* (W-C) and *ezer* (MM) (Haddon, 1912: 208). An alternative baler was made from

the spathe of a coconut palm leaf known as *geru* (W-C) and *Kuapi* (MM) (Haddon, 1912: 208, Fig. 208, 1937: 196; Moore, 1984: 66; Ray, 1907: 143).

CANOE ADORNMENT – BOW

Torres Strait canoes were renowned for their elaborate ornamentation. Following his visit to Torres Strait in 1888, Haddon wrote: ‘The large canoes of the Torres Straits Islanders of former times must have been very imposing objects when painted with red, white, and black, and decorated with white shells, black feathers, and flying streamers’ (1890a:

381, see also Haddon, 1912: 205). As early as 1793, Capt. Bampton observed that some Torres Strait canoes ‘were ingeniously carved and painted, and had curious figures at each end’ (Bampton, 1793 cited in Flinders, 1814, I: xxxvi). During the HMS *Fly* expedition of 1844-45, Sweatman noted that ‘The bow is highly ornamented with carving, paint, shells and emu feathers, being often fashioned into a rude resemblance of a human head. Rows of shells, cowries & bullee [bubble shell], are also fastened along the sides of the canoe’ (cited in Allen & Corris, 1977: 35). Brierly and Haddon provide detailed drawings and photographs of adorned canoe bows (Figures 52-56).

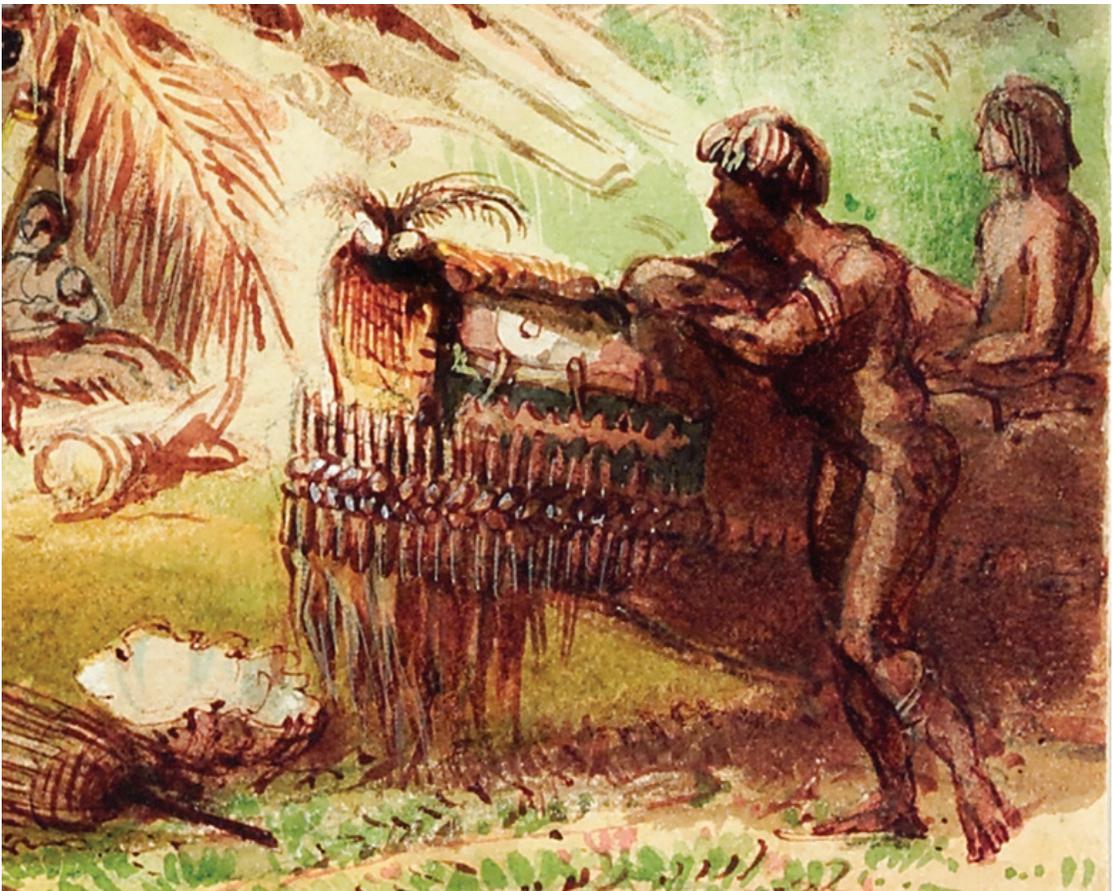


FIG. 52. Detail of a canoe bow taken from a village scene, Treacherous Bay, Erub. Watercolour by Edwin Porcher, April 1845, HMS *Fly* expedition (Courtesy: National Library of Australia, nla.pic-an 4101896).

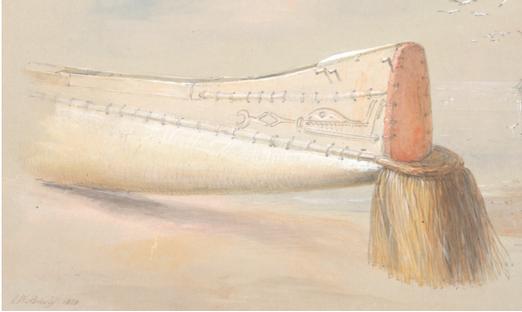


FIG. 53. Detail of the bow of *Bruwan*, a Kaurereg canoe from Muralag. Pencil sketch and watercolour by Oswald Brierly, 1850. (Courtesy: Mitchell Library, State Library of NSW, PXC 281).



FIG. 56. Detail of the bow of *Adi*, Mabuyag. Photograph by Alfred Haddon, 1898 (Courtesy: CUMAA, N.37892.ACH2). Published in Haddon (1912: Pl. XXV, Fig. 4).



FIG. 54. Detail of the bow of *Ausun*, Mabuyag. Pencil sketch and watercolour by Alfred Haddon, Oct 1888. Haddon Torres Strait Expeditions Envelope 1055, Cambridge University Library. (Courtesy: Cambridge University Library).

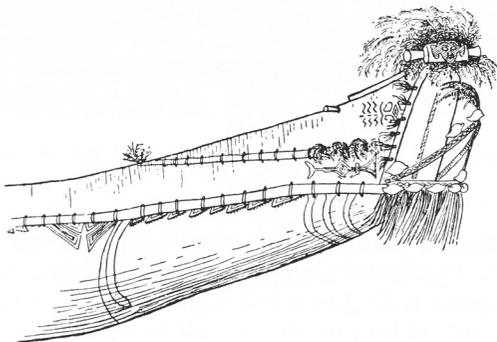


FIG. 55. Detail of the bow of *Ausun* drawn by Alfred Haddon on Mabuyag, 1888 (Haddon, 1937: Fig. 115; see also Haddon, 1904: Fig. 74, 1912: Fig. 209).

PAINTED INFILL

Numerous observations refer to the bow sections of canoes being painted red. For example, Brierly stated in southwest Torres Strait in 1848-49 that: 'I counted sixteen large canoes painted red in the bow and stern and ornamented with coconut and banana leaves' (cited in Moore, 1979: 232; see also Moore, 1979: 45). Canoes with red-infill-painted bows (hull and/or washboard) are known for the eastern Strait on Erub (Figure 11), central Strait (Figure 39), southwestern Strait on Muralag (Figures 10, 13, 46, 53) and central western Strait on Mabuyag (Figures 20, 54). In addition, Haddon recorded on Mabuyag at least two canoes (*Ausun* and *Iawaikan*) with the front (bow) sections of the gunwale and triangular-shaped weatherboards painted black, with the bamboo hull-gunwale and gunwale-weatherboard join covers on *Ausun* also painted red (1912: 213) (Figure 54). In the case of Mabuyag, the solid red-infill is often broken by a series of near vertical white and possibly black lines (Figures 27, 30-33, 35, 54-56).

PAINTED MOTIFS

Figurative motifs were painted on the gunwale or weatherboard of some Torres

Strait canoes. Haddon (1912: 214) noted that: 'The forepart of the gunwale and the triangular weather-board are the areas on which the owner gives himself full play. I was informed in Mabuiag in 1888 that the owner might represent his totem on the gunwale' (Haddon, 1888: 98). In 1840, d'Urville recorded what looks like a 'porpoise' or a fish painted on the starboard weatherboard of a canoe on Tudu (Figure 6; see also Haddon, 1912: 205). Brierly's 1850 illustration of the canoe *Bruwan* features a zoomorphic creature on the starboard weatherboard (Figures 10, 53). The 1844-45 HMS *Fly* expedition also recorded a number of canoes from the eastern Strait with large eyes painted on the weatherboard (Figures 7-9). In this connection, Raven (1990: 140) reports that in the northern Strait 'An eye also was painted on canoes to assist them locating prey' (1990: 140). Similarly, on Kiwai Island to the immediate northeast of Torres Strait, Landtman (1927: 211) recorded that 'The man provides the bow of the canoe with painted eyes, also gluing on real eyes of the *rúburúbu* or *wario* (two large hawks). After that the canoe "all same proper man he look, he see what place dugong, turtle he stop"'.

CARVED MOTIFS

Carved designs on the bow of canoes included an 'eye' motif running along much of the length of the top of the hull (see below) and fish motifs. Connor (1873 cited in Moresby, 1875: 4) observed on Dauan that

'Considerable taste is shown in ornamenting the canoes, devices resembling fish or stars being the most common. These are burnt out, and the edges trimmed and painted red or white'. Further information of fish motifs on canoe bows comes from Mabuyag (Figures 54-55, 57). Haddon (1912: 214) noted:

I have sketched two variants of what is evidently the same design [Figure 57]; I was informed that they represented the bones of a fish, the lozenges being the end view of vertebrae and the oblong the side view of a vertebra. The tails are similar to that of the gapu [remora fish]. The zigzags of C were also said to be the bones of a fish, and the design beside them was a cross-section through the body of a fish, the central lozenge being the section of the vertebral column and the four encircling designs probably indicating the muscles as seen in section. My informant had no object in misleading me and I see no reason to doubt his explanation, though it certainly appears a somewhat strange one. Of late years the decoration seems to be meaningless.

Support for the inference that these designs represent stylised fish comes from a bamboo smoking pipe collected by Haddon from Mer in the eastern Strait in 1889. The surface of the pipe is engraved with a representation of a 'highly conventionalised fish' (Haddon,

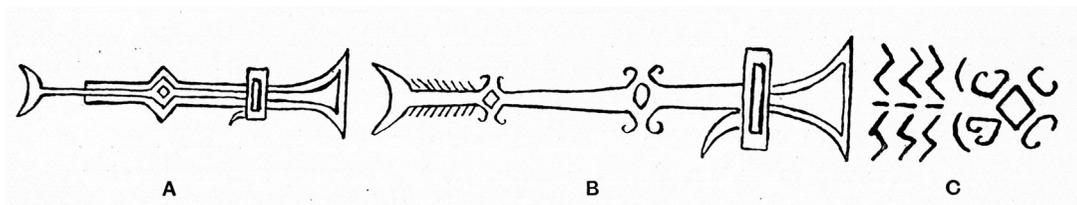


FIG. 57. Carved and painted stylised fish motifs on the bow of Mabuyag canoes. B & C – *Ausun* canoe (after Haddon, 1912: Fig. 211).

1912: Fig. 373). According to the people of Mer, this 'design was called in Mer, *nar lar war*, canoe cheek marking, it evidently is reminiscent of a fish that was engraved or painted on the bows of Miriam canoes; it may be compared with the decoration of the Mabuiag canoes' (Haddon, 1912: 378) (Figures 54-55, 57).

Some images of canoes on Mabuyag reveal a concentric triangle design repeated along the top of the hull under the gunwale (Figures 54-56).

ATTACHMENTS

In addition to painted and engraved designs, canoe bows were decorated and adorned by a range of attachments (e.g. figurehead, mouth and beard) that were part of the anthropomorphisation and zoomorphisation of canoes (McNiven, 2006b).

Figurehead

Following observations of canoes in the central and eastern Straits in 1836, King (1837a: 754) reported that 'Some have

the head carved with the figure of a man, ornamented with strings of cowries'. Remaining descriptions of Torres Strait canoe figureheads come from observations by Alfred Haddon on Mabuyag in 1888 and 1898 (Haddon, 1904: 353, 1912: 214-215, 1937: 197). Haddon's information is accompanied by descriptions of a number of figureheads he collected on Mabuyag and Saibai (Figures 58-60). One type of figurehead features two heads representing either sea-eagles (*ngagalaig*) (Figure 58) or a hawk-like bird (*kisulaig*) (Figure 56). A second type of figurehead features a single human head/face (Figures 54-55, 59-62). While Haddon (1912: 207) was informed that *dogai* figureheads were a feature of the western Strait and not the eastern Strait, he does report that figureheads (known as *mēkēt op*) were a feature of canoes on Mer in the eastern Strait (Haddon, 1912: 213; Ray, 1907: 152, 156, 175) (see below). In western Torres Strait *dogai* were a 'class of powerful beings, or bogeys' (Haddon, 1904: 353) which suggests that *dogai* figureheads imbued canoes with some form of spiritual protection and/or spiritual agency in terms of voyaging success.



