

VOLUME 3
PART 1

MEMOIRS OF THE
QUEENSLAND MUSEUM
CULTURAL HERITAGE SERIES

BRISBANE
21 JUNE 2004

© Queensland Museum

PO Box 3300, South Brisbane 4101, Australia
Phone 06 7 3840 7555
Fax 06 7 3846 1226
Email qmlib@qm.qld.gov.au
Website www.qmuseum.qld.gov.au

National Library of Australia card number
ISSN 1440-4788

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 Director. Copies of the journal can be purchased from the Queensland Museum Shop.

A Guide to Authors is displayed at the Queensland Museum web site www.qmuseum.qld.gov.au/resources/resourcewelcome.html

A Queensland Government Project
Typeset at the Queensland Museum

KABADUL KULA: A ROCK-ART SITE ON DAUAN ISLAND, TORRES STRAIT

IAN J. MCNIVEN, BRUNO DAVID, LIAM BRADY AND JOHN BRAYER

McNiven I.J., David, B., Brady, L. & Brayer, J. 2004 06 21: Kabadul Kula rock-art site, Dauan Island, Torres Strait. *Memoirs of the Queensland Museum, Cultural Heritage Series* 3(1): 227-255. Brisbane. ISSN 1440-4788.

This paper presents the first systematic recording of a rock-art site in Torres Strait. The site is known as Kabadul Kula and is located on Dauan Island in the Top Western Islands of the Strait adjacent to the Papua New Guinea coast. Kiwai raiders from Papua painted the site prior to killing and beheading a number of Dauan Islanders according to local oral history. This associated story is consistent with ethnographically documented ritual preparations by Kiwai warriors for headhunting raids. Kabadul Kula was recorded by digital and conventional (film) photography and selected tracings. Computer enhancement of digital images of faded and nearly effaced paintings revealed images unrecognisable to the naked eye. 44 paintings represented by anthropomorphs, marine animals, canoes and non-figurative motifs were recorded. Most significant is a unique painting of a dancer wearing a fish headdress similar to headdresses made from panels of turtleshell in the 19th Century. Differential weathering and variations in the form of paintings across the site suggest a number of painting episodes. The age of the earliest paintings at the site is unknown. Rainfall runoff and termite nest growth continues to damage the paintings. Kabadul Kula is a 'special place' in the cultural landscape of Dauan Islanders. □ *Rock-art, digital enhancement, Dauan Island, Kiwai, Torres Strait.*

Ian J. McNiven (e-mail: Ian.McNiven@arts.monash.edu.au), Bruno David & Liam Brady, School of Geography & Environmental Science, Monash University, Clayton, Victoria, 3800, Australia; John Brayer, Department of Computer Science, University of New Mexico, Albuquerque, NM, 87131-1386, USA.; received 3 June 2001.

Torres Strait has a visually spectacular cultural heritage, as revealed by its elaborate dance paraphernalia and its internationally recognised prize-winning artists such as Dennis Nona and Alick Tipoti (Mosby & Robinson, 1998). While museums with Torres Strait material culture collected by 19th Century mariners and anthropologists such as Alfred Haddon are a tacit acknowledgement of the international interest in this rich artistic heritage, understanding its historical roots is more difficult. Perhaps the best way to understand early Torres Strait Islander artistic traditions before historical records were made is through researching the region's abundant but hitherto little publicised rock-art heritage. We present the first systematic recording of a rock-art site in Torres Strait. The site is located on Dauan Island in the Top Western Islands and is known locally as Kabadul Kula (Fig. 1). It is the largest and most complex rock-art site known for Torres Strait and the best documented in terms of its Islander meanings and significance. Our work is part of a long-term project to document rock-art sites from across Torres Strait and to see if long-term developments in island politics and inter-island and island-mainland alliances and trade connections can be investigated via temporal

variations in the geographical spread of artistic conventions. This research requires detailed recordings of rock-art sites and we begin this process with Kabadul Kula on Dauan Island.

DAUAN ROCK-ART PROJECT

The Dauan Rock-Art Project developed out of the Torres Strait 'Culture Site Documentation Project' (CSDP) 1996-1998 (McNiven & David, 2001; McNiven, Fitzpatrick & Cordell, this volume). A key finding of the CSDP was that many sites in Torres Strait are threatened by natural and human processes of destruction. In particular, rock-art sites were identified as requiring urgent attention, and recommendations were made that a detailed rock-art recording/management program should be started for the region. These recommendations were developed in part after one of us (IM) was taken to Kabadul Kula by Ibrahim Binawel of Dauan Island in September 1998. Various issues of recording and management were discussed on-site with particular attention paid to the impact of rain runoff, surface exfoliation and termite nest accretion upon preservation of the paintings. As a result of the desire of various senior Dauan community members to have the site recorded in

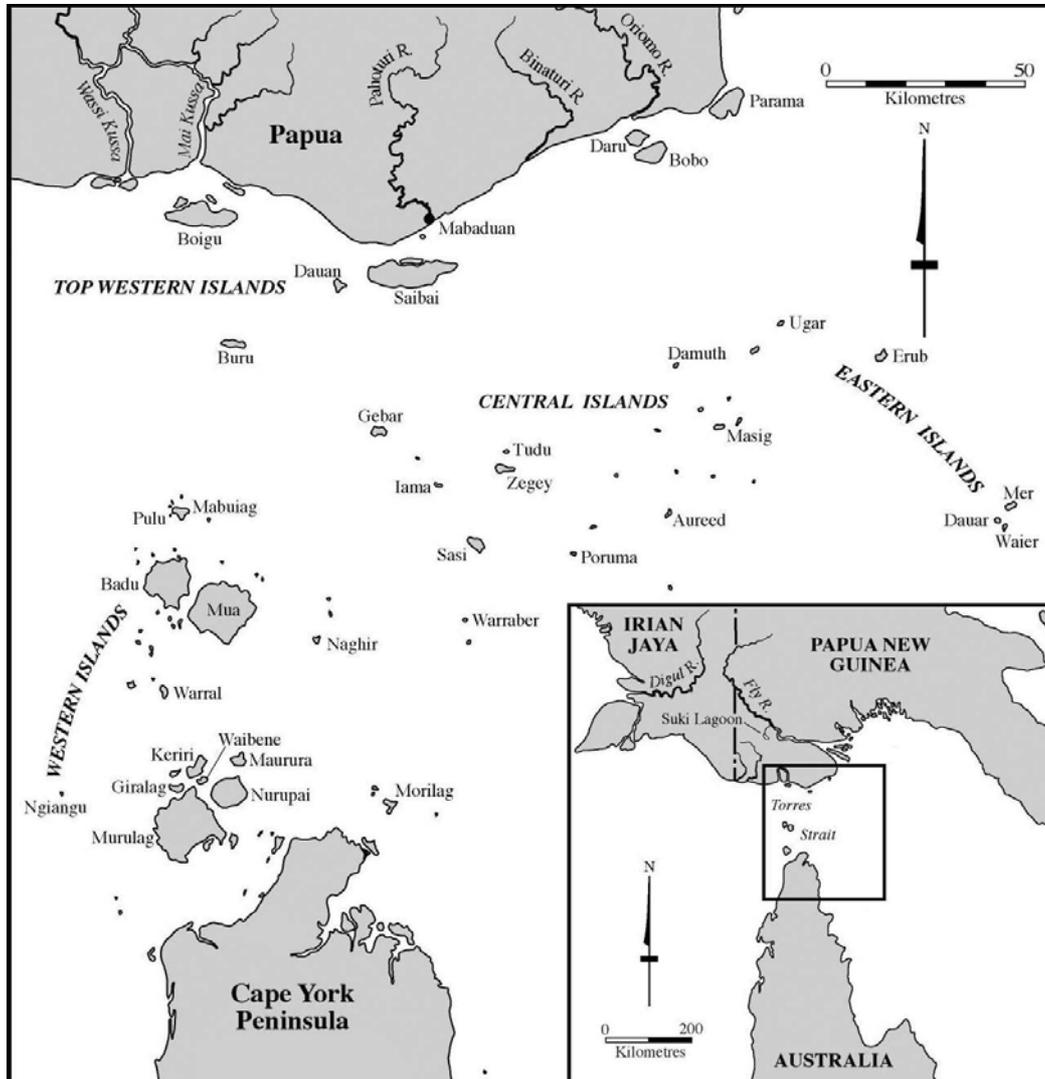


FIG. 1. Torres Strait.

detail and to have management options developed for the site, the Dauan Rock-Art Project was conceived and an AIATSIS grant successfully obtained in 1999. Fieldwork took place over 1 week in April 2000 (McNiven et al., 2001, 2002).