FIG. 58. Canoe prow figurehead (*dogai*) with two heads representing the sea-eagle (*ngagalaig*), Mabuyag. Collected by Alfred Haddon 1898 (Courtesy: CUMAA, Z.9698). Length: 48 cm (Moore, 1984: 50). Published in Haddon (1904: Fig. 212), Moore (1984: Pl. 10, #96) and Philp (2001: 129).



FIG. 59. Canoe prow figurehead (*dogai*) with a human face, Saibai. Collected by Alfred Haddon 1888 (Courtesy: British Museum, 89+95 © The Trustees of the British Museum). Carved single piece of hardwood coloured with red ochre and black and white pigments, left eye with shell inlay held in with black paste, and cassowary feather tassels inserted into drilled holes at top and tied onto sides with two-ply string. Length: 36 cm (Moore, 1984: 59). Published in Edge-Partington and Heape (1890, I: Pl. 323, Fig. 2), Moore (1984: Pl. 23, #193) and Fraser (1978: Pl. 95).



FIG. 60. Canoe prow figurehead (*dogai*) with a human head, Saibai. Collected by Alfred Haddon 1888 (Courtesy: CUMAA, Z.9697). Length: 43 cm (Moore, 1984: 59). Published in Haddon (1912: Pl. 26, Fig. 1), Fraser (1978: Pl. 44), Moore (1984: Pl. 23, #192) and Philp (2001: 13).



FIG. 61. Figurehead (*dogai*) and stern of a canoe, Mabuyag. Pencil sketch and watercolour by Alfred Haddon, Oct 1888. Haddon Torres Strait Expeditions Envelope 1055, Cambridge University Library (Courtesy: Cambridge University Library).



FIG. 62. Figurehead from a canoe, Boigu. Collected by Sir William Macgregor, May 1896 (Courtesy: Queensland Museum, M3935). Published in Quinnell & Miller (2011: Fig. 8a).

Mouth

Numerous images of Torres Strait canoes show shells adorning the canoe prow (Figures 8, 24, 26, 54-56). These prow shells were observed by Bligh in 1793 (cited in Lee, 1920: 181) and Brierly who recorded in 1848 that canoes were 'ornamented with a string of cowries which hung down in a graceful festoon in front of the bow' (cited in Moore, 1979: 45). In some cases, these shells

(*Ovula ovum*) formed part of an attachment stated explicitly to represent a mouth or jaw (*gud*, meaning 'jaw/mouth' in W-C) (Haddon, 1912: 215, 1937: 197). Mouth/jaws are shown on canoe images from the eastern Strait on Mer (Figure 52) and the central western Strait on Mabuyag (Figures 21-24, 26, 35, 54-56). A rare example of a mouth/jaw attachment with shells comes from Dauan in the northwestern Strait (Figure 63).



FIG. 63. Mouth/jaw (*gud*) decoration from canoe prow, Dauan. Collected by Alfred Haddon in 1889 (Courtesy: British Museum, 98+197 © The Trustees of the British Museum). The shells (*Ovula ovum*) (*bubiam*) reveal traces of red ochre and are attached to a framework consisting of cane wrapped in thick sinnet (coconut fibre) chord using two-ply string. The upper and lower jaws are kept apart by a vertical stick (*paipa za*) topped with a tuft of cassowary feathers. Length = 42 cm (Moore, 1984: 60). Published in Edge-Partington and Heape (1890, I: Pl. 323, Fig. 1).

Beard

In 1840, d'Urville observed that prows of canoes from Tudu in the central Strait have an attachment that 'represented an old man with a long beard of seaweed' (1846 cited in Rosenman, 1987, II: 550). Haddon (1912: 215) recorded that Torres Strait canoe prows exhibit 'a fringe of shredded young coco-nut leaves' termed *tu* (W-C) and *su* (MM) and said by the 'Miriam' of the eastern Strait to 'represent a beard, *imus*' (see also Haddon, 1937: 197; Moore, 1979: 45). Images of these prow 'beards' are known for the eastern Strait (Figures 7-8, 11, 52), central (Figures 6, 39), southwestern Strait (Figures 10, 13, 53), and central western Strait on Mabuyag (Figures 20-24, 26, 28, 54-56).

Whiskers

Haddon (1912: 215) recorded that 'Tufts of cassowary feathers may also be inserted along the sides of the end-board, along part of the junction of the weather-board and gunwale, and at the end of the former; these feathers are called "whiskers" by the Miriam. The posterior border of the deck-covering of the weather-board in the Mabuiag [Mabuyag] canoes may also be decorated with tufts of feathers' (Figures 54-56). All cassowary feathers used by Torres Strait Islanders were imported from the adjacent coast of Papua New Guinea (Haddon, 1904: 295).

European items

A unique reference exists for a European item salvaged from a shipwreck attached to a canoe prow as an adornment. King (1837a: 658) noted that: 'He [Ireland] also saw some pieces of the ship's [Charles Eaton] cabin doors, attached as ornaments to the heads of their canoes, which they appeared to prize very much'.

CANOE ADORNMENT – STERN

The stern of Torres Strait canoes was the focus of considerable attention and flamboyant decoration. As with bows, most images available showing the detailed form of stern decoration come from Oswald Brierly's 1849 pencil sketches and watercolours for the Kaurereg of the southwest Strait and Alfred Haddon's 1888/1898 watercolours and photographs for the Goemulgal of Mabuyag (Figures 64-68).



FIG. 64. Detail of the stern of *Bruwan*, a Kaurereg canoe from Muralag. Pencil sketch and watercolour by Oswald Brierly, 6 November 1849 (Courtesy: Mitchell Library, State Library of NSW, PXA 510).



FIG. 65. Detail of a canoe stern from Erub. Pencil sketch and watercolour by Capt. Owen Stanley, HMS *Rattlesnake* expedition, December 1849 (Courtesy: Mitchell Library, State Library of NSW, PXC 281).

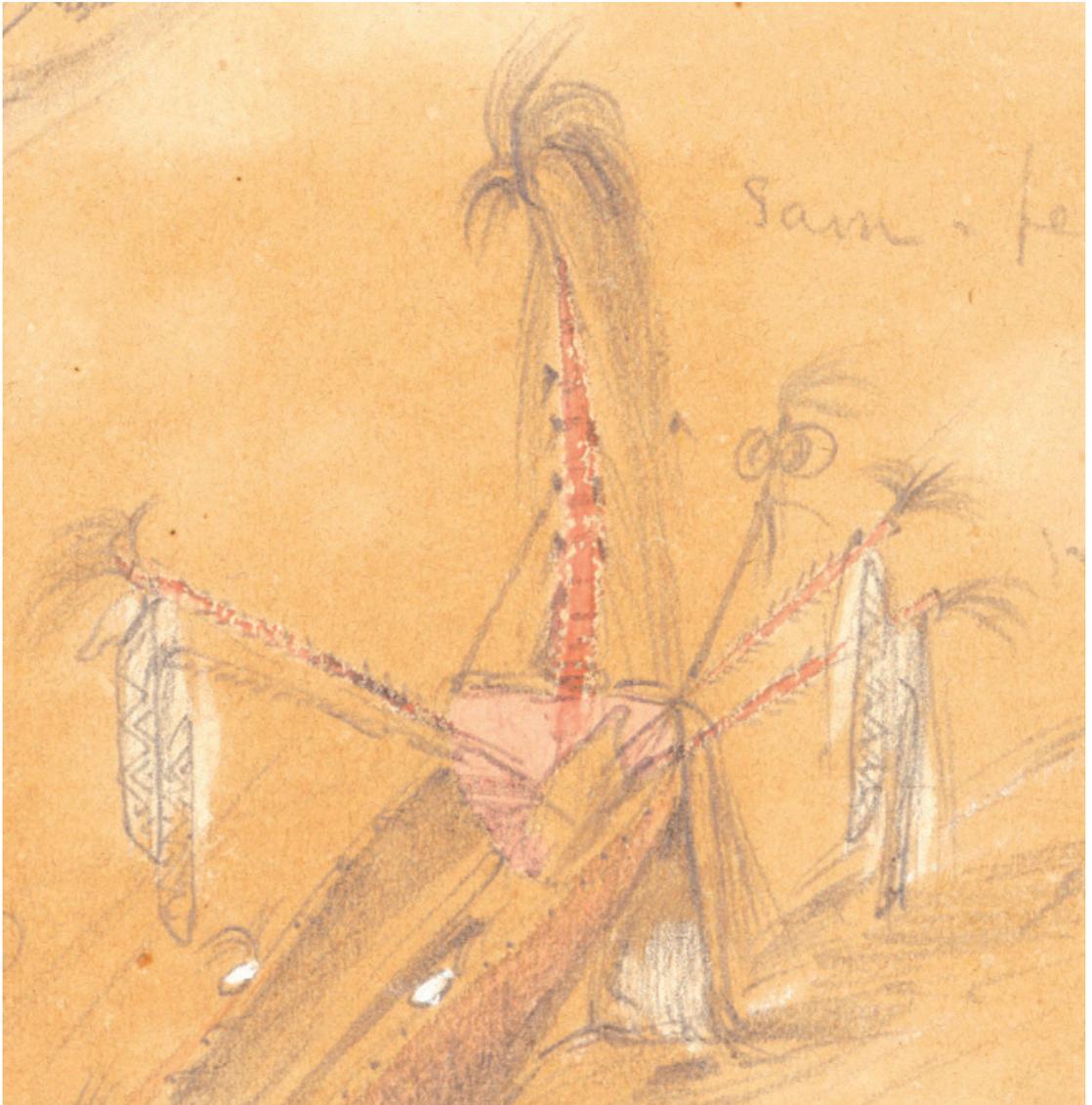


FIG. 66. Detail of stern of a canoe from Ugar. Pencil sketch and watercolour by Oswald Brierly, 10 December 1849 (see Fig. 12) (Courtesy: Mitchell Library, State Library of NSW, PX*D 82).



FIG. 67. Detail of the stern of a canoe from Muralag at Evans Bay, Cape York. Pencil sketch and watercolour by Oswald Brierly, 5 November 1849. (Courtesy: Mitchell Library, State Library of NSW, PX*D 82).



FIG. 68. Stern of the bow of *Adi*, Mabuyag. Photograph by Alfred Haddon, 1898 (Courtesy: CUMAA, N.37889.ACH2, cropped). Published in Haddon (1912: Pl. XXV, Fig. 3).

PAINTING

Few references explicitly discuss canoe stern painting. From images it is clear that the stern sections of hulls were often painted with a solid red infill similar to that for canoe bows in the eastern Strait (Figures 11, 65-66), southwestern Strait (Figures 10, 13, 64, 67), and central western Strait on Mabuyag (Figures 20, 61). In the case of Mabuyag, the solid infill is often broken by a series of near vertical white and possibly black lines (Figures 27, 31, 33, 35, 68).

CARVING

In 1792, Bligh observed that 'the stern was a little carved' on Torres Strait canoes (cited in Lee, 1920: 181). In the southwest Strait, Brierly in 1849 recorded a *gapu* (suckerfish) motif on canoe sterns similar to that recorded by Haddon on the bow of Mabuyag canoes:

I observed a bit of carving near the stern, on one side, and from the strong resemblance it bore to the sucker fish's head, looking down upon it from above, the outline of the sucker on the head, the projecting lower jaw which would be seen beyond the upper one, and the position of the eyes, placed near the mouth at the side, had all been observed and were characteristics of the fish which could not be mistaken. Upon my pointing to it and asking what it was, Cheakow immediately answered *gapoo queekoo* - 'gapu's head' (cited in Moore, 1979:104).

Some images of canoes on Mabuyag reveal a concentric triangle design repeated along the top of the hull under the gunwale (Figures 61, 68).

ATTACHMENTS

Stern attachments consist of a single, central post (*kun* in W-C - Haddon, 1937: 197) and a series of staves projecting out to the port

and starboard sides (*gozed* in W-C - Haddon, 1937: 197); both usually highly decorated with tassels and streamers. Brierly pointed out the similarity between the form of streamers on both canoe sterns and a turtle hunting magic shrine on Turtle Island located immediately south of Torres Strait, and indicated that the canoe streamers were associated with attracting turtles for hunting. As such, these ornaments were only used during the turtle-hunting season which focused on October and November (Brierly 1849, cited in Moore, 1979: 105, 122, 122, 198, 210).

Stern post

In 1792, Lt. Portlock recorded that 'towards the stern there was a small kind of gallows with some nude figures carved on it' (cited in Lee, 1920: 255). Following his 'rescue' in 1836, castaway 'Ireland, upon being shown the drawing of the canoes of Murray Island in Flinders' *Voyage*, [Westall's engraving in Flinders, 1814] describes the ornament that is placed in the stern, to be a pole surmounted by a black feather [cassowary], which they procure from New Guinea and prize very highly' (King, 1837a: 754). In 1844-45, Sweatman from the HMS *Rattlesnake* expedition noted that: 'At the stern is fixed a pole 8 or 10 feet [2.4-3.0 m] high surmounted by a plume of emu [cassowary] feathers and hung about with a quantity of great cocoon mats which trail in the water astern' (cited in Allen & Corris, 1977:35). On Dauan in the early 1870s, Connor observed that: 'There is usually a staff in the stern, with a quantity of fine grass on it' (1873 cited in Moresby, 1875: 4). These early observations are consistent with images of canoes with stern posts and characteristic tassels of cassowary feathers or coconut leaves from the eastern Strait (Figures 4-5, 7-9, 11-12, 14, 65-66), central Strait (Figure 6), southwestern Strait (Figures 10, 13, 64, 67), and central western Strait on Mabuyag (Figures 20-23, 26-27, 61, 68).

Haddon (1912: 207) noted that the 'stern' of a canoe was termed '*kun*' in western Torres Strait. He (1912: 216) also recorded that the stern post of *Adi* canoe on Mabuyag was topped with *goa* nut 'rattles', cassowary feathers, a carved and painted wooden 'large fish's tail, *wapi pakai*, resembling that of the king-fish or one of the allied gigantic predacious mackerels' and 'steadied by a guy-line, *zez*, decorated with pieces of calico' (Figure 68). A similar stern post adorned with a carved fish tail from Mabuyag is shown in Figure 61. Haddon was informed on Mabuyag in 1888 'that a piece of the skin of the owner's totem animal might be hung on to the *kun* of a canoe' (Haddon, 1888: 98, 1912: 216).

The only extant stern post was collected by Alfred Haddon on Dauan in 1889 (Figure 69). The post was also used as a 'tobacco charm' (Haddon, 1912: 216). It is made from a sawn softwood plank and the surface is heavily weathered with traces of red ochre in recesses. The carved eye recess contains tiny amounts of black paste that may have been used as an adhesive for shell inlay. The nostril hole contains a copper tack with adhering string and possibly remnants of feathers. The 17 holes for the attachment of tassels are straight-sided and appear to have been made with a drill.

In 1898, Alfred Haddon collected a thin slat of black lacquered wood with two notched margins measuring 23 cm x 4 cm (CUMAA: Z.9700) which was suspended from the stern post on a canoe on Mabuyag purely for decoration (Haddon, 1912: 216, 278, Fig. 238; Moore, 1984: 50).



Fig. 69. Two sides of a canoe stern post (*kun*) collected by Alfred Haddon from Dauan in 1889 (Courtesy: British Museum, 89+171 © The Trustees of the British Museum). Length = 125 cm, width = 2.4-2.7 cm. Published in Edge-Partington and Heape (1890, I: Pl. 323, Fig. 3) and Moore (1984: 59, Pl. 23, #190).

Staves

Wooden staves in the stern of canoes are represented clearly in canoe images from the eastern Strait (Figures 5, 7-9, 11-12, 14, 65-66), central Strait (Figure 6), southwestern Strait (Figures 10, 13, 46, 64, 67), and the central western Strait on Mabuyag (Figures 20-23, 26-27, 61, 68). In southwest Torres Strait in 1849, Brierly recorded that: 'In the stern she had three short sticks, the centre one upright and the others at an angle at each side. They corresponded with the ensign staffs in the stern of our boats. A mass of dry leaves, pale and worn, attached to these trailed down into the water and from the right side of the outrigger stage stuck out, with [cords?] tied to these sticks leading aft' (Moore, 1979: 93). Brierly adds that the 'long streamers ... hung down in the water in a very beautiful manner' (1848 cited in Moore, 1979: 45). Brierly's illustrations also show that staves may terminate in carved and painted wooden fish and shell tassels (Figure 67). Haddon (1904: 338, 1912: 216; see also Ray, 1907: 129) adds that on Mabuyag he recorded staves (*gozed*) with carved serrated edges and terminating in the carved representation of the head of either a 'frigate-bird' (*womer/waumer*, W-C) or more occasionally that of a 'sea-eagle' (*ngagalaig*, W-C) which he thought indicated 'a magical significance' and use as turtle/dugong 'charms' (Figures 70-71, 74). In this connection, Haddon (1908: 208) noted that: 'I was informed in 1889 that sometimes a large *sokop madub* [tobacco fertility charm] would be put in the stern of a canoe and decorated with feathers for "gammon" (fun)'.

Haddon collected six *gozed* from Mabuyag (Figures 70-74). They range from simple carved sticks with minor traces of red ochre pigment to elaborately carved staves with detailed

representation of a bird's head, multiple notching of the sides, painting with red and white pigments, and attachment of different types of feathers, strips of cloth, and string.



FIG. 70. Canoe stern staff (*gozed*), Mabuyag. Collected by Alfred Haddon, 1888 (Courtesy: CUMAA, Z.9692). Hardwood carving with bird's head and two rows of notches along central shaft and groove near base. No paint/pigment evident. Length = 79 cm (see also Moore, 1984: 50).



FIG. 71. Canoe stern staff (*gozed*), Mabuyag. Collected by Alfred Haddon, 1898 (Courtesy: CUMAA, Z.9694). Hardwood carving with smooth flat sides suggesting manufacture from a sawn plank. Bird's head at one end with large V-shaped notches along central shaft and groove at base. Painted with white pigment and red ochre. Attachments of feathers (including cassowary), strips of cloth (four different types with colouring/printed designs) and string. Length = 80 cm (see also Moore, 1984: 50). The four sub-rounded features are termed *kolapi* on Mabuyag (Haddon, 1898: 58), the Queensland Bean or Matchbox Bean (Ray, 1907: 106).



FIG. 72. Canoe stern stave (*gozed*), Mabuyag. Collected by Alfred Haddon, 1898 (Courtesy: CUMAA, Z.9695). Hardwood carving with multiple cone-on-cone notches (Moore, 1984: 50). Riddled with marine borer holes indicating manufacture from a piece of wood which has spent some time immersed in the sea. Truncation of borer holes by carving indicates artefact manufacture after immersion in the sea. Painted with red ochre along much of central shaft and strip of white paint along one side of notches. Attachments of feathers (four types), cloth strips (one type), two sticks (possibly bamboo), skin (possibly bird), and string (three types). Length = 82 cm.



FIG. 74. Canoe stern staves (*gozed*), Mabuyag. Collected by Alfred Haddon, 1898 (Courtesy: CUMAA), (see Moore, 1984: 50; Philp, 2001: 30). Top: Hardwood carving with smooth flat sides suggesting manufacture from a sawn plank. Bird's head at one end with closely-spaced and deep notching along central shaft. Painted with white pigment and red ochre. Attachments of feathers (two types, including cassowary), cloth strips (three types with different colouring/printed designs), and string (two types). Length = 65 cm (CUMAA: Z.9693a). Bottom: Hardwood carving with smooth flat sides suggesting manufacture from a sawn plank. Bird's head at one end with closely-spaced and deep notching along central shaft. Painted with white pigment and red ochre. Attachments of cloth strips (two types with different colouring/printed designs), and string (two types). Length = 79 cm. The notching is termed *wapi terapat* (W-C) and represents a fish's vertebral column (Haddon, 1898: 58; Ray, 1907: 129) (CUMAA: z 9693b).



FIG. 73. Canoe stern stave (*gozed*), Mabuyag. Collected by Alfred Haddon, 1898 (Courtesy: CUMAA, Z.9696). Softwood carving with a series of five cone-on-cone notches at one end and groove near base. Red ochre pigment along most of item. Length = 84 cm (see also Moore, 1984: 50). The notched terminal was described as *zamiak*, 'flash' (Haddon, 1898: 58; Ray, 1907: 130).

CANOE ADORNMENT – CENTRE & INTERIOR

PAINTING

Apart from solid infill painting of the bow and stern sections of hulls, the central section of hulls and the inside of hulls could also be decorated.

Inside hull

Haddon (1912: 213) stated that: 'I was informed that the hulls of the imported canoes were usually painted and carved by their New Guinea makers, and I have seen such painted designs inside a canoe'. While the form of these designs was described neither by Haddon nor any other source, Haddon (1890a: 343) commented that:

I was very careful to make inquiries about trade marks. There are certain marks in red paint on the inside of canoes. So far as I could gather the islanders do not recognize these as trade marks, but consider them merely as ornament. I do not know whether they really are a kind of sign manual or not, and if so, whether the Saibai men understand them. A trade mark which is not understood by purchasers can have no value at all, and the marks in question may very well have been a decorative intent.

Outer hull stripes

Despite numerous images of canoes dating from the 1790s through to 1840s, it is only with the watercolours by Oswald Brierly that the first insights are provided into the elaborate painting of multiple vertical lines (stripes) along the outsides of canoe hulls. Brierly's images clearly show red painted stripes on canoe hulls from Erub and Ugar (Figures 11-12) and Muralag (Figure 13) from the late 1840s. In some instances the

vertical stripes are separated from the solid red infill sections of the stern and/or bow by either a single red strip or elaborate double (V-shaped) diagonal red strip design (Figures 11-12). Haddon's recordings confirm that hull striping continued in the eastern and western Straits through to at least the 1880s and 1890s. However, his photographs of canoes on Mer and Mabuyag indicate that vertical stripes could also be painted with white pigment and possibly black pigment (Figures 18, 20-21, 28). That stripes could be continuous from the port side to starboard is indicated by Haddon's (1912: 213) comment that 'numerous red lines encircled the hull' of the canoe named *Iawaikan* (Figure 20).

Crates and outriggers

Brierly's detailed watercolours reveal that the ends of outrigger booms and floats, and float attachment sticks and the attachment point of these sticks on the float, and crates could be painted red (Figures 11-12). It is also clear that remaining areas on outrigger floats and possibly sections of outrigger booms were painted with a white pigment (Figure 12). Haddon (1912: 213) noted that on the canoe named *Iawaikan*, the 'tips of the poles of the outriggers and their pegs were [painted] red' (see also Haddon, 1912: 216) (Figure 20).

CARVING

Haddon is the only nineteenth century source to document carved designs on canoe hulls. Firstly, he notes that: 'I have seen patterns charred on the inside of canoes, but this was done by the Fly River makers' (Haddon, 1912: 388). No further details are provided. Secondly, Haddon (1912: 213) observed in 1888 that: 'In many Mabuyag canoes an incised pattern, *garu minar*, runs from the bow to the stern immediately below the upper edge of the hull' (Figures 54-56, 61, 68, 75). He noted that the face-like design

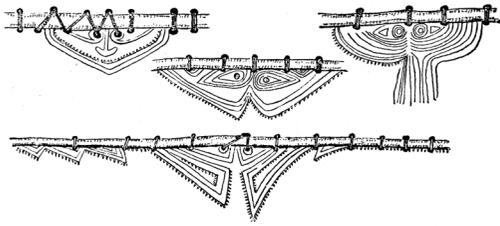


FIG. 75. Carved 'koimai' designs' on the upper edge of canoe hulls, Mabuyag. Sketched by Alfred Haddon, 1888 (after Haddon, 1912: Fig. 210).

with two eyes is 'called a *koimai*' on Mabuyag and *mëkët op* on Mer. *Koimai* is the same term used for scarified shoulder designs on men in western Torres Strait, while *mëkët op* is also the term for 'canoe figurehead' on Mer (Haddon, 1904: 214, 1912: 23, 213). Canoe *koimai* and *mëkët op* designs are 'cut by the maker of the canoe in New Guinea' (Haddon, 1912: 213, 1935: 307).

ATTACHMENTS

Two types of flags (tasselled poles) are described for Torres Strait canoes – those attached to platform crates as decoration and those that are more portable and used for signalling.

Crate flags

Numerous images of Torres Strait canoes show vertical and/or angled sticks measuring less than 2 m long attached to the outer sides of platform storage crates. In some cases the sticks appear undecorated (Figures 6, 10, 14, 39, 47) while in other cases they are topped with tassels of feathers or plant material (Figures 7-8, 11-13, 20-21, 23-27, 43, 46). For example, Brierly mentions that in the southwest Strait, canoe 'lockers were ornamented with sticks leaning aft with bunches of dry grass and feathers tied to them' (1849 cited in Moore, 1979: 122). Similarly, Sweatman observed that platform storage crates 'are ornamented with a number

of bamboos, stuck up on end, with bunches of grass & leaves tied to the tops of them' (1844-45 cited in Allen & Corris, 1977: 35).