DAUAN ISLAND

Dauan Island is in N Torres Strait, 10km S of the PNG coast (Figs 1, 2). It consists of a granite boulder-field mountain fringed in various parts by a narrow zone of grassy flats and mangrove

forests. Today, as in the past, the main village site is located on the NE coast. An extensive flat area of fertile colluvial sediments that once supported extensive gardens backs the NW coast. One of the first recorded European visits to the island was in July 1871 by the London Missionary Society. This is an extremely important moment in the religious history of Dauan and every year festivities are held in its commemoration. Published 'information about the ethnography of this island is very meagre' (Haddon, 1935: 41-43). In terms of socio-cultural grouping, Dauan is



FIG. 2. Oblique aerial photo of Dauan Island, 2000 (looking NW).

linked to the muddy islands of Boigu to the west and Saibai to the east to form what is referred to today as the Top Western Islands of Torres Strait. Community members of all 3 islands speak Kala Kawaw Ya, a dialect of the western language of Torres Strait (Shnukal, 1998: 186). Today, most people speak Creole ('Broken') amongst themselves and English to outsiders. Headhunting was still a feature of life (and death) on Dauan until the end of the 19th Century, and raids by the Marind-Anim ('Tugeri') of West Papua were dreaded by all Top Western communities. However, not all interactions with Papuans were hostile and strong kinship and trade ties existed between many coastal Papuans and Top Western Islanders (Lawrence, 1994; McNiven, 1998). Despite an international boundary, many of these friendly ties continue to the present under the 'Torres Strait Treaty' (Joint Committee, 1979). In the past, Dauan Islanders obtained food principally from gardening (yams, sweet potatoes, taro, cassava, sugarcane, bananas and coconuts) and from fishing and hunting turtle and dugong (Laade, 1971). While hunting and fishing continues, gardening has dropped off in recent decades and most produce is now obtained from the local government-run IBIS grocery store. Today, the population of Dauan is around 200 people (House of Representatives, 1997: 129) and the Dauan Island Council administers local affairs.

KABADUL KULA

SITE DESCRIPTION. Kabadul Kula is on the NE coast of Dauan less than 50m from the shore and less than 5 minutes walk north of the Council Office (Fig. 3). The rock-art is located under the overhang of a large biotite granite boulder, which has a maximum length of 8m and maximum height of 5.5m. The paintings span the lower



FIG. 3. General view of Kabadul Kula (looking S).

sections of the entire N face of the boulder and the lower sections of the northern half of the W face of the boulder (Figs 4, 5). The painted rock walls face from 325° to 10°. The N face has an overhang up to 3.5m deep while the W face has an overhang of less than 0.5m. At the time of recording (late wet season/early dry season), the boulder was surrounded by 1-2m-high grass. A large tree is located at the S end of the boulder where other granite boulders are also to be found. The site is home to colonies of green ants and termites. The central sections of the N side of the boulder exhibit a large termite nest that is slowly advancing up the boulder wall over the paintings.

STORY OF SITE. Lawrie (1970: 143-147) provided a detailed narrative of the story associated with Kabadul Kula as told by Simona Naiama on Dauan in October 1968. In summary, Islander history recalls that a raiding party from Kiwai Island, located at the mouth of the Fly River off the PNG coast 140km to the NE, made the paintings at Kabadul Kula. The raid took place as a result of Dauan people eating a pig that belonged to their Papuan neighbours. In revenge, a message was sent to Kiwai for a group of Kupamal (fighting men) to attack Dauan. Landing secretly at Sigain Kup on the NE coast of Dauan, the Kupamal drew pictures with *parma* (red ochre) on the underside of a granite boulder overhang and tested their strength by trying to push a nearby boulder into the sea. The next morning, the Kiwai raiders attacked the village of Buli, killing many with their stone-headed clubs (*gabagaba*) and cutting off their victims' heads with bamboo knives (*upi*). The raiders managed their escape, but not before a number were killed by Dauan warriors. On their way home, the Kiwai raiders were again attacked, first by warriors from nearby Saibai Island and then by warriors from Mawata on the Papuan coast. Only one canoe-load of Kupamal made it back home.

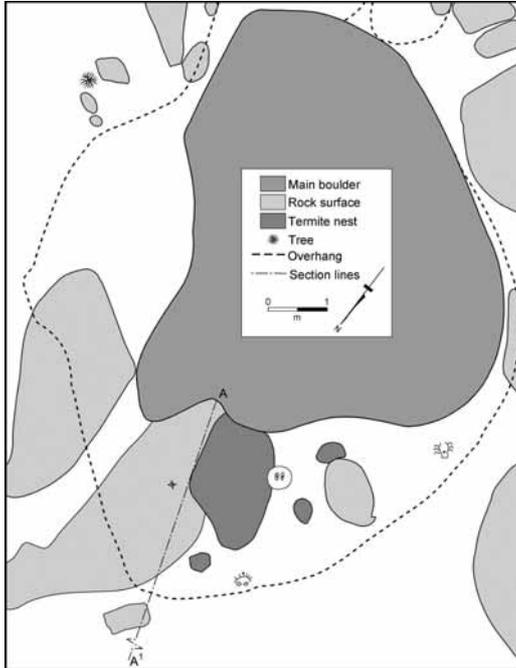


FIG. 4. Kabadul Kula site plan (the relative location of paintings #1 [navel star only], #5, #22 and #31 are shown on the underside of the northern overhang).

CULTURAL SIGNIFICANCE OF SITE. From our discussions with many members of the Dauan community, it is clear that Kabadul Kula is considered a 'special place' and has strong cultural significance for the entire Dauan community.

PREVIOUS RECORDING OF SITE. Beckett (1963: 52, 54, pl. D) provided the first published description of the site. He noted that the 'main group of drawings consists of a geometrical pattern and a number of anthropomorphic figures'. The geometric motifs are represented by 'two sets of concentric ellipses, confined within a circle approximately 18 inches in diameter' (Beckett, 1963: 54). He suggested that while these geometric motifs were 'closely similar to the *koima* shoulder scarification' documented by Haddon (1912a: 24-25), their significance was 'obscure'. The 'grotesque' figure of what 'appears to be a female' human was thought by Beckett to be 'a representation of the mythical *dogai*' which he recorded as a 'harmless, comical figure' that was 'not the centre of any cult activity' (1963: 52, 54). In terms of the site's meanings to the local

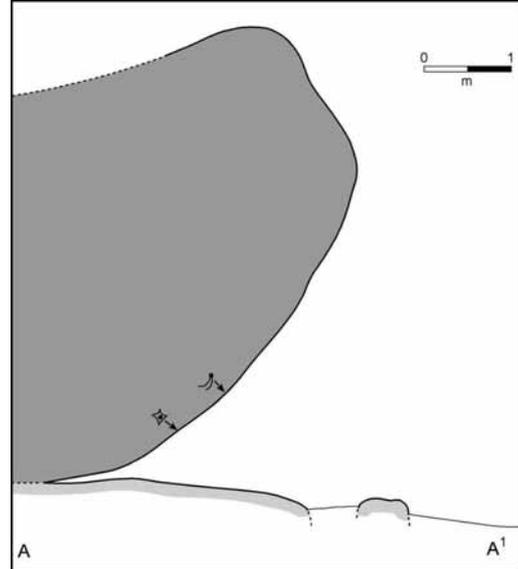


FIG. 5. Kabadul Kula cross-section (relative location of the right ear tip and navel star of painting #1 shown).

community, Beckett (1963: 54) could not 'discover any traditions concerning its origin'.

In addition to recording the story of Kabadul Kula, Lawrie (1970) provided 2 colour photographs of the site. Laade (1971: xxi, pl. 2a) provided a black and white photograph of the '*dogai*' painting at Kabadul Kula. He referred to the site as 'Kupamau Parma Kula' (pl. 2a, map 4) [alt. Kupamau Parmal Kula] which translates as 'the Kupam person's [Kupamau] red-ochred [Parmal] stone/rock [Kula]', i.e. 'the stone/rock that has (a) Kupam person's red ochre on it' (Rod Mitchell, pers. comm.). Vanderwal (1973: 182) noted that 1 of the paintings is a figure 'suspected' to be a 'representation of the mythical *dogai*'.

RECORDING METHODOLOGY

DRAWING AND TRACING. A basic sketch plan showing the location of all paintings on the rock wall was made, numbering each painting from 1 to 44. This plan subsequently was fine-tuned by tracing photographs of paintings (Fig. 6). In addition, 2 paintings were traced directly from the rock wall onto clear plastic sheets (*dogai* [painting #1] & crayfish [painting #31]). These were then reduced by photocopy and digitally retraced for report and publication purposes.