Haddon (1888: 99) has a sketch of a canoe that shows two vertical sticks projecting from the front and rear ends of the port storage crate labelled '*dadu*'. The following page of the notebook has a sketch of three flags in a row labelled '*dadu*' that appear to be crate flags (Haddon, 1888: 99). In his published Reports, Haddon (1912: 216-217) had little to say about these flags except that: 'A frequent decoration consisted of flags, *dadu* [W-C], which were made of pinnules of coco-nut palm leaves, lashed on to a pole, and provided with a tuft of cassowary feathers above and below'. Haddon (1912: 217) stated explicitly that the two flags extending from the front and rear of the storage crates in Sunday's drawing of a Mabuyag canoe are '*dadu*' (Haddon, 1912: 217) (Figure 21). While Haddon (1912: 205) suggested the two lateral stern posts with large tassels on the Tudu canoe depicted by d'Urville are *dadu* (Figure 6), it is more likely they represent stern staves (*gozed*).

Signalling flags

Some nineteenth century canoe images for Torres Strait show two long poles well over 2 m in length topped with large tassels (Figures 11, 21, 43, 47). Brierly's painting of an Erub canoe shows the poles lying horizontal in the starboard storage crates (Figures 12, 43). Lt. Porlock (1792 cited in Lee, 1920: 255) provides one of the clearest descriptions of the function of these flags:

They ... certainly understand and make use of signals to each other when at a distance, for this day as well as the day the cutter fired at the canoe, I saw them frequently display a small flag on a long pole, and whenever this was done by a canoe one or more of the other canoes at a

distance also displayed a small flag, as if in answer to the signal.

Similarly, in the Murray Islands of the eastern Strait, Rutherford (1834: 195) recorded that: 'the natives kept constantly waving a sort of flag composed of long grass tied to bamboo poles, signaling their wish to communicate with us'. Signalling flags, also called *dadu*, were used on the New Guinea coast adjacent to Torres Strait (Riley, 1925: 124-125; Landtman, 1927: 403). It is probable that extra-long bamboo poles with tassels used by the Murray Islanders as reef markers (Flinders, 1814, II: 108; Jukes, 1847, I: 181-182; King, 1837a: 755), represent a separate class of flag to *dadu*. The extra-long flags shown standing upright next to the bow of the canoe in Melville's lithograph of an Erub canoe on the beach possibly represent territorial flags (Figure 8).

Three signalling flags are held by museums. The first flag is held by the British Museum and was presented by Capt. Owen Stanley of HMS *Rattlesnake*. It is 266 cm long and has a large tassel attached that appears to be made of split coconut leaves (see Haddon, 1912: 217). The second flag was collected by Alfred Haddon from Mabuyag in 1898 (Figure 76 right). It is 219 cm long and features tassels of split pandanus leaves up to 90 cm long attached by string to a red-ochred pole topped with cassowary feathers. The third flag was also collected by Haddon from Mabuyag in 1898 (Figure 76 left). It is 221 cm long and similarly features split pandanus leaf tassels attached a pole with string. The basal 35 cm of both Mabuyag flag poles are painted with black pigment (see Moore, 1984: 44).



FIG. 76. Signalling flags used on canoes, Mabuyag. Collected by Alfred Haddon, 1898. (Courtesy: CUMAA, Z.9701a - right; Z.9701b - left).

CANOE VOYAGING

TRAINING

Little information is available on how Torres Strait Islanders gained the skills to sail, manage and maintain canoes. While it is likely those skills were gained by observation and participating in canoe voyages, they were also obtained more formally as part of initiation. Haddon (1904: 218) reported that: 'In the bush the boy [*kernge*, initiate] is shown the use of the digging stick and instructed in the management of a canoe and in lore relating to fishing and other matters'.

LAUNCHING

Few nineteenth century records were made on the launching process for canoes, particularly moving canoes on the beach down into the water. For large canoes with considerable weight, movement from the beach into the water would have required considerable effort (Figure 77). Movement of canoes was probably assisted by placing lengths of wood down, over which the canoe hulls could more easily slide (see below – 'Beaching'). Brierly (1849 cited in Moore, 1979: 188) mentioned some men 'waiting for the tide to float their canoes off' before they set sail in the southwest Strait. Apart from the usual preparations of ensuring appropriate crew members and necessary provisions and equipment, it is clear that at least in some situations special rituals were required. For example, Haddon (1904: 331) noted that on Mabuyag, 'Preparatory to starting out to catch the floating turtles the men took a bull-roarer from the *agu* [turtle shrine] and swung it over the canoe' (Figure 21).

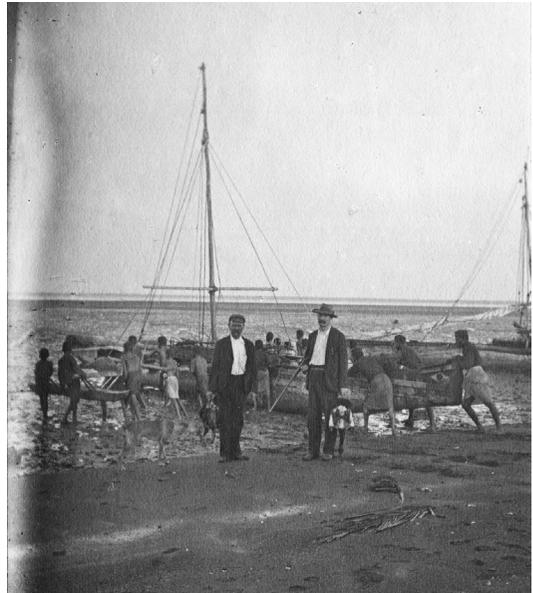


FIG. 77. Launching a canoe, Saibai, 1901. The canoe is being moved from the beach across tidal mudflats by at least 18 boys and young men. Photographed by William Edgar Geil (McNiven Collection).

PROPULSION

The movement of canoes on sea voyages was made possible through the power of either the wind (using sails) or human muscle (using paddles). Gentle manoeuvring of canoes in shallow water was undertaken by punting. In some cases, canoes simply moved along with tidal currents during fishing (Brierly, 1849 cited in Moore, 1979: 75).

Sailing

It is beyond the scope of this paper to document methods of sailing Torres Strait canoes (for details see Haddon, 1912: 212–213). It is clear that the earliest recordings of canoes include those with sails (Portlock, 1792 cited in Lee, 1920: 250). MacGillivray (1852, II: 17) made the interesting observation that: 'From the whole sail being placed in the bow these canoes make much leeway, but when going free may attain a maximum speed of seven or eight knots per hour'.

Paddling

Both Capt. Bligh and Lt. Portlock observed that canoes were paddled standing (Bligh, 1792 cited in Lee, 1920: 181, Portlock, 1792 cited in Lee, 1920: 255). In this connection, Rutherford (1834: 195) stated that in the Murray Islands: 'The paddlers stand up in the canoe, and do not seem to attend to any particular arrangement in the performance of their work, but each paddles on one side or the other, according to his convenience, so that sometimes most of them, or perhaps all, are seen paddling on the same side'. Following observations made in 1844-45, Sweatman noted that: 'The canoe is propelled with paddles of hard wood and although the mats &c. hanging from it and the outriggers, must necessarily form a great obstacle to its progress, the natives can propel them with considerable speed, using violent gesticulations & shouting vehemently' (cited in Allen & Corris, 1977: 35). In the southwest Strait in 1848, Brierly observed that: 'They have no rudder but steer with the paddles – one man in the stern sitting to paddle and the rest standing up. I have never seen more than five paddling at once but generally one before the platform and two aft. These are constantly kept going when the vessel is under sail, to steer her' (cited in Moore, 1979: 44-45). A graphic illustration of canoe paddling is shown in Brierly's chromatograph of the *Kai Marina* (Figure 13).

Poling

A number of sources mention poling of canoes in shallow water across reefs while fishing (Haddon, 1904: 68, 104; Lawrie, 1970: 90, 111, 183).

PARKING

Parking of canoes took two forms – either mooring (tethering the canoe to a stick or anchor in shallow water) or beaching (pulling the canoe out of the water up onto the beach).

Mooring

The most common reference to mooring of Torres Strait canoes involves using rope to tie the canoe to a pole stuck into the sand (Brierly, 1848-49 cited in Moore, 1979: 27, 58, 125; Haddon, 1908: 301) (Figure 78). Brierly also mentions people sleeping on canoes at night to ensure they stay afloat with an ebbing tide and as a security measure when visiting other groups (1849 cited in Moore, 1979: 182, 232). Stone anchors were used for canoes (see above) and numerous references mention anchoring on reefs while fishing (Haddon, 1904: 67) and simply using anchors to moor canoes (Haddon, 1904: 102, 311, 1908: 301). Brierly (1849 cited in Moore, 1979: 206) was informed that 'canoes during the bad weather are always kept up the creek at the *yet* [area S.W. end of Port Lihou]' on Muralag.

Beaching

Beaching of canoes was clearly a common practice across Torres Strait judging by the numerous references (both textual and pictorial) to this practice. In the 1830s, six canoes were observed beached on Wednesday Island (King, 1837a: 804) while Rutherford (1834: 198) reported that on Mer 'all the canoes were hauled far up on the beach'. In 1840 on Tudu, d'Urville noted that: 'Beside the village we saw about thirty canoes on the shore' (cited in Rosenman, 1987, II: 550). In 1844-45, Jukes (1847, I: 292-293) observed 10-12 large canoes drawn up on the beach on Erub (see also Jukes, 1847, I: 181). In December 1849, MacGillivray (1852, II: 41) observed 'three very large canoes' pulled up onto the beach on Warraber. Capt. Banner informed Henry Chester that upon his arrival on Tudu in 1869 that he observed 18 beached canoes (Chester, 1870: 1). A couple of years later on Tudu in 1872, Moresby (1876: 29) observed 'formidable war canoes, fifty and sixty feet long, hauled up on the beach'.



FIG. 78. Canoes moored at Evans Bay, Cape York. Watercolour by Capt. Owen Stanley, HMS *Rattlesnake* expedition, November 1849 (Courtesy: Mitchell Library, State Library of NSW, PXC 281). Image shows large Kaurareg canoe and smaller local Gudang canoes (Moore, 1979: Pl. 10).

Illustrations of Torres Strait canoes provide extra details on canoe beaching. In all cases, canoes are positioned perpendicular to the shoreline usually with the bow facing the sea (Figures 6, 8, 9, 14, 15, 20, 24-27, 30, 33-35). Significantly, no references were found describing how the large and very heavy canoes were hauled up onto the beach. It seems clear that such a task was performed by numerous people dragging the canoe across the sand. It is also likely that log rollers were used given that a number of photos appear to show logs supporting the hulls of canoes drawn up on the beach (Figures 27, 33) or immediately above the beach within a village (Figures 9, 14-15). In other situations, canoes may have come to rest on the beach simply by the falling tide (Figures 6, 8, 20, 24-25, 30).

Protective covering

Woven mats, possibly also used as sails, were often placed over beached canoes to protect them from the drying effects of the sun (Haddon, 1908: 48, 1912: 209, 1937: 196). For example, during summer (December) 1849, MacGillivray observed that the three large

canoes beached on Warraber were 'protected from the sun by matting' (1852, II: 41).

CREWING

Numerous observations were made by Europeans on the number of people in canoes, possibly to provide other mariners intending to pass through Torres Strait an idea of how many Torres Strait Islanders they may need to deal with even with a single canoe encounter. It is only with the work of Alfred Haddon that insights into the formal rules of crew formation and seating arrangements are available.

Number of people in canoes

European observations on the number of people in specific canoes are available only for the period 1792 to 1849. The number of people seen in canoes ranged from two to 20 (Table 5). The capacity of large canoes to hold up to 20 people is reaffirmed by King's (1837a: 754) comment that canoes 'contain from fourteen to sixteen individuals' and Kennett's (1867 cited in Moore, 1979: 239) observation that canoes are 'capable of holding

from twelve to twenty natives'. Sweatman's comment based on observations made in 1844-45 that canoes are 'capable of carrying from 25 to 30 people with ease' may be true but rarely realised (cited in Allen & Corris, 1977: 35).

Table 5. Number of people observed in canoes.

Number of people	Observation / Reference
2	Rutherford (1834: 198)
4	Jukes (1847, I: 160) Brierly (1849 cited in Moore, 1979: 188)
5	Rutherford (1834: 198) Brierly (1848 cited in Moore, 1979: 48) Brierly (1849 cited in Moore, 1979: 188) Brierly (1849 cited in Moore, 1979: 203)
6	Lawrie (1970: 264) Jukes (1847, I: 159) Brierly (1849 cited in Moore, 1979: 188)
7	Brierly (1849 cited in Moore, 1979: 188) MacGillivray (1852, II: 39-40)
7-8	Portlock (1792 cited in Lee, 1920: 249) Portlock (1792 cited in Lee, 1920: 277)
8	Bligh (1792 cited in Lee, 1920: 187)
9	Bligh (1792 cited in Lee, 1920: 176)
10	Bligh (1792 cited in Lee, 1920: 179) Brierly (1848 cited in Moore, 1979: 27) Brierly (1848 cited in Moore, 1979: 44) Brierly (1849 cited in Moore, 1979: 103)
>10	Brierly (1848 cited in Moore, 1979: 27)
12	Rutherford (1834: 195)
12-14	Portlock (1792 cited in Lee, 1920: 251)
14	King (1837a: 757) Jukes (1847, I: 160)
15	Bligh & Portlock (1792 cited in Flinders, 1814, I: xxi; Lee, 1920: 175) Brierly (1849 cited in Moore, 1979: 121) Brierly (1849 cited in Moore, 1979: 207)
16	Rutherford (1834: 195) King (1837a: 654)
17	Jukes (1847, I: 166)
20	Bligh (1792 cited in Lee, 1920: 187)

Seating arrangements

Based on his research on Mabuyag, Haddon (1904: 148) recorded that for a man owning a canoe, his *imi* (his brother-in-law) and his *ira* (father-in-law and son-in-law) 'had a definite place in the fore-part of the canoe. ... In the canoe the *imi* was known as "*buai-garka*". It was his duty to hoist the sail, anchor, heave the anchor, light the fire, prepare the food, and as I was told by my informants, he had very hard work'. Furthermore, 'The owner of a canoe in the western islands is the "captain," who stands at the stern and steers, and directs the operations of the crew; but when turtle were being caught by means of the sucker-fish ... the *buai-garka* takes charge'; in the eastern Strait 'the owner or captain of a canoe stood in the bow and speared fish, the mate was in the stern' (Haddon, 1912: 213).

FLEET SIZE

European observations on the number of canoes travelling together in a fleet are available for the period 1792 to 1849. These records indicate that the size of fleets ranged mostly from two to 10 canoes, with 16 the largest flotilla recorded (Table 6). Brierly (1848-49 cited in Moore, 1979) recorded numerous instances of individual canoes cruising the waters of the Muralag Island Group. Indeed, it appears that single canoes going out fishing and hunting turtles and dugongs, and travelling to different sections of coastline and different islands, was the daily norm.

SUSTENANCE

Canoeing in the tropics on the open sea would have been a physically demanding undertaking requiring food and especially drinking water to replace sweat lost through exposure to the sun and the desiccating effects of salt-saturated winds.

Table 6. Number of canoes forming a fleet.

Number of canoes	Observation/reference
2	Portlock (1792 cited in Lee, 1920: 258) Bampton & Alt (1793 cited in Flinders, 1814, I: xxxix) Sweatman (1844-45 cited in Allen & Corris, 1977: 152) Haddon (1904: 319)
3	Portlock (1792 cited in Lee, 1920: 275) Bligh & Portlock (1792 cited in Flinders, 1814, I: xxviii) Flinders (1814, II: 109) Brierly (1848 cited in Moore, 1979: 27) Brierly (1848 cited in Moore, 1979: 44) Brierly (1849 cited in Moore, 1979: 98) Haddon (1904: 316)
4	Bligh & Portlock (1792 cited in Flinders, 1814, I: xxi; Lee, 1920: 176) King (1837a: 654) Brierly (1848-49 cited in Moore, 1979: 222) MacGillivray (1852, II: 42)
5	Portlock (1792 cited in Lee, 1920: 250) Portlock (1792 cited in Lee, 1920: 253) King (1837a: 660) King (1837a: 662) MacGillivray (1852, I: 124)
6	Rutherford (1834: 195) Brierly (1849 cited in Moore, 1979: 75)
6-7	Portlock (1792 cited in Lee, 1920: 260)
7	Portlock (1792 cited in Lee, 1920: 249) Portlock (1792 cited in Lee, 1920: 251) Flinders (1814, II: 110)
8	Bligh & Portlock (1792 cited in Flinders, 1814, I: xxv) King (1837a: 758)
9	Bligh (1792 cited in Lee, 1920: 187)
10-12	Sweatman (1844-45 cited in Allen & Corris, 1977: 35)
16	Brierly (1849 cited in Moore, 1979: 9, 177) Brierly (1849 cited in Moore, 1979: 208)

Drinking water

Not surprisingly, numerous references exist on provisioning canoes with drinking water for voyaging. Freshwater was kept on board using two different types of water vessels – bamboo tubes and coconut shells. Of these two forms, most references are to bamboo tube containers (Flinders, 1814, II: 109; Haddon, 1908: 46, 49; King, 1837a: 659; Sweatman, 1844-45 cited in Allen & Corris,

1977: 35, 195), which were known as *kusu morap* (W-C) and *marep* (MM) (Haddon, 1912: 123). Melville’s lithograph of getting a canoe ready for voyaging on Erub shows a man passing a bamboo water tube to another man standing in the front section of the canoe (Sweatman, 1844-45 cited in Allen & Corris, 1977: 35-36) (Figure 8). The only known extant bamboo tube water container from the region was collected by Gunnar Landtman from

Mawatta on the New Guinea coast on the north side of Torres Strait (Figure 79).

Coconut shell water bottles were also taken on board canoes (Brierly, 1848 cited in Moore, 1979: 53; Haddon, 1908: 46, 49, 1912: 123; King, 1837a: 659). They usually came in pairs and were tied together with a piece of platted chord and were known as *kusulkuso* (W-C) and *ni sor* (MM) (Haddon, 1912: 86, 123). Each shell had a single hole with a stopper and could also feature carved designs (Figure 80). Two canoe images show paired coconut water containers either on the platform or hanging from storage crates (Figures 43, 47). These containers could also be hung over the side of the canoe and kept in the sea to keep them cool (Lawrie, 1970: 90).

FOOD

Various sources mention taking food onboard canoes for voyages. MacGillivray from the HMS *Rattlesnake* expedition of 1848-49 observed:

The Torres Strait Islanders are accustomed to dry the flesh to supply them with food during their voyages. The meat is cut into thin slices, boiled in a melon shell, stuck upon skewers, and dried in the sun. Prepared in this manner it will keep for several weeks, but requires a second cooking before being used, on account of its hardness and toughness. The fat which rises to the surface during the boiling is skimmed off and kept in joints of bamboo and turtles' bladders, being much prized for food; I have even seen the natives drink it off in its hot fluid state with as much gusto as ever alderman enjoyed his elaborately prepared turtle soup (MacGillivray, 1852, II: 23).



FIG. 79. Bamboo tube water container used on canoes, Mawatta, New Guinea. Collected by Gunnar Landtman 1910-12 (Photo: Sakari Kiuru 2009) (Courtesy: Collections of the National Museum of Finland/Museum of Cultures, VK4902:412). One end and the central node have a central hole to allow passage of water – Length = 73 cm (Landtman, 1933: 61; Lawrence, 1994: 435). Published in Lawrence (1994: Fig. 71).



FIG. 80. One of a pair of coconut shell water containers, possibly Mer (Courtesy: Horniman Museum and Gardens, 12.1371 © The Horniman Museum and Gardens, London) (see also Haddon, 1912: Pl. III, Fig. 1). Triangular designs represent *koima*, a distinctive body scarification motif of women, especially on Mer (Haddon, 1912: 22). Haddon collected a number of these water containers from Mer in 1898 (Moore, 1984: 63).

Similarly, Haddon (1890a: 339) noted that 'Smoke-dried turtle and dugong meat and fish were used as food on voyages' (see also Haddon, 1890a: 310-311). In some cases, turtle meat was sun-dried on canoes (Brierly, 1849 cited in Moore, 1979: 93). Coconuts were also taken stockpiled in canoes for voyages (Sweatman, 1844-45 in Allen & Corris, 1977: 35-36) (Figure 8) .

NAVIGATION

Little information is available on nineteenth century canoe navigation by Torres Strait Islanders. However, Haddon (1912: 205) noted that: 'Sailing by night was very rarely attempted, but the natives had definite ideas of steering by the stars when occasion arose'.

DISTANCES TRAVELLED

As canoes travelled between islands and from islands to the adjacent mainlands of New Guinea and Australia, voyaging could involve considerable distances (Table 7). Most known examples of sea voyages are contained within legendary stories of the region recorded by Haddon. Other observations of long-distance voyaging were made by European mariners along the east coast of Cape York Peninsula. Most of these voyages appear to have been undertaken by the Kulkalgal of central Torres Strait (see McNiven, 1998: 101-103) (Table 7). Seligmann (1904: 8) made note of a rare recording (source unknown) of a Torres Strait canoe in the Coral Sea: 'A Torres Is canoe

with living folk was picked up by an English sailing ship on eastern route to China some 200 miles [320 km] E of Torres.'

REASONS FOR CANOE TRAVEL

As the only means of sea travel available to Torres Strait Islanders prior to colonial influence in the late nineteenth century, canoes were central to the functioning of Torres Strait Islander society. Key reasons for canoe travel include food procurement (fishing and turtle and dugong hunting), raw material procurement (e.g. turtle-shell and clam shell), transport of items (e.g. water, food, rocks, corpses, and trade goods), and transport of people (settlement mobility, and trading and raiding). Canoe use was particularly important to the peoples of the western Strait where economic arrangements focused more on fishing, trading and raiding compared to gardening in the eastern Strait (Haddon, 1904: 289, 1912: 149, 205). Indeed, Haddon (1935: 347) went so far as to state that in the western Strait, the canoe was 'the mainstay of existence'.

Table 7. Examples of distances travelled in canoes.

Voyage	Return voyage distance	Reference
Mabuyag-Mua	34 km	Haddon (1904: 310-311)
Tudu-Geber	70 km	Haddon (1904: 354)
Naghir-Warraber	72 km	Haddon (1935: 69), MacGillivray (1852, II: 40)
Mer-Erub	96 km	Haddon (1908: 186)
Mabuyag-Dauan	134 km	Haddon (1904: 317)
Mabuyag-Boigu	146 km	Haddon (1904: 316, 1935: 42)
Yam-Mawatta	168 km	Haddon (1935: 81)
Mer-Auridh	168 km	Haddon (1912: 2, 1935: 85)
Mer-Fly River mouth	280 km	Haddon (1935: 348)
Mabuyag-Mer	408 km	Haddon (1935: 349)
Torres Strait-Restoration Is.	460 km	Stokes (1846, II: 256-257)
Central Torres Strait-Lizard Is.	1200 km	Laade (1969: 39, 1973: 159)

FOOD PROCUREMENT

Considerable time was spent on canoes, particularly in the western Strait, procuring food from the sea.

Hunting turtle & dugong

Canoes are central to hunting of turtles and dugongs in open waters surrounding islands and on far off reefs. Numerous records exist for Torres Strait Islanders using canoes to hunt turtles (Brierly, 1849 cited in Moore, 1979: 75, 168-169, 175-176, 190-193, 214; Haddon, 1890a: 350, 348-349, 397, 1904: 68-69, 92, 101, 149, 1908: 260, 1912: 160-165, 235, 1935: 153, 156; Lawrie, 1970: 121, 245; MacGillivray, 1852, II: 21-22) and dugongs (Haddon, 1890a: 351, 1904:

25, 1912: 166-168, 170-171; Lawrie, 1970: 113, 209; Ray, 1907: 257) (Figure 81). Canoes also assisted with dugong hunting using a platform with a harpooner (Figure 82). As with today, all historical records (European and traditional stories) indicate that turtle and dugong hunting was a male pursuit.

Fishing

Bligh and Portlock recorded reef fishing from canoes in 1792 (cited in Lee, 1920: 175, 249). Brierly (1849 cited in Moore, 1979: 122-123, 193) observed that both large and small canoes undertook fishing. Haddon reported that fishing was undertaken using lines and hooks 'from canoes and rocks' and 'commonly



FIG. 81. Turtle on beach after being harpooned from a canoe, Mabuyag. Tom holds the harpoon and Waria holds the rope. Photographed by Alfred Haddon, 1898 (Courtesy: CUMAA, N.23006.ACH2).

practiced' using a spear 'while on the reef at low tide or from canoes' (1890a: 348, see also Haddon, 1904: 18, 89, 1912: 155, 157). Whereas men undertook turtle and dugong hunting, both men and women undertook fishing, with Haddon (1890a: 381, 1912: 205) observing that: 'Small canoes were and are used by the women to go fishing on neighbouring reefs' (see also Haddon, 1912: 155, 158, 1935: 104-105). Such reef fishing could also take place at night with the aid of torches (Haddon, 1935: 151). Numerous traditional stories mention people fishing from canoes (e.g. Haddon, 1904: 18, 26, 45, 68-69, 103-105, 316, 1908: 54; Lawrie, 1970: 30-32, 111).