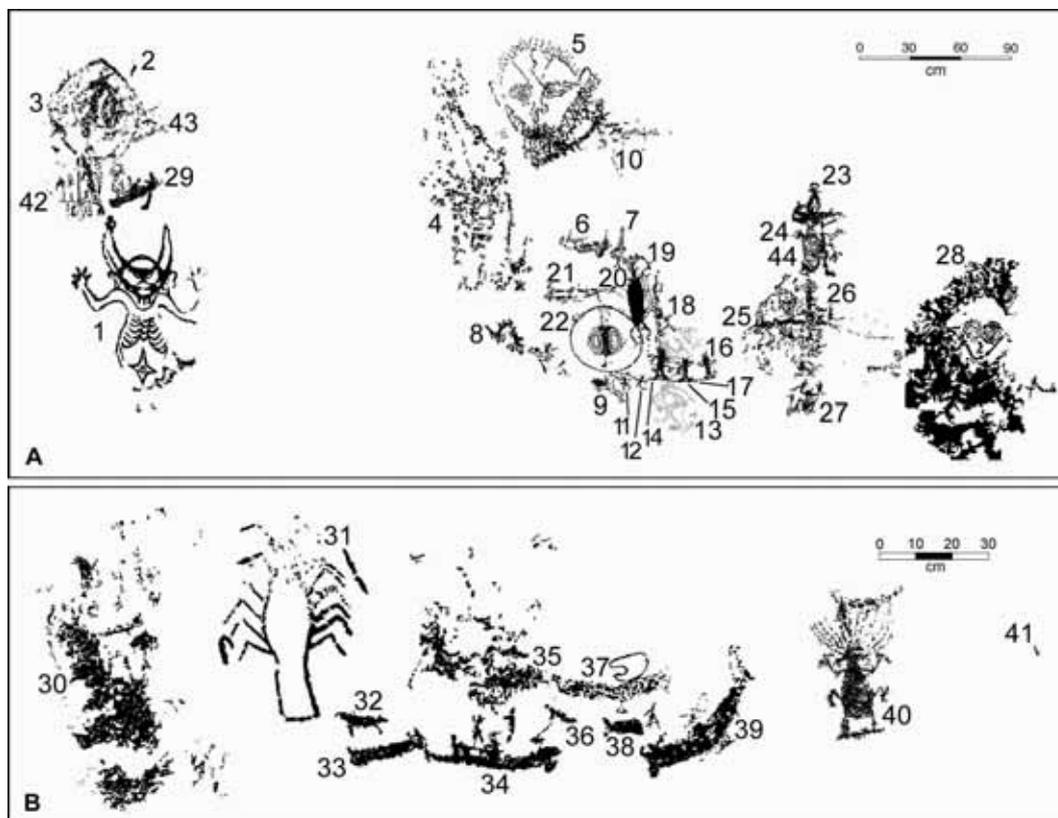


FIG. 6. Kabadul Kula rock-art showing relative location of numbered paintings, in two panels. A, 'main' panel. B, 'marine' panel.

DIGITAL PHOTOGRAPHY. Kabadul Kula was photographed systematically with 2 Nikon Coolpix 950 digital cameras, and selectively with conventional SLR cameras (slide film). First, general photographs of the entire site were taken. Second, the entire rock surface taking in the paintings was photographed in a series of 14 overlapping panels. These panel photographs provide contextual information on the relative location of paintings. Furthermore, they include areas in between observable paintings where no rock-art was readily apparent, but which may potentially reveal 'hidden' paintings once subject to computer enhancement. The third series of close-up photographs focused on individual and sets of neighbouring paintings (Fig. 7). Close-up photographs were taken both with and without standard IFRAO photography scales. To preclude damage to the paintings, the scales were never adhered to the rock wall, but were rather attached

to a long, thin grass stem and held up against the rock surface adjacent to the part of the rock wall targeted for photography. A total of 359 digital images was taken of Kabadul Kula and saved onto CD-Rom.

COMPUTER ENHANCEMENTS. Many paintings at the site are very faded, while some areas of rock wall reveal traces of red pigment suggestive of painting. To increase our ability to define the original form of paintings, all faded and nearly effaced paintings were enhanced using Adobe Photoshop 5.0. In all cases enhancement was systematically applied to the overall photo. Examples of enhanced images appear in McNiven et al. (2000), while a detailed discussion of the methods and theory of the digital enhancement of rock-art is provided by David et al. (2001).



FIG. 7. Recording Kabadul Kula in April 2000 (left: Garrick Hitchcock; center: Bruno David; right: Ian McNiven).

EXECUTION OF PAINTINGS

PIGMENTS. All of the paintings have been made using a red pigment that most likely is an inorganic, earth ochre. Variations in the darkness of the red colouring appear to result largely, if not entirely, from variations in the thickness of applied paint and degrees of fading (weathering).

APPLICATION TECHNIQUE. All paintings appear to have been applied with a brush. The thinness of some lines indicates that some brushes were very narrow. No evidence of dry pigment drawing or wet pigment stenciling was observed. Paintings were done using an outline/linear or a solid infill technique. Thin lines were used to create the outline/linear motifs.

POTENTIAL OCHRE SOURCES. Deposits of red ochre (known as *parma* on Dauan) have been observed on Dauan by present day community members, and were sampled by us for a future Torres Strait pigment sourcing project. While it is

possible that the Kiwai raiders used local ochres to execute the paintings at Kabadul Kula, it is also possible that they brought with them their own supply of ochre given that Haddon (1912b: 388) identified Kiwai as an ochre source (McNiven & David, this volume).

MOTIFS. 44 paintings were identified at Kabadul Kula (Table 1). Of these, 18 (41%) are indeterminate — that is, the images are too faded to determine their forms, even after enhancement. The indeterminate pictures are not discussed below. Of the 26 (59%) determinate paintings, a range of anthropomorphs, zoomorphs, canoes and geometric designs have been identified. The shapes of 12 hitherto indeterminate paintings (27% of the painted corpus) were revealed by digital enhancement.

ANTHROPOMORPHS

DOGAI. A single representation of a *dogai* occurs at Kabadul Kula (painting #1). It is the

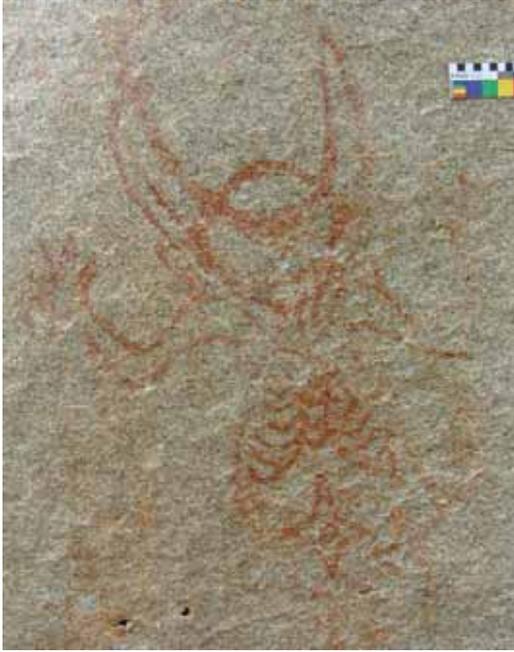


FIG. 8. *Dogai* (painting #1).

only known painting of a *dogai* in Torres Strait. The *dogai* painting is one of the most obvious at the site and is relatively clear in appearance (i.e., relatively unfaded) (Figs 8, 9). The painting exhibits the characteristic large ears of the *dogai* that it wraps around itself to sleep. It also exhibits ribs that may represent emaciation or an x-ray style of representation. A 4-pointed star with a circle in the middle is located in the navel region. The identification of the painting as a *dogai* was confirmed following discussions with senior members of the Dauan community and is consistent with oral information collected in the late 1960s by Laade (1971). *Dogai* are spiritual beings that invariably take the form of women and are 'ugly' and often with 'hideous features' (Haddon et al., 1904: 353; Laade, 1971: xxi). They 'lived in stones, or trees, or underground [sometimes in caves]. They could impersonate living women. Most *dogai* were evil and all were greatly feared' (Lawrie, 1970: 257; contra Beckett, 1963). They are a feature of the Western and Central Islands of Torres Strait. *Dogai* tend to be seen as mischievous and even murderous and numerous stories tell of men trying to harm or kill *dogai* for wrong doings (Haddon et al., 1904: 353-354; Lawrie, 1970: 65-67, 101-104, 218). A 'white *dogai*' on Gebar Island 40km S of Dauan



FIG. 9. *Dogai* (painting #1, based on tracing).

is 'tall and skinny, with a face like a flying-fox. She had long teeth and big ears; indeed, her ears were so big that when she lay down to sleep, she could use one as a mat and the other as a cover to keep her warm' (Lawrie, 1970: 257; Haddon et al., 1904: 354). Many people in Torres Strait speak of the Gebar *dogai* with trepidation. On Dauan, *dogai* 'were said to speak a confused gabble of the Island tongue' (Lawrie, 1970: 128).