Crayfishing

Diving from canoes to procure crayfish in deeper waters is a well-documented traditional activity across various parts of Torres Strait – western Strait (Haddon, 1904: 18, 68, 95, 114) and eastern Strait (Haddon, 1935: 154) (see also Haddon, 1912: 154).

RAW MATERIAL PROCUREMENT

A number of non-subsistence items were procured from the sea and required the assistance of a canoe to access deeper waters.

Shells

Large cone shells used to make the highly-prized *wauri/waiwi* arm-shells and large pearl shells used to make highly-prized chest pendants were often procured by diving from canoes (Haddon, 1904: 271, 1908: 218, 1912: 154, see also Haddon, 1935: 286). Similarly, giant clam shells (*Tridacna gigas*) used as water containers in the Central Islands (d'Urville, 1840 cited in Rosenman, 1987: 549) can weigh more than 100-200 kg and would have required the services of a canoe to ferry such heavy items from deeper waters on reefs to the shore.

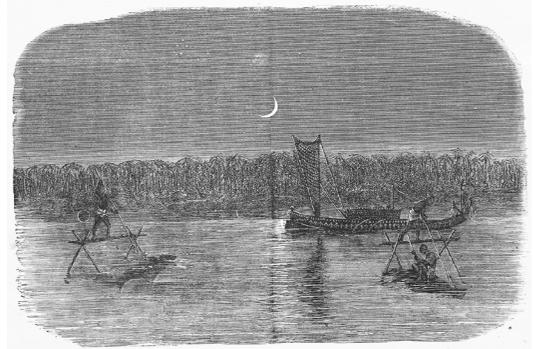


FIG. 82. Dugong hunting using platforms (*nat*) supporting a harpooner and with a canoe nearby to assist with the recovery and transport of harpooned dugongs back to shore (from Gill, 1876: 196). While Haddon (1912: 168) suggests this image is 'somewhat fanciful', it does convey the relationship between *nat* and canoe.

Turtleshell

Sweatman (1844-45 cited in Allen & Corris, 1977: 36) observed Eastern Islanders down the eastern side of Cape York Peninsula procuring turtleshell (Hawksbill turtle, *Eretmochelys imbricata*) with one canoe alone containing 'nearly a hundred weight [50kg]'. Turtleshell was used to manufacture masks and as a trade item with European mariners passing through Torres Strait (McNiven, 2001).

Stone

Landtman (1927: 34) was informed by people of Mawatta on the New Guinea coast opposite Torres Strait in 1910-12 that:

the Torres Strait Islanders obtained the stones out of which axes (or adzes) and club-heads were made principally from the bottom of the sea, by diving. The diver had a long rope attached underneath one shoulder, by which his companions in the canoe helped him up to the surface when loaded with heavy stone. If the stone

brought up by him seemed suitable to be shaped into an axe or club-head, he put it into the canoe, otherwise it was dropped back into the sea (see also Landtman, 1933: 45).

TRANSPORT OF ITEMS

Using canoes to move items between islands and between islands and the adjacent mainlands of Australia and New Guinea was a common occurrence in the past, as it remains today with the use of dinghies and light aircraft.

Water

During the dry season the drinking water supplies on some islands would be exhausted. While it is likely that under such circumstances short-term movement to another island was undertaken, in some situations relocation was not an option and water was imported. Traditional stories recount using canoes to ferry drinking water to Dauan and Ugar (Lawrie 1970: 136, 276). In 1873, Lt. Connor reported that drinking water was 'brought in long bamboos' from Yama to Tudu (cited in Moresby, 1875: 3). Lawrie (1970: 276) mentions the movement of water from Ugar to nearby Zapker (Campbell Island).

Food

It is likely that food items moved between islands as part of gifting associated with canoe visitation trips. However, it is also clear that in some cases canoe trips were made to islands with the intention of obtaining specific food items, particularly plant foods, to take back home. For example, in October 1848, Brierly observed a 'large canoe' carrying 'some large baskets filled with a kind of yam, a red fruit like an unripe plum in appearance [*wongai* plum?], some cooked shellfish, and a large flat bean [mangrove

fruit?] ... and bundles of dried grass' (cited in Moore, 1979: 28). Such quantities of material, particularly the yams, suggest strongly the food items were being transported and not used simply for onboard consumption. Similarly, in November 1849, Brierly (cited in Moore, 1979: 110) observed the return of a canoe from Mt. Adolphus Island to Muralag with 'a considerable number of turtle eggs and a number of a kind of yam got from the ridges of Mount Adolphus. ... The eggs they brought in the canoe today were those of the *oonow* or tortoiseshell turtle'. Haddon (1935: 385-386) recorded that once a year 'members' of the Sigai 'cult' from the Central and Eastern Islands visited Mer to 'obtain garden produce'. Lawrie (1970: 121, 276) mentions the movement of yams from Mua to Mabuyag, and food from Ugar to Zapker.

Rocks

While little ethnographic information is available on the source of large cobbles found associated with many ceremonial (e.g. *zogo*) sites across the Strait, it is clear that in many situations these cobbles have been imported from either other islands or the Australian mainland. The most obvious example of such stone imports is on sandy cays in the central Strait. In addition, ground oven (*amai*) heating stones on sandy cays also must have been imported aboard canoes (McNiven *et al.*, 2004c).

Bodies

Canoes were used in mortuary ceremonies in Torres Strait. For example, on Mer preparation of bodies for mummification and display began with movement of the corpse on a 'small canoe' to the outer reef where skin, intestines and brains were removed. The body was taken back to land on the canoe for further treatment (Haddon, 1908: 136, 1935: 323). In 1898 on

Mer, Haddon witnessed a solemn nocturnal funeral procession involving movement of a women's body in a canoe poled by her husband and brother along the shoreline from one village to another (Haddon, 1901: 93-94, 1908: 160-161). Sometime in the distant past, the body of Igowa, the headman of Masig, was transported to his grave site using a canoe (Lawrie, 1970: 246).

Trade goods

Torres Strait was criss-crossed by a complex network of trade and exchange linkages which resulted in a wide range of items moving between islands from one side of the Strait to another and between the New Guinea and Australian mainlands (Haddon, 1904: 293-297, 1908: 185-188; Lawrence, 1994; McNiven, 1998; Vanderwal, 2004).

TRANSPORT OF PEOPLE

People would move between islands and between islands and the adjacent mainlands for a broad range of social reasons, both friendly (e.g. attending ceremonies) and hostile (e.g. headhunting raids) (e.g. Haddon, 1890a: 344-345, 1904: 298-302, 1935: 385-386; Lawrie, 1970: 20, 162-163). Movement of people could also be associated with residential mobility, particularly in the central Straits where seasonal settlement patterns usually involved more than one island, e.g. Iama-Tudu (Haddon, 1901: 174, 1912: 2) and Naghir-Warraber (Haddon, 1935: 69; Macgillivray, 1852, I: 40) (see also Barham, 2000).

POST-CONTACT CHANGES

Rapid cultural changes took place across Torres Strait following introduction of commercial maritime industries in the 1860s (e.g. *bêche-de-mer* and pearlshelling), missionaries in 1871, and colonial

administration in 1872 (e.g. Beckett, 1987; Mullins, 1995). While such changes had little impact on the need and desire to use watercraft to access marine resources and travel between islands and the adjacent mainlands, the form of watercraft changed. During the 1870s and 1880s, the number of canoes operating across Torres Strait decreased dramatically, particularly as many men were involved in the commercial pearlshelling industry and European luggers and dinghies became the main form of marine transport (see McPhee, 2004). Yet historical records, particularly those of Alfred Haddon, make it clear that numerous canoes remained in use across the Strait during the late nineteenth century. Haddon's 1888-89 and 1898 recordings from Mabuyag indicate that a number of canoes essentially of traditional style remained in active service (Figures 20, 24-35). That this situation was also the case in the eastern Strait is indicated by the traditional canoe on Erub photographed in the 1880s (Figure 14) and a canoe of traditional style at Kirriri in the late nineteenth century (Figure 16).

Many canoes in active service during the late nineteenth century also incorporated a series of technological traits introduced with the missionaries and pearlshellers. First, sticks used to attach outrigger floats to the ends of outrigger booms on some canoes changed from straight to Y-shaped as a result of South Sea Islander influence (Figure 81). Haddon (1918) pointed out that this attachment technique was also employed in New Caledonia from whence a number of missionaries arrived on Mabuyag in the 1870s. Second, replacement of two outriggers with a single outrigger. Haddon (1935: 306, 312) observed this new outrigger arrangement on some Mabuyag canoes in 1888 and was informed that it was introduced by a resident of Mabuyag from Uea, Loyalty Islands (New Caledonia) (cf. Haddon, 1912: 210). Similarly, on Mer in

the eastern Strait, introduction of the single outrigger arrangement was 'attributed' to Mataika, a 'South sea man', in 1873 (Haddon, 1912: 211). Single outrigger floats were 'long and thin, in one case it was practically as long as the canoe' (Haddon, 1912: 211) (Figure 15). Third, many canoes changed to lugger-style triangular-shaped cloth sails and rigging arrangement with centrally-placed mast(s) as opposed to the traditional bow-placed masts with woven mat sails in both the eastern Strait (Figure 18) and western Strait (Figures 28-34, 80) (see also Figure 83). On Mer, Haddon (1912: 211) recorded that the new rigging arrangement comprised 'a mainsail, foresail and jib (the foresail still retains its old name of *narbet moder*, "elder brother sail", referring to the time when it was the more important sail, while the mainsail is

termed *keimer moder*, "younger brother sail"); there is no bowsprit'. Canoes with single outriggers and canvas sails were observed on Mer in 1882 (Finsch, 1914 cited in Haddon, 1937: 198). By 1888, 'there were only one or two canoes with mat sails among the Western Islanders and none either in the Murray Islands or Erub, and in 1898 none existed in Torres Straits' (Haddon, 1912: 212). During the first half of the twentieth century, canoe use decreased to the point that the northern islands of Saibai, Dauan and Boigu with close connections to the Papua New Guinea coast were the 'last to use canoes' (Done, 1987: 36, 41). In this connection, the canoe commissioned for display in the Museum of Australian in Canberra was manufactured on Saibai (Kaus, 2004).



FIG. 83. Canoe with lugger sail rigging, Mabuyag, 1915-1926 (Courtesy: John Done Collection, Queensland Museum). It is unknown if this canoe was a Mabuyag canoe or a canoe belonging to visitors from the Top Western Islands (e.g. Saibai or Boigu).

CONCLUSIONS

Torres Strait Islander canoes were remarkable marine craft in terms of scale, technological complexity, aesthetics and cultural significance. Thanks to the interest in these vessels by like-minded European mariners who sailed through the treacherous waters of Torres Strait, a remarkable textual, pictorial and material record exists of these canoes that spans the entire nineteenth century. Indeed, Torres Strait Islander canoes represent one of the best documented items of Indigenous material culture for any part of nineteenth century Australia. This paper represents the first attempt to pull together this extraordinary archive of information to showcase the splendour of these vessels. Equally significant, these canoes bring into sharp focus the complex and inter-connected nature of traditional maritime society across the various island communities of Torres Strait. The canoes were remarkable but so too were their crews who drew on thousands of years of maritime lore, heritage, knowledge and skills to successfully sail and navigate across what in some cases were hundreds of kilometres of open sea. Today we can see dimensions of this same maritime heritage and inheritance with Torres Strait Islanders, young and old, navigating dinghies across what are often treacherous and tempestuous seas riddled with reefs and what often seem, to outsiders at least, like chaotic mixings of tidal currents and winds. Torres Strait is a domain of ancestral seas criss-crossed with ancient voyaging pathways that continue to take mariners between islands and mainlands for a broad range of reasons, including obtaining supplies, meeting friends or attending sporting events, weddings or funerals. Torres Strait Islanders today, in their aluminium and fibreglass dinghies, share the same experiences of sea life as their ancestors did in wooden double-outrigger canoes a hundred, or thousand years ago.

They feel the saltwater spray on their faces, feel the thud of pounding waves through their bodies, and see the stars, islands, reefs and other markers that steer them closer to their island homes or distant destinations.