Kiwai peoples on the N coast of Torres Strait also had knowledge and fear of *dogai*. Lyons (1921: 436) noted that the people from around the Binaturi and Oriomo Rivers have a 'monster called *Orio-goruhu* (literally, one who eats food in a raw state). As the following description reveals, this creature is akin to what Islanders call a *dogai*:

This creature is of the female sex, having big tusks and "ears as big as blankets," as my informants told me. She seeks her victims chiefly amongst the women of the tribe, whom she devours after tearing them to pieces. She makes her home amongst the rocks in the hills on the islands of Torres Strait, as well as in the caverns of the ridges to be found between the sea coast and the Fly River. She moves about quickly at night and sleeps during the day. I was informed that some years ago it was usual for old tribesmen to warn young men who were proceeding to

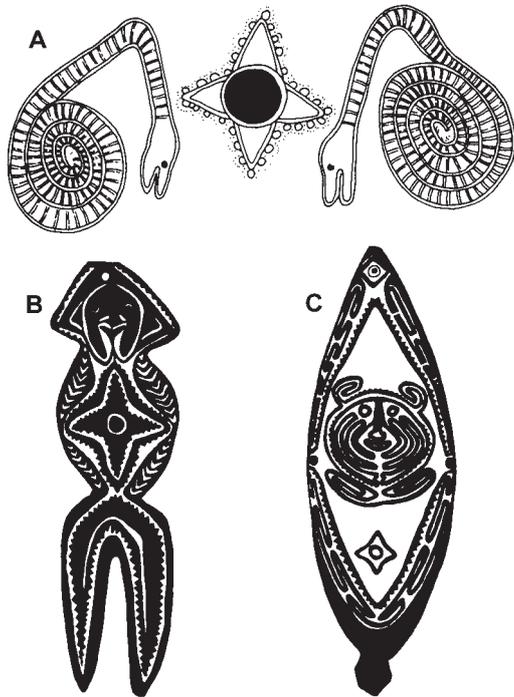


FIG. 10. Star shape, formally similar to the one found on the Kabadul Kula *dogai*, recorded on various late 19th and early 20th Century artifacts from Torres Strait and the Papuan Gulf. A, from bamboo tobacco pipe from Torres Strait – redrawn from Haddon & Rivers, 1904: fig. 20. B, flat wooden figure from the Papuan Gulf – redrawn from Holmes, 1902: pl. 41. C, flat wooden gope board from Papuan Gulf – redrawn from Lewis, 1931: pl. 15).

work in the Torres Strait fisheries “to look out along Orio-goruhu, plenty he stop along hills on the Queensland Islands” (of Torres Strait) (Lyons, 1921: 436).

The star-shape painted on the *dogai* at Kabadul Kula is reminiscent of a similar star shape recorded on a 19th Century bamboo tobacco pipe from Torres Strait (Haddon, 1912b: figs 324, 370; Haddon & Rivers, 1904: fig. 20) (Fig. 10A). No details are given as to the significance of this design. A similar 4-point star, known as *titui* in the local language, is found on a wooden comb from Mabuiag (Haddon, 1912b: 362). Four-point naval stars also feature in carvings from the Papuan Gulf to the NE (Fig. 10B,C). While the significance of this motif is not known, the carved wooden anthropomorph in Fig. 10B is described as a ‘rain god’ (Holmes, 1902: pl. 41).

The star-shape on the Kabadul Kula *dogai* is also reminiscent of similar designs on *gari* ritual

paraphernalia from the SE West Papuan coastal area of the Marind-Anim, to the immediate NW of Torres Strait (van Baal, 1966: pl. 9). The *gari* headdress in this region represents ‘the image of the sky, a big white arc about 3 metres in diameter’, although smaller oblong versions also exist (van Baal, 1966: 239). It is not uncommon for the morning star to be represented on Marind-Anim *gari* (van Baal, 1966: 357), an observation that may be relevant to the meaning behind the Dauan star depiction given the formal similarities of imagery and frequent contacts between the Marind-Anim and NW Torres Strait Islanders through headhunting raids as well as through trade. In this context, certain stars of Ursus Major were recognised as culturally significant on Mer in eastern Torres Strait:

The seven chief stars of the Bear form the body of the shark and two small stars which in our customary representation form part of the mouth of the bear ... were its eyes. Gemma was at the extremity of the ventral tail-fin. There is some doubt about the inclusion of Arcturus in the constellation. According to one account this star forms the extremity of the dorsal tail-fin [of the Mer Shark constellation, known as Beizam] but it also had a special name *Dogai* representing a being believed to have much influence on the weather in the north-east season by swinging the tail of the shark (Rivers, 1912: 219).

On Mabuiag, the stars Vega and Altair are known as *Dogai wauralaig* and *Dogai kulilaig*, respectively (Rivers, 1912: 221-222). In S Torres Strait, the Kaurareg recall that the 2 stars ‘represent the mythological figure *Dhogai*, a devil-women who “gathers every tucker from the sea and puts him in once place”’ (Southon et al., 1998: 225). Among the Islanders of Mer, the stars Vega and Altair are 2 brothers — *narbet* and *keimer*. Haddon (1908a: 271-272) noted, of the Eastern Islands of Torres Strait:

Dogai is a star that rises in the north-east. It is believed to be very powerful during the period when the north-east wind, *naiger*, blows (i.e. from October to the end of December), since, as they say, it destroys fish, more especially octopus, *arti*, on the fringing reef ...

When he is situated at the tail of the constellation *Beizam*, in January, he swings the shark’s tail and thus causes the very high tides, *erosia*, which occur at night, and sometimes they break down fences and houses along the beach ...

Mr Bruce gives the following free translation: “The star *Dogai* causes the high night-tides to come from the sea, and when the surges from the breakers strike the beach they spread out over the low ground above high-water mark, then they flow back and rejoin the sea, and once more they separate.”

Haddon (1908a: 272) related some of these understandings to similar but slightly different beliefs and ritual practices of the Western Islanders. The association of at least some *dogai*

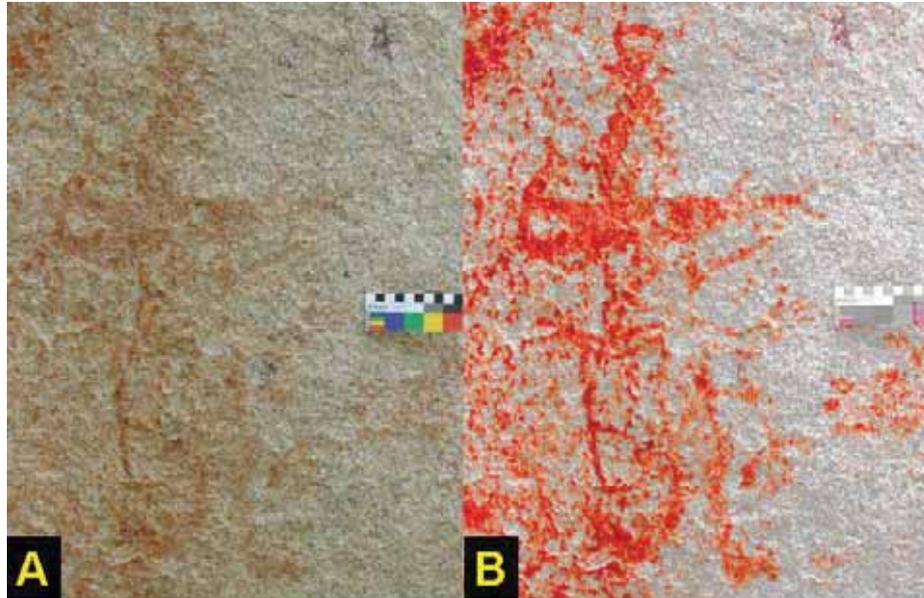


FIG. 11. Anthropomorph with headdress (paintings #23 & #24). A, photo before enhancement. B, photo after enhancement. C, tracing from enhanced photo.



FIG. 12. 'Man wearing the Iabur mask, drawn by Joani of Mabuiaig' in 1898 (excerpt from Haddon, 1912c: fig 257).

or *dogai*-related beliefs with specific stars and constellations is clear, and the Kabadul Kula *dogai* with star painting depicted in its navel area may well refer to such an association. Furthermore, the association between stars and weather is seen in Torres Strait and the Papuan Gulf ('rain god' - Fig. 10B). While the significance of this shared star-weather symbolism is unknown, it indicates strong cultural links between Torres Strait and the Papuan Gulf

ANTHROPOMORPH WITH HEADDRESS.

The form of paintings #23 and #24 only became apparent following digital enhancement (Fig. 11). Painting #24 is an anthropomorph with arms spread out to the sides (bent at elbows) and slightly splayed legs with large feet. Located immediately above its head is a representation of a fish headdress (painting #23), a characteristic of western Torres Strait ceremonial paraphernalia. These headdresses were made from panels of hawksbill turtleshell tied together with chord. Farr (1987: 17) noted that Torres Strait 'tortoise-shell sculpture is the most accomplished in the world' and detailed descriptions and photographs of most ethnographically known Torres Strait turtleshell masks are found in Fraser (1978). Haddon (1912c: 298-304) identified 5 major categories of turtleshell masks/headdresses in

Torres Strait:

- 1) small masks ('visors') which cover only the upper part of the face;
- 2) masks representing a human face;
- 3) masks representing a complete animal (with or without a human face);
- 4) masks representing an animal's head (with or without a human face);
- 5) masks with a box surmounted by an animal.

Fish headdresses fall into Haddon's third category of masks, which he divided into 2 subtypes. Subtype (a) headdresses represent large fish — either king fish or sharks (including shovel-nosed sharks). They often have a cylindrical feature located beneath the fish's body into which the head of the wearer is inserted. As such, the body of the fish sits on top of the wearer's head. Subtype (b) headdresses represent large fish (mostly king fish or sharks) surmounted either by a human face (sometimes with human arms) or a 'projecting human figure'. Haddon mentioned only 1 example of a headdress with a full human figure mount — the 'Iabur mask' from Mabuiaig. He obtained a representation of the mask (drawn by Joani) during his visit to Mabuiaig in 1898 (Fig. 12). For Haddon, the form of the fins and the long jaws of the fish were more suggestive of a 'gar-pike (Belonidae)' (also known as a long-tom). Another variant of subtype (b) is provided by a mask from Naghir Island (collected by Haddon in 1888), which exhibits a fish body/tail with the head of a crocodile. Some subtype (b) masks have a protruding cylinder for the wearer's head or simply an enlarged body area into which the wearer's own head is inserted. In the latter case, the body of the fish sits more on the wearer's shoulders (Fig. 12).