ACKNOWLEDGEMENTS

Firstly, my thanks to the many Torres Strait Islanders who have taken me on numerous dinghy journeys across the waters of Torres Strait. In calm weather such journeys are a joy but in rough seas joy is but a distant memory. My special thanks to the Cambridge University Museum of Archaeology and Anthropology, and in particular Anita Herle, Jocelyn Dudding and Rachel Hand, for permission and assistance accessing the Haddon collection of material culture and archival records relating to canoes. Thanks also to the Cambridge University Library for assistance with accessing the Haddon archive. Assistance was also kindly provided by Josie John, Ancient India and Iran Trust library, Cambridge. For providing permissions to publish images I thank Heli Lahdentausta and Eija-Maija Kotilainen, National Museum of Finland/Museum of Cultures, Helsinki, Finland; Kirsten Walker and Jo Dallosso, The Horniman Museum, London; Beth Lonergan and Lisa Joseph, National Library of Australia, Canberra; and Cheya Cootes, State Library of New South Wales. Liam Brady and Lynette Russell generously helped with preparation of figures. Helpful and stimulating comments on earlier drafts of this paper were kindly provided by Garrick Hitchcock and David Payne, and referees Adrian Horridge and David Lawrence.

LITERATURE CITED

- ACKERMAN, R. 1987. *J.G. Frazer: his life and work*. (Cambridge University Press: Cambridge).
- ALLEN, J. 1972. Nebira 4: an early Austronesian site in central Papua. *Archaeology and Physical Anthropology in Oceania* 7(2):92-124.
- ALLEN, J. & CORRIS, P. (eds). 1977. *The journal of John Sweatman: a nineteenth century surveying voyage in north Australia and Torres Strait*. (University of Queensland Press: St Lucia).
- BALME, J., DAVIDSON, I., MCDONALD, J., STERN, N. & VETH, P. 2009. Symbolic behaviour and the peopling of the southern arc route to Australia. *Quaternary International* 202(1-2):59-68.
- BALLARD, C., BRADLEY, R., MYHRE, L.N. & WILSON, M. 2003. The ship as symbol in the prehistory of Scandinavia and Southeast Asia. *World Archaeology* 35(3):385-403.
- BARHAM, A.J. 2000. Late Holocene maritime societies in the Torres Strait Islands, northern Australia – cultural arrival or cultural emergence? Pp. 223-314. In O'Connor, S. & Veth, P. (eds) *East of Wallace's Line: studies of past and present maritime cultures of the Indo-Pacific region*. Modern Quaternary Research in Southeast Asia Vol. 16. (A.A. Balkema: Rotterdam).
- BARHAM, A.J. & HARRIS, D.R. 1987. Archaeological and palaeoenvironmental investigations in western Torres Strait, northern Australia. Final report to the Research and Exploration Committee of the National Geographic Society on 'The Torres Strait Research Project'. (Unpubl.).
- BARKER, B. 2004. *The sea people*. *Terra Australis* 20. (Pandanus Books: Canberra).
- BEARDMORE, E. 1890. The natives of Mowat, Daudai, New Guinea. *The Journal of the Anthropological Institute of Great Britain and Ireland* 19:459-473.
- BEATON, J.M. 1985. Evidence for a coastal occupation time-lag at Princess Charlotte Bay (North Queensland) and implications for coastal colonisation and population growth theories for Aboriginal Australia. *Archaeology in Oceania* 20(1):1-20.
- BECKETT, J. 1972. The Torres Strait Islanders. Pp. 307-326. In Walker, D. (ed.) *Bridge and barrier: the natural and cultural history of Torres Strait*. (Australian National University Press: Canberra).
- BECKETT, J. 1987. *Torres Strait Islanders: custom and colonialism*. (Cambridge University Press: Cambridge).
- BEDNARIK, R.G. 2003. Seafaring in the Pleistocene. *Cambridge Archaeological Journal* 13(1):41-66.
- BRADY, L.M. 2005. Painting patterns: Torres Strait region rock-art, NE Australia. PhD dissertation, Monash University, Clayton, Australia. (Unpubl.).
- CHALMERS, J. 1903. Notes on the natives of Kiwai Island, Fly River, British New Guinea. *The Journal of the Anthropological Institute of Great Britain and Ireland* 33:117-124.
- CHESTER, H.H. 1870. Account of a visit to Warrior Island in September and October 1870 with a description of the pearl fishery on the Warrior Reef. Report accompanying a letter to the Colonial Secretary dated 20th October 1870 (QSA, Col/A151, 3425 of 1870).
- CRANSTONE, B.A.L. 1961. *Melanesia: a short ethnography*. (The Trustees of the British Museum: London).
- DAVID, B., ARAHO, N., KUASO, A., MOFFAT, I. & TAPPER, N. 2008. The Upihoi find: wrecked wooden Bevaia (Lagatoi) hulls of Epemeavo village, Gulf Province, Papua New Guinea. *Australian Archaeology* 66:1-14.
- DAVID, B., MCNIVEN, I., MITCHELL, R., ORR, M., HABERLE, S., BRADY, L. & CROUCH, J. 2004. Badu 15 and the Papuan-Austronesian settlement of Torres Strait. *Archaeology in Oceania* 39(4):65-78.
- DAVID, B., MCNIVEN, I.J., DENHAM, T. & DOP, J. 2005. Cultural heritage sites survey along the Kaiam-Goaribari section of the Papua New Guinea Gas Pipeline Route. Monash University Cultural Heritage Report Series 14. (Unpubl.).
- DAVID, B., MCNIVEN, I.J., RICHARDS, T., CONNAUGHTON, S., LEAVESLEY, M., BARKER, B. & ROWE, C. 2011. Lapita sites in the Central Province of mainland Papua New Guinea. *World Archaeology* 43(4):580-597.
- DAVIDSON, D.S. 1935. The chronology of Australian watercraft. *The Journal of the Polynesian Society* 44:1-16, 69-84, 137-52, 193-207.
- DONE, J.J.E. 1987. *Wings across the sea*. Compiled by B. Stevenson (daughter). (Boolarong: Mount Gravatt).
- DORAN, E. 1974. Outrigger ages. *The Journal of the Polynesian Society* 83(2):130-140.
- D'URVILLE, J.D. 1846. *Voyage au Pole Sud et dans l'Océanie*. Atlas pittoresque. Vol. 2. (Gide et J. Baudry: Paris).
- EDGE-PARTINGTON, J. & HEAPE, C. 1890-1898 (1996). *Ethnographic album of the Pacific islands*. Originally published as 'An Album of the Weapons, Tools, Ornaments, Articles of Dress

- of the Natives of the Pacific Islands', Series I-III. Second Edition Expanded and Edited by Bruce L. Miller. (SDI Publications: Bangkok).
- FINDLAY, E. 1998. *Arcadian quest: William Westall's Australian sketches*. (National Library of Australia: Canberra).
- FLINDERS, M. 1814. *A voyage to Terra Australis*. (G. & W. Nicol: London).
- FRASER, D. 1978. *Torres Strait sculpture: a study in Oceanic primitive art*. (Garland Publishing Inc.: New York).
- FUARY, M. 1991. In so many words: an ethnography of life and identity on Yam Island, Torres Strait. PhD thesis, Department of Anthropology and Archaeology, James Cook University, Townsville.
- GABEY, J. 1949. Notebook on the Torres Strait Islanders. Manuscript. Australian Institute of Aboriginal and Torres Strait Islander Studies, Canberra.
- GEIL, W.E. 1902. *Ocean and isle*. (W.M.T. Pater & Co.: Melbourne).
- GILL, W.W. 1876. *Life in the southern isles*. (The Religious Tract Society: London).
- GOLSON, J. 1972. Land connections, sea barriers and the relationship of Australian and New Guinea prehistory. Pp. 375-397. In Walker, D. (ed.) *Bridge and barrier: the natural and cultural history of Torres Strait*. (ANU Press: Canberra).
- HADDON, A.C. 1888. Rough notes on the zoology, anthropology and geology of Torres Straits III. Manuscript. Cambridge University Library, Cambridge.
- HADDON, A.C., 1890a. The ethnography of the western tribes of Torres Straits. *Journal of the Anthropological Institute of Great Britain and Ireland* 19:297-446.
- HADDON, A.C., 1890b. Notes on Mr Beardmore's paper. *Journal of the Anthropological Institute of Great Britain and Ireland* 19:466-468.
- HADDON, A.C. 1898. Field notebook: Mabuiag-Yam. Haddon Collection, Envelope 1053, Manuscripts Room, Cambridge University Library, Cambridge.
- HADDON, A.C. (ed) 1904. *Reports of the Cambridge Anthropological Expedition to Torres Straits. Vol. 5: sociology, magic and religion of the Western Islanders*. (Cambridge University Press: Cambridge).
- HADDON, A.C. (ed.) 1908. *Reports of the Cambridge Anthropological Expedition to Torres Straits. Vol. 6: sociology, magic and religion of the Eastern Islanders*. (Cambridge University Press: Cambridge).
- HADDON, A.C. (ed.) 1912. *Reports of the Cambridge Anthropological Expedition to Torres Straits. Vol. 4: arts and crafts*. (Cambridge University Press: Cambridge).
- HADDON, A.C. 1914. The outrigger canoes of Torres Straits and north Queensland. Pp. 609-634. In Quiggin, E.C. (ed.) *Essays and studies presented to William Ridgeway*. (Cambridge University Press: Cambridge).
- HADDON, A.C. 1918. An anomalous form of outrigger attachment in Torres Straits, and its distribution. *Man* 18:113-119.
- HADDON, A.C. (ed.) 1935. *Reports of the Cambridge Anthropological Expedition to Torres Straits. Vol. 1: general ethnography*. (Cambridge University Press: Cambridge).
- HADDON, A.C. 1937. *Canoes of Oceania. Volume II. The canoes of Melanesia, Queensland, and New Guinea*. Bernice P. Bishop Museum Special Publication 28.
- HADDON, A.C. & HORNEILL, J. 1936-38. *Canoes of Oceania*. Bernice P. Bishop Museum Special Publications 27-29. Reprinted as one volume 1975. (Bishop Museum Press: Honolulu, Hawai'i).
- HERLE, A. & PHILP, J. 1998. *Torres Strait Islanders: an exhibition marking the centenary of the 1898 Cambridge Anthropological Expedition*. (University of Cambridge Museum of Archaeology & Anthropology: Cambridge).
- HERLE, A. & ROUSE, S. (eds) 1998. *Cambridge and the Torres Strait: centenary essays on the 1898 Anthropological Expedition*. (Cambridge University Press: Cambridge).
- HORRIDGE, A. 1987. *Outrigger canoes of Bali and Madura, Indonesia*. Bishop Museum Special Publication 77. (Bishop Museum Press: Honolulu).
- HUNT, A. 1899. Ethnographical notes on the Murray Islands, Torres Straits. *Journal of the Anthropological Institute of Great Britain and Ireland* 28(1-2):5-19.
- IRWIN, G. 2010. Pacific voyaging and settlement: issues of biogeography and archaeology, canoe performance and computer simulation. Pp. 131-141. In Anderson, A., Barrett, J.H. & Boyle, K.V. (eds) *The global origins and development of seafaring*. McDonald Institute Monographs. (McDonald Institute for Archaeological Research: Cambridge).
- JUKES, J.B. 1847. *Narrative of the surveying voyage of H.M.S. Fly*. 2 vols. (T. & W. Boone: London).
- KAUS, D. 2004. Material culture collections and research in the Torres Strait. Pp. 93-104. In McNiven, I.J. & Quinnell, M. (eds) *Torres Strait archaeology and material culture*. Memoirs of the