Joani's drawing is important for our interpretation of the painted headdress at Kabadul Kula. In terms of the representational style of the headdress, both the drawing and painting reveal a large fish with fins and open mouth (pointing to the left) whose length is approximately the same as that of the height of the wearer. The mouth in both fish images is held open by a stick and the nose of the fish is surmounted by a 'figure called Malu' on the drawing while the rock painting also exhibits a nose mount (albeit of indeterminate form). While the Iabur mask is surmounted by a male human figure 'named Iabur', the Kabadul Kula headdress is surmounted by a triangular object that is highly reminiscent of the triangular mount fringed by cassowary feathers on a 19th Century

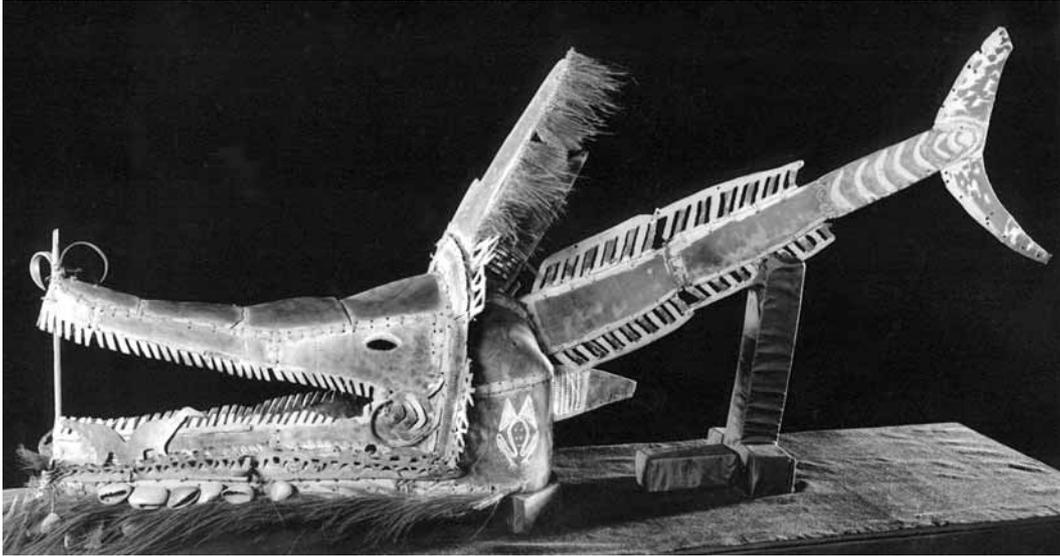


FIG. 13. Turtleshell headdress from Torres Strait, pre-1885 (Reproduced courtesy of Melbourne Museum).

turtleshell headdress from Torres Strait in the Melbourne Museum (Fig. 13).

The positioning of the painted headdress on top of the (nondescript) head of the painted figure is consistent with the cylindrical headmounts used on many fish headdresses. The 4-pronged tassel positioned on the right side of the painted figure under the arm is very similar to the 4-pronged tassels hanging from the tail of the Iabur mask drawing. These tassels may represent clusters of large *goa* nut shells (*Pangium edule*) that are used as dance rattles in Torres Strait (Haddon, 1912d: 272; Wilson, 1993: 126) and which adorn many 19th Century turtleshell masks from the region (Fraser, 1978).

A significant feature of Joani's drawing is the representational style of the wearer of the mask. The outstretched arms with bent elbows and open fingers and splayed legs with large feet and open toes is essentially identical to the style of the painted headdress wearer at Kabadul Kula. These similarities reveal a common representational style for the way Torres Strait Islanders, at least on Mabuiag and Dauan, graphically depicted men wearing turtleshell headdresses.

ANTHROPOMORPH WITH SHIELD?. A large anthropomorphic head (painting #5) (and possibly associated torso — partly represented by painting #10) with a large lens-shaped motif reminiscent of a shield (given its relative size and location in relation to the anthropomorph) (painting #4)

were identified following enhancement of an area of indeterminate lines and ochre patches (Fig. 14). The head exhibits short, spiked hair, large eyes with concentric circles, a nose whose outline extends up across the forehead, and a very large mouth with large jagged teeth. This style of facial/head representation has not been recorded for Torres Strait. If the lens-shaped object is a shield, it too would be unique — both in terms of graphic representation and the simple fact that shields have never been recorded as items of material culture for Torres Strait or the adjacent mainland coasts (e.g., Haddon, 1935; Wilson, 1993). These paintings may indicate the existence of shields in the region in the past and provide a rare insight into past material culture use in the region.

DANCING? ANTHROMORPHS. Five aligned anthropomorphs are represented across the lower central sections of the main painted panel on the N face of the boulder (paintings # 11, 12, 14, 15, & 16) (Figs 15, 16). The 2 figures on the left (paintings #11 & 12) are similar in style, stick-figures with out-stretched arms and legs. Painting #11 exhibits small protrusions from the waist that may represent body decoration (e.g., tassels) and brandishes a long, hooked object in one hand. Painting #12 may also be holding a long object in one hand and has 3 spikes emanating from the top of the head, possibly representing feather tufts. The 3 remaining figures have the base of their feet resting on a single thin line

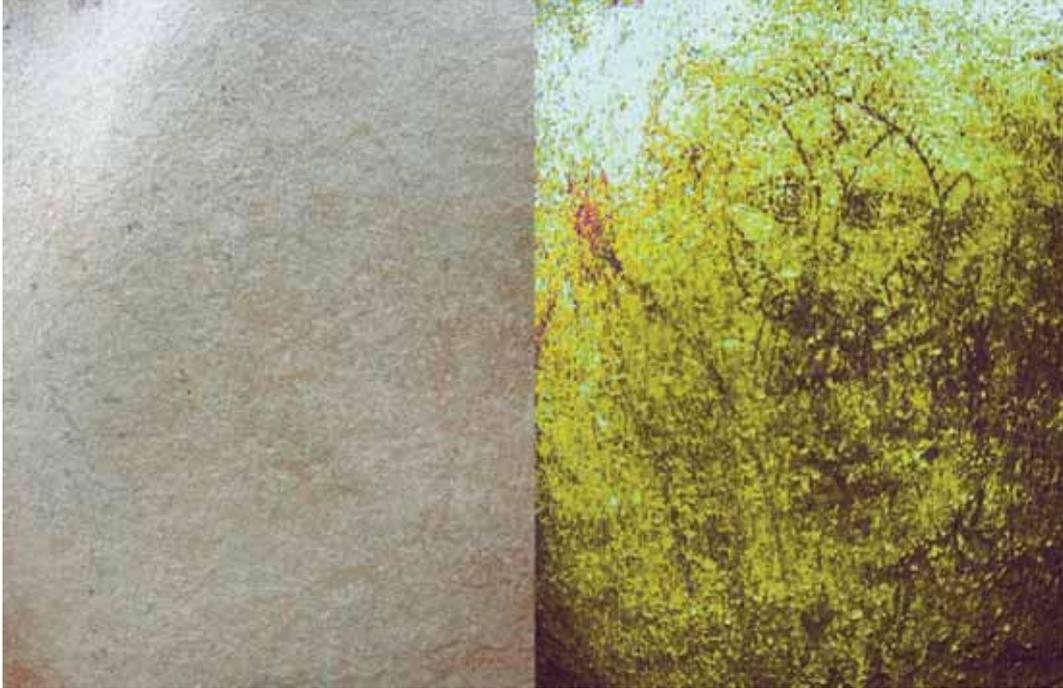


FIG. 14. Anthropomorph with shield? (paintings #4, #5 & #10) (Left, photo before enhancement. Right, photo after enhancement).

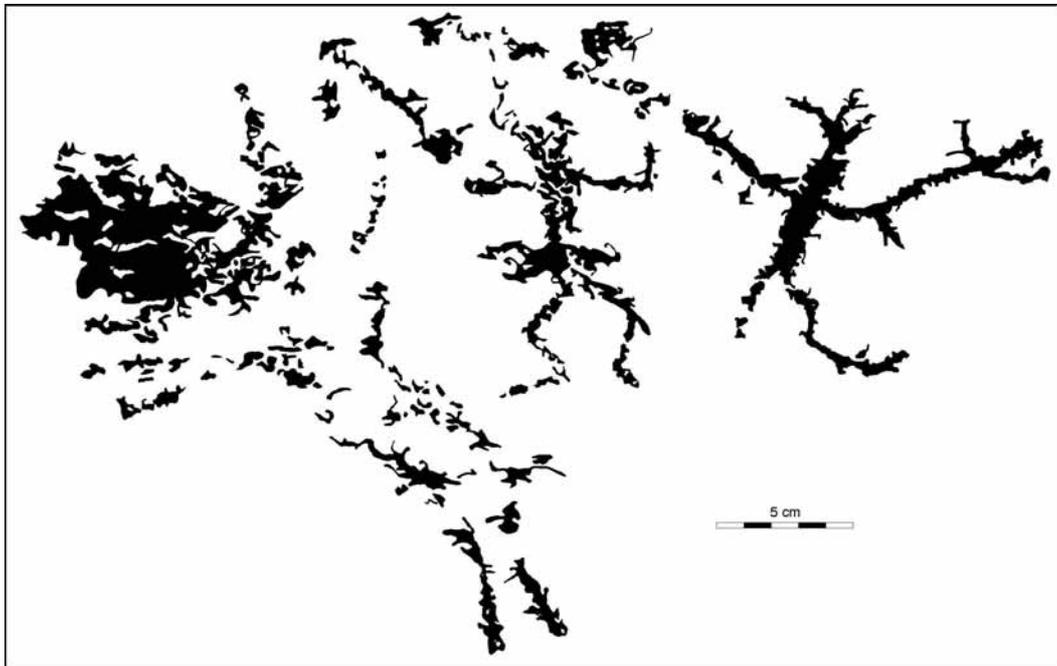


FIG. 15. Dancing? anthropomorphs (paintings #11 & #12).



FIG. 16. Dancing? anthropomorphs (paintings #14, #15 & #16, left to right, anthropomorphs; painting #17, thin red line; painting #13, underlying non-figurative design).

(painting #17). The left figure of the group (painting #14) is solid infill in form and appears to have arms spread to the sides with the elbows pointing upwards. Extending from the right side of the figure is a 3-pronged motif that is very similar to the 4-pronged motif extending from the right side of the figure with the fish headdress. As such, the projection may represent a *goa* nut dance rattle or some form of feather tassel. The two remaining figures (paintings # 15 & 16) on the right are similar in style and exhibit solid infill bodies, outstretched arms and legs, large triangular ears and large feet similar to that on the fish headdress figure. Painting #15 features 2 small projections from the top of the head that again may represent feather tufts. It is likely that all 5 figures represent dancers

associated with a ceremony given the alignment of their bodies, the sense of action shown by outstretched arms and legs, and body adornments (rattles? and/or feather tufts?).

Paintings #14-16 are aligned above a long, thin red line (painting #17) (Fig. 16). This design convention is also used in a composition drawn by 'Sunday of Mabuiag' and recorded by Haddon during the Cambridge Anthropological Expedition to Torres Straits (Herle & Philp, 1998: 44) (Fig. 17). A similar artistic convention of painting a sequence of anthropomorphs with small protrusions, aligned along a thin base line has also been recorded from Goaribari in the Aird River delta (290km NE of Dauan, and 125km NE of Kiwai) by Seligmann (1905) in the only known bark painting from S PNG (now in the British Museum) (Fig. 18). Basing his interpretations on a considerable knowledge of local practices rather than on oral information that directly relates to this painting, Seligmann (1905: 161) has this to say about the Goaribari sago frond bark painting:

The ten figures arranged in a series along one edge of the frond, within the straight line which runs the length of that edge, probably represent men. That the ten figures less regularly disposed towards the other edge of the frond also represent the male human figure seems clear from the fact that each figure, besides presenting the appropriate genitalia, wears at the waist behind what is almost certainly a dancing ornament. This is probably the well-known ornament made of cassowary feathers and mimicking a tail, which is common in the Fly delta and throughout the greater part of the western extremity of the possession [i.e., the western extremity of what was then known as British New Guinea, or Papua]. It may be guessed that the elongation of the head of each individual represents some feather headdress, so that probably the figures are dancing or moving in ceremonial procession, but it is certainly not clear that the objects in the hands of these ten figures are drums.

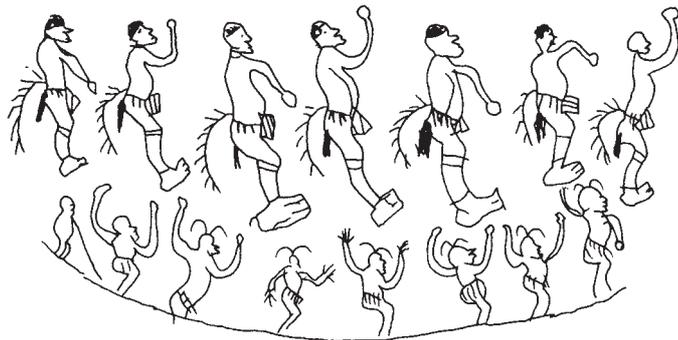


FIG. 17. Excerpt from a drawing by 'Sunday of Mabuiag' in 1898 of a compositions of dancers at Panai (on Mabuiag). Recorded by Haddon during the Cambridge Anthropological Expedition to Torres Straits (redrawn from photograph of original in Herle & Philp, 1998: 44).

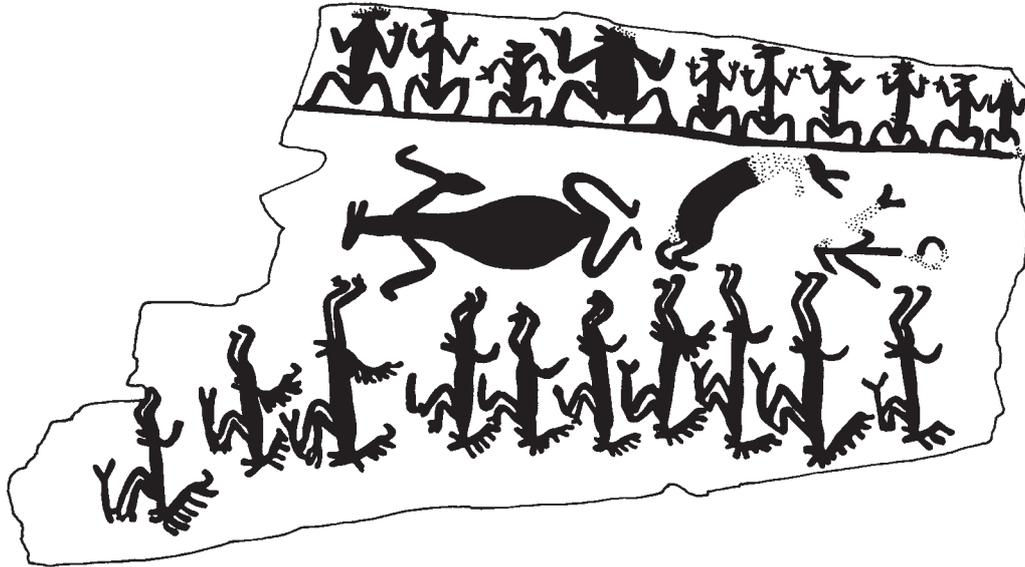


FIG. 18. Anthropomorphs painted on a sago frond, Goaribari (Aird River delta) (redrawn from photograph of original in Seligmann, 1905: pl. 50).

What is of interest here, as with the Haddon drawing from Mabuiag, is that common artistic conventions were followed in Dauan, Mabuiag and in SW PNG, from whence both raiding and trading parties to the Top Western Islands of Torres Strait are well documented historically.

OTHER ANTHROPOMORPHS. Painting #20 is the largest, near-complete anthropomorph observed at Kabadul Kula (Fig. 19). It is located in the center of the main painted panel on the N side of the boulder. It features a large solid-infill body with 2 splayed legs bent at the knees. The head is proportionately small and exhibits a series of lines extending from the top that may represent feather tufts. The anthropomorph does not reveal arms.

Painting #27 is a small and finely executed anthropomorph with arms outstretched above the head and legs in a bent, couched position to the sides (Fig. 20).

Painting #28 was only observed following digital enhancement (Fig. 21). It features a heart-shaped face with large concentric circle eyes, a nose and an indeterminate mouth. It may represent a mask rather than a face, although indeterminate painting below the face may represent the weathered remnants of its body.

ANIMALS

CRAYFISH. A single crayfish (*kiar*) is represented on the NW side of the boulder. It is life-size and clearly shows the tail, body, legs and antenna. The painting was recorded both by tracing (Fig. 22) and using enhanced digital photography (Fig. 23). A comparison of the traced and enhanced images reveals few differences in detail. This similarity is due to the high contrast between the paint and the background rock, making the painting highly visible to the naked eye. Crayfish paintings are rare in Torres Strait and have only been recorded at 2 other sites — on Pulu Islet (adjacent to Mabuiag Island) and Ngiangu (Booby Is.) (McNiven & David, this volume).

FISH?/DUGONG? Painting #38 is located on the NW side of the boulder. While not clear in Figure 24, close inspection of the painting reveals a bulbous creature with a 'fish' tail that, because it lacks fins, may be a dugong. Dugong is a prestige meat food for northern Aboriginal Australians and Torres Strait Islanders and considerable ritual activity is associated with their capture. Dugong are also clan totems for different island groups (Haddon, 1935). Dugong paintings are very rare in Torres Strait with only one previous recording at the Badane Site on Keriri (Hammond Island) (McNiven & David, this volume).



FIG. 19. Anthropomorph (painting #20) and concentric circles (painting #22).