- Queensland Museum, Cultural Heritage Series 3(1). (Queensland Museum: Brisbane).
- KING, P.P. 1837a. Voyage of the colonial schooner *Isabella*, - in search of the survivors of the Charles Eaton. *Nautical Magazine* 6:654-63, 753-60, 799-806.
- KING, P.P. 1837b. *A voyage to Torres Strait in search of the survivors of the ship Charles Eaton, which was wrecked upon the Barrier Reefs, in the month of August, 1834, in his Majesty's colonial schooner Isabella, C.M. Lewis, commander, arranged from journal and log book of the commander by authority of His Excellency Major-General Sir Richard Bourke K.C.B., Governor of New South Wales, etc., etc., etc.* (E.H. Stratham: Sydney).
- KUKLICK, H. 1998. Fieldworkers and physiologists. Pp. 158-180. In Herle, A. and Rouse, S. (eds) *Cambridge and the Torres Strait: centenary essays on the 1898 anthropological expedition*. (Cambridge University Press: Cambridge).
- LAADE, W. 1969. Ethnographic notes on the Murray Islanders, Torres Strait. *Zeitschrift für Ethnologie* 94:33-46.
- LAADE, W. 1973. Notes on the clans, economy, trade and traditional law of the Murray Islanders, Torres Straits. *Journal de la Societe des Oceanistes* 38:151-67.
- LAHDENTAUSTA, H., PARPOLA, M., VAINONEN, P. & VARJOLA, P. 2001. *Paradise and the people who lived there: Gunnar Landtman in Papua New Guinea 1910-1912*. (Museovirasto/National Board of Antiquities: Vammala).
- LANDTMAN, G. 1927 *The Kiwai Papuans of British New Guinea*. (Macmillan & Co.: London).
- LANDTMAN, G. 1933. *Ethnographical collection from the Kiwai District of British New Guinea*. (Commission of the Antell Collection: Helsinki).
- LAWRENCE, D. 1994. Customary exchange across Torres Strait. *Memoirs of the Queensland Museum* 34(2).
- LAWRENCE, D. 2010. *Gunnar Landtman in Papua: 1910 to 1912*. (ANU E Press: Canberra).
- LAWRIE, M., 1970. *Myths and legends of Torres Strait*. (University of Queensland Press: St. Lucia).
- LEE, I. 1920. *Captain Bligh's second voyage to the South Sea*. (Longmans, Green & Co.: London).
- LOURANDOS, H. 1985. Problems with the interpretation of late Holocene changes in Australian prehistory. *Archaeology in Oceania* 20:37-39.
- LOURANDOS, H. 1997. *Continent of hunter-gatherers: new perspectives in Australian prehistory*. (Cambridge University Press: Cambridge).
- MACAULAY, V., HILL, C., ACHILLI, A., RENGO, C., CLARKE, D., MEEHAN, W., BLACKBURN, J., SEMINO, O., SCOZZARI, R., CRUCIANI, F., TAHA, A., SHAARI, N., RAJA, J., ISMAIL, P., ZAINUDDIN, Z., GOODWIN, W., BULBECK, D., BANDELT, H.-J., OPPENHIEMER, S., TORRONI, A. & WILLIAMS, M. 2005. Single, rapid coastal settlement of Asia revealed by analysis of complete mitochondrial genomes. *Science* 308:1034-1036.
- MACGILLIVRAY, J. 1852. *Narrative of the voyage of H.M.S. Rattlesnake*. 2 vols. (T. & W. Boone: London).
- MCCARTHY, F.D. 1940. Aboriginal Australian material culture: causative factors in its composition. *Mankind* 2(8):241-69, 2(9):294-320.
- MCNIVEN, I.J. 1998. Enmity and amity: reconsidering stone-headed club (*gabagaba*) procurement and trade in Torres Strait. *Oceania* 69(2):94-115.
- MCNIVEN, I.J. 2001. Torres Strait Islanders and the maritime frontier in early colonial Australia. Pp. 175-97. In Russell, L. (ed.) *Colonial frontiers: Indigenous-European encounters in settler societies*. Studies in Imperialism Series. (Manchester University Press: Manchester).
- MCNIVEN, I.J. 2006a. Colonial diffusionism and the archaeology of external influences on Aboriginal culture. Pp. 85-106. In David, B., Barker, B. & McNiven, I.J. (eds) *The social archaeology of Indigenous societies*. (Aboriginal Studies Press: Canberra).
- MCNIVEN, I.J. 2006b. Spiritual pathways: ritualisation and fragmentation of Torres Strait canoes. Paper presented at TAG (Theoretical Archaeology Group) Conference, University of Exeter, England. (Unpubl.).
- MCNIVEN, I.J., BRADY, L.M. & BARHAM, A.J. 2009. Kabadul Kula and the antiquity of Torres Strait rock art. *Australian Archaeology* 69:29-40.
- MCNIVEN, I.J., DAVID, B., BRAYER, J. & BRADY, L. 2004a. Kabadul Kula rock-art site, Dauan Island, Torres Strait. Pp. 227-255. In McNiven, I.J. & Quinnell, M. (eds) *Torres Strait archaeology and material culture*. Memoirs of the Queensland Museum, Cultural Heritage Series 3(1). (Queensland Museum: Brisbane).
- MCNIVEN, I.J., VON GNIELINSKI, F. & QUINNELL, M. 2004b. Torres Strait and the origin of large stone axes from Kiwai Island, Fly River estuary (Papua New Guinea). Pp. 271-289. In McNiven, I.J. & Quinnell, M. (eds) *Torres Strait archaeology and material culture*. Memoirs of the Queensland Museum, Cultural Heritage Series 3(1). (Queensland Museum: Brisbane).
- MCNIVEN, I.J., CROUCH, J. & DAVID, M. 2004c. Tudu (Warrior Island), Torres Strait: historical

and archaeological survey. Report to the Tudu/Yama community, Torres Strait. Cultural Heritage Report Series 4, Programme for Australian Indigenous Archaeology, School of Geography & Environmental Science, Monash University, Clayton (Unpubl.).

MCNIVEN, I.J., DAVID, B., RICHARDS, T., APLIN, K., ASMUSSEN, B., MIALANES, J., LEAVESLEY, M., FAULKNER, P. & ULM, S. 2011. New direction in human colonisation of the Pacific: Lapita settlement of south coast New Guinea. *Australian Archaeology* 72:1-6.

MCNIVEN, I.J., DE MARIA, N., WEISLER, M. & LEWIS, T. 2014. Darumbal voyaging: intensifying use of central Queensland's Shoalwater Bay islands over the past 5000 years. *Archaeology in Oceania* 49(1):2-42.

MCNIVEN, I.J. DICKINSON, W.R., DAVID, B., WEISLER, M., VON GNIELINSKI, F., CARTER, M. & ZOPPI, U. 2006. Mask Cave: red-slipped pottery and the Australian-Papuan settlement of Zenadh Kes (Torres Strait). *Archaeology in Oceania* 41(2):49-81.

MCPHEE, E. 2004. Archaeology of the pearlshelling industry in Torres Strait. Pp. 363-377. In McNiven, I.J. & Quinnell, M. (eds) *Torres Strait archaeology and material culture*. Memoirs of the Queensland Museum, Cultural Heritage Series 3(1). (Queensland Museum: Brisbane).

MELVILLE, H.S. n.d. [1849]. *Sketches in Australia and the adjacent islands, selected from a number taken during the surveying voyage of H.M.S. 'Fly' and 'Bramble' under the command of Capt. F.P. Blackwood, R.N. during the Years 1842-46*. (Dickinson & Co: London).

METHVEN, R. 1854. *The log of a merchant officer: viewed with respect to the education of young officers and the youth of the merchant service*. (John Weale: London).

MONDRAGÓN, C. & TALAVÁN, M.L. 2008. Early European descriptions of Oceanic watercraft: Iberian sources and contexts. Pp 9-22. In Di Piazza, A. & Pearthree, E. (eds) *Canoes of the grand ocean*. BAR International Series 1802. (Archaeopress: Oxford).

MOORE, D.R., 1979. *Islanders and Aborigines at Cape York*. (Australian Institute of Aboriginal Studies: Canberra).

MOORE, D.R. 1984. *The Torres Strait collections of A.C. Haddon*. (British Museum Publications Ltd: London).

MOREBSY, J. 1875. Recent discoveries at the eastern end of New Guinea. *Journal of the Royal Geographical Society* 44:1-14.

MOREBSY, J. 1876. *Discoveries and surveys in New Guinea and the D'Entrecasteaux Islands*. (Murray: London).

MULLINS, S. 1995. *Torres Strait: a history of colonial occupation and culture contact 1864-1897*. (Central Queensland University Press: Rockhampton).

O'CONNOR, S. & VETH, P. 2000. The world's first mariners: savannah dwellers in an island continent. Pp. 99-137. In O'Connor, S. & Veth, P. (eds) *East of Wallace's Line: studies of past and present maritime cultures of the Indo-Pacific region*. Modern Quaternary Research in Southeast Asia Vol. 16. (A.A. Balkema: Rotterdam).

PHILP, J. 2001. *Past time: Torres Strait Islander material from the Haddon Collection, 1888-1905*. (National Museum of Australia: Canberra).

QUINNELL, M. & MILLER, I. 2011. Torres Strait Islander material culture collections in the Queensland Museum 1873-2011. In *The Torres Strait Islands*. Pp. 220-249. (Queensland Art Gallery / Gallery of Modern Art: Brisbane).

RAVEN, M.M., 1990. The point of no diminishing returns. Unpublished PhD thesis, University of California (Davis).

RAY, S.H. 1907. *Reports of the Cambridge Anthropological Expedition to Torres Straits. Vol. 3: linguistics*. (Cambridge University Press: Cambridge).

RILEY, E.B. 1925. *Among Papuan headhunters*. (Seeley, Service & Co. Ltd: London).

ROSENMAN, H. 1987. *An account in two volumes of the two voyages to the South Seas by Captain (Later Rear-Admiral) Jules S-C Dumont D'Urville*. (University of Hawaii Press: Honolulu).

ROWLAND, M.J. 1987. The distribution of Aboriginal watercraft on the east coast of Queensland. Implications for culture contact. *Australian Aboriginal Studies* 2, 1987:38-45.

ROWLAND, M.J. 2008. Colonization, environment and insularity: prehistoric island use in the Great Barrier Reef Province, Queensland, Australia. Pp. 85-104. In Conolly, J. & Campbell, M. (eds) *Comparative island archaeologies*. (British Archaeological Reports: Oxford).

[RUTHERFORD] 1834. Some account of the natives of Murray's Island in Torres Straits. *The United Services Journal*, Part 2, pp. 194-202.

SELIGMANN, C.G. 1898. [Journal re Borneo and Torres Straits]. Item 1/1/1 in Seligman Collection, LSE Archives, British Library of Political and Economic Science, London School of Economics.

SELIGMANN, C.G. 1904. New Guinea. Item 1/2/1 in Seligman Collection, LSE Archives, British Library of Political and Economic Science, London School of Economics.

SINGE, J. 1979 *The Torres Straits: people and history*. (University of Queensland Press: St. Lucia).

SINGE, J. 1993 *Among islands*. (Torres News: Thursday Island, Queensland).

STOKES, J.L. 1846. *Discoveries in Australia*. 2 vols. (T. and W. Boone: London).

URRY, J. 1998. Making sense of diversity and complexity: the ethnological context and consequences of the Torres Strait expedition and the Oceanic phase in British anthropology, 1890-1935. Pp. 201-233. In Herle, A. and Rouse, S (eds) *Cambridge and the Torres Strait: centenary essays on the 1898 anthropological expedition*. (Cambridge University Press: Cambridge).

VANDERWAL, R.L. 1973. Prehistoric studies in central coastal Papua. PhD dissertation, Australian National University, Canberra. (Unpubl.).

VANDERWAL, R. 2004. Early historical sources for the top western islands in the western Torres Strait exchange network. Pp. 257-270. In McNiven, I.J. & Quinnell, M. (eds) *Torres Strait archaeology and material culture*. Memoirs of the Queensland Museum, Cultural Heritage Series 3(1). (Queensland Museum: Brisbane).

WRIGHT, D. 2011. Mid Holocene maritime economy in the western Torres Strait. *Archaeology in Oceania* 46(1):23-27.

CONTENTS

Part 1:

- MCNIVEN, I.J. & HITCHCOCK, G.**
Introduction: Goemulgaw Lagal iii-x
- FELL, D.G. & STANTON, D.J**
The vegetation and flora of Mabuyag, Torres Strait, Queensland 1-33
- WATSON, J.J. & HITCHCOCK, G.**
The terrestrial vertebrate fauna of Mabuyag (Mabuyag Island) and adjacent islands, far north Queensland, Australia 35-54
- VON GNIELINSKI, F.**
The geology of the Mabuyag Island Group and its part in the geological evolution of Torres Strait 55-78
- HITCHCOCK, G., MCNIVEN, I.J., WHAP, T., & THE PULU IPA COMMITTEE**
Managing a sacred islet: Pulu Indigenous Protected Area, Torres Strait, Queensland 79-98
- PHILP, J.**
KRAR: Nineteenth century turtle-shell masks from Mabuyag collected by Samuel McFarlane 99-125
- MCNIVEN, I.J.**
Canoes of Mabuyag and Torres Strait 127-207
- SHNUKAL, A.**
Nikolai Nikolaevich Miklouho-Maclay's five days on Mabuyag in 1880 209-219
- HOWES, H.**
Between wealth and poverty: Otto Finsch on Mabuyag, 1881 221-251
- HERLE, A., PHILP, J. & DUDDING, J.**
Reactivating visual histories: Haddon's photographs from Mabuyag 1888, 1898 253-288
- FITZPATRICK, J.**
Eight decades on an Island 289-303
- NEUENFELDT, K.**
'Sweet sounds of this place': contemporary recordings and socio-cultural uses of Mabuyag music 305-321
- MITCHELL, R.**
Ngalmun Lagaw Yangukudu: the language of our homeland 323-446