INSECT? Painting #40 is a curious image located on the NW side of the boulder (Fig. 25). The form of the painting became clear only after computer enhancement. It features a triangular body with 2 multi-jointed arms/legs extending from each side and 2 other possible legs of straight form standing on a line. Approximately 13 lines (possibly dashed) emanate from the head area. The overall form of the image is strongly reminiscent of an insect; a designation consistent with the suggestion of 6 appendages, 4 of which are multi-jointed.

The only other site in Torres Strait where insect paintings have been suggested is Frenchman's Cave on Murulag (Prince of Wales Island) (McNiven & David, this volume). One motif is described as a centipede while a barred oval motif was described as representing an isopod based on stylistic similarities with a drawing of an isopod (in this case an ecto-parasite on sharks) by Gizu of Mabuag in 1898 (Haddon, 1912b: fig 307). Haddon (1912b: 349) notes that 'as far as I



FIG. 20. Anthropomorph (painting #27).

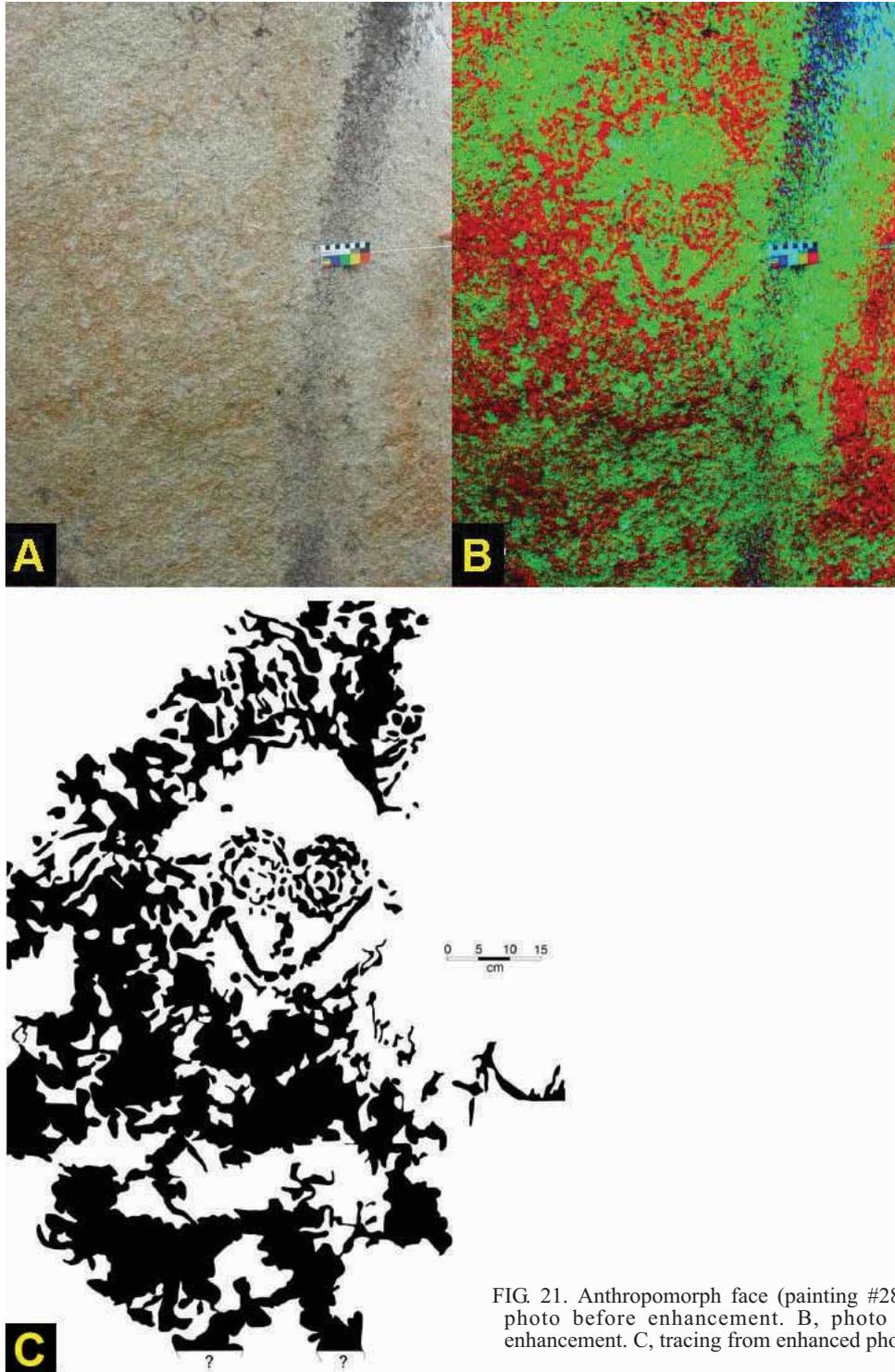


FIG. 21. Anthropomorph face (painting #28). A, photo before enhancement. B, photo after enhancement. C, tracing from enhanced photo.



FIG. 22. Crayfish, *kiar* (painting #31, based on tracing).

am aware the centipede ... is the only terrestrial invertebrate that is delineated' on material culture. Centipede motifs were recorded as cicatrices on Mer (Murray Island) and the adjacent New Guinea coast (Haddon, 1912a: 20, 29, figs 15 & 42) and as designs on spears called *omaiter* or *maid wap* 'employed in nefarious magic' (Haddon, 1908b: fig 37; 1912b: 349, figs 365 & 366). Insects were food in Torres Strait, such as the larvae and pupae of 'Longicorn beetle[s]' which were eaten raw or cooked in the Western Islands and male 'locusts' which were eaten raw on Mer on certain religious occasions (Haddon 1912e: 139; 1935: 175, 303).

OTHER PAINTINGS

CANOES. Painting #39 is extremely faded but retains a number of features consistent with a representation of a canoe (Fig. 24). Details on Torres Strait canoes — known as *gul* (Western Islands) and *nar* (Eastern Islands) — are provided by Haddon (1912f) and Haddon & Hornell (1937: 193-198) and features consistent with the painting at Kabadul Kula are as follows. First, the elongate form of the painting exhibits a relatively flat top and curved base as found on the dugout hull of Torres Strait canoes. Second, the projections on the ends of the hull are consistent



FIG. 23. Crayfish, *kiar* (painting #31). Left, photo before enhancement. Right, photo after enhancement.



FIG. 24. Fish?/Dugong? (painting #38, centre) and canoes? (paintings #37 and 39, top and bottom).

with adornments as Haddon & Hornell (1937: 197) note that the canoes were 'richly decorated fore and aft'. Paintings #29 and 34 are also extremely faded, and exhibit end projections and central features (cf. 'flags' and platform) such as those on canoes depicted by Haddon (1912f).

Painting #37 is reminiscent of a 'crab-claw' canoe with sail (see Fig. 24). Crab-claw canoes are not known ethnographically from Torres Strait, nor are they known from the Fly River mouth or from the NW where various forms of social interaction with Torres Strait Islanders are known. They are, however, well known from the ethnographically documented Hiri trade system of the Papuan Gulf region, over 200km to the east. This painting may indicate past trade connections between Torres Strait and the Papuan Gulf or at least Papuan Gulf cultural influences in Torres Strait.

HUT. Painting #3 is variously faded (Fig. 26). The upper, less faded part consists of 2 concentric circles, the center of the outer circle being slightly pointed at the top; the inner circle is more rounded with an infilled diagonal line through the middle. One concentric ellipse is present in, and on the right hand side of, the inner circle, akin to painting #22. No ellipse is noticeable on the left

hand side, possibly due to fading. The basal half of the painting consists of an open rectangle with a down-curved footing. Contained within this rectangle is what appears to be an anthropomorph. The overall image is reminiscent of a structure (hut?) with anthropomorph, an image with no known precedent in Pacific rock-art.

GEOMETRICS. Apart from a range of linear motifs that in many cases may represent the remnants of heavily weathered images, the most distinctive geometric painting at Kabadul Kula is the large concentric circle image forming painting #22 (Fig 27; see also Fig. 19). This painting features an outer circle and an inner circle that contains 2 concentric ellipses. The outer circle is bifurcated by a vertical line that may also bisect the inner circle, but solid infill makes this assessment impossible to discern. In terms of the significance of this distinctive motif, we find Beckett's (1963) cicatrice hypothesis compelling. A survey of the myriad of motifs found on Torres Strait material cultural and used as body adornment presented in Haddon's 6 volumes of the *Reports of the Cambridge Anthropological Expedition to Torres Straits* published between 1901 and 1935 reveals that the only motifs resembling the distinctive circle

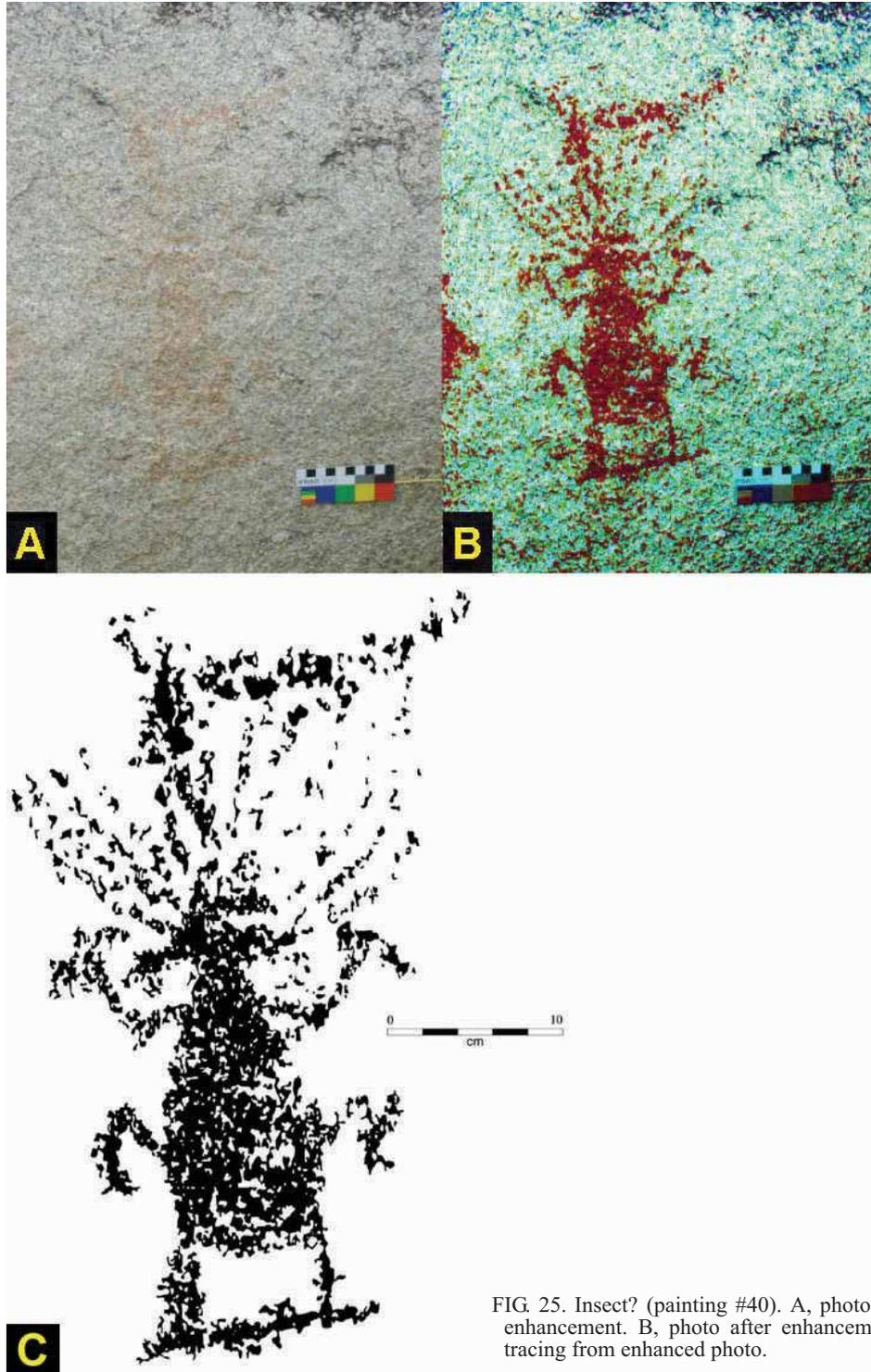


FIG. 25. Insect? (painting #40). A, photo before enhancement. B, photo after enhancement. C, tracing from enhanced photo.

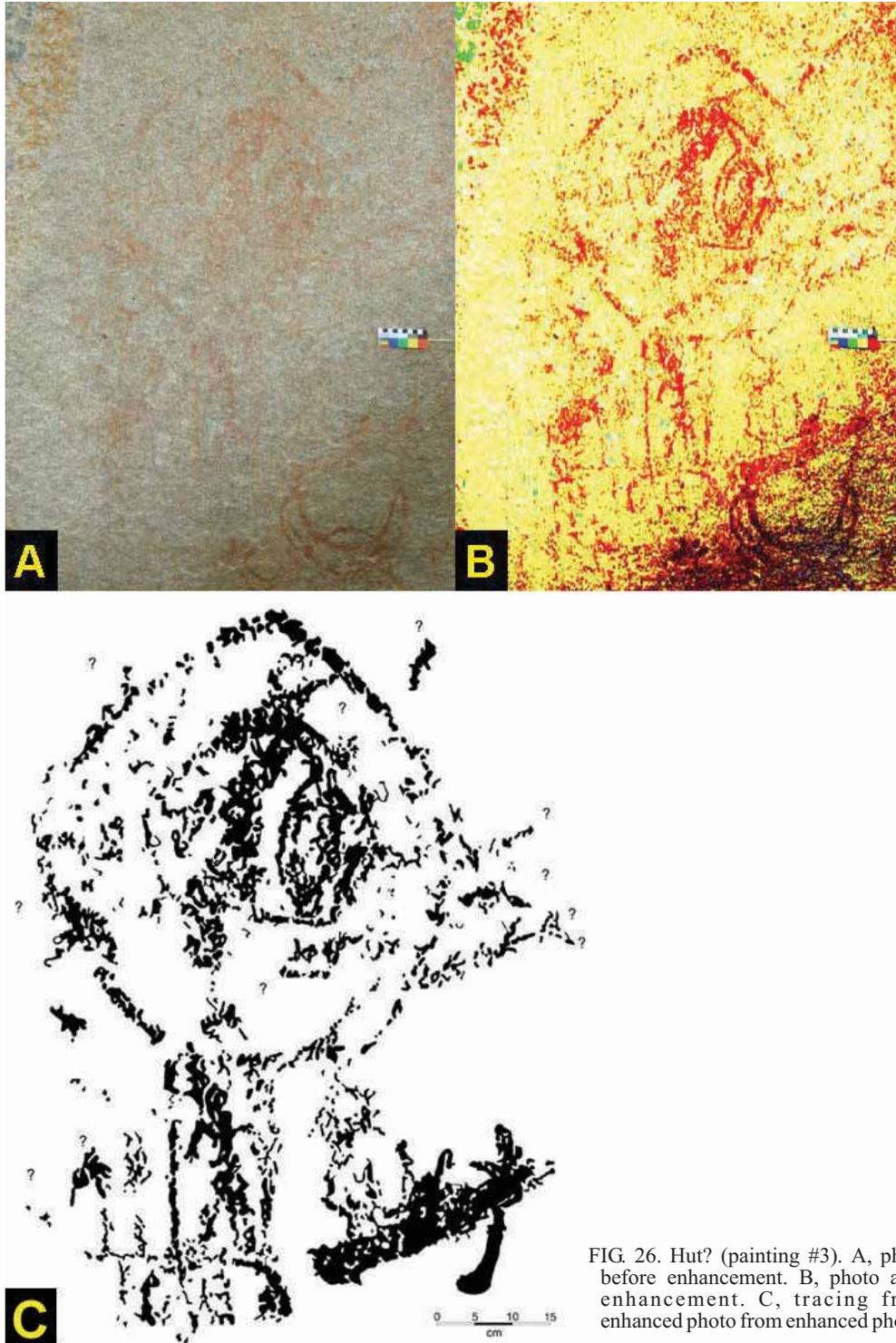


FIG. 26. Hut? (painting #3). A, photo before enhancement. B, photo after enhancement. C, tracing from enhanced photo from enhanced photo.



FIG. 27. Concentric circles (painting #22).

and ellipse motif of Kabadul Kula are those used as cicatrices on shoulders (Haddon, 1912a: 22-27). These scars were known as *koimai* (Western Islands) or *koima* (Eastern Islands), and were cut either on 1 or both shoulders of men. Haddon suggests that for Western Islanders the scars 'had no special significance' and that they were created if a man 'wanted to look "flash"'. Alternatively, Eastern Islanders described the scars as dance decoration and 'On festive occasions they painted it red or white'. During his 1888 visit to Torres Strait, Haddon failed to locate a single Western Islander with a *koimai* and saw only 3 Eastern Islanders (Mer Islanders) with *koima* (Fig. 28A-C). Unfortunately, Haddon failed to record the exact form of *koimai* of the Western Islanders but was informed that male Mabuig Islanders of the *Dangal* (dugong) and *Kaigas* (shovel-nosed shark) clans marked their shoulders with totem cicatrices. On Dauan, women's shoulder scars, while unlike any of the painting designs, utilise the form of a stylised nose to commemorate the death of a sibling. On Saibai, women's zig-zag shoulder designs marked totemic clan affiliation, though again no such designs were recorded amongst the rock paintings. Scars similar to the paired concentric oval design of the *koima(i)* occur along the adjacent Papuan coast. For example, Haddon (1912a: 25) provided examples from Parama

(Bampton Island) and Kiwai Island (Fig. 28D,E) while Gill (1876: 241) provided an illustration of a scarred shoulder typical of Mawata village (Fig. 28F). Landtman (1916: 325; 1927: 152, 240) recorded that centipede cicatrices on the shoulders of male Kiwai Islanders were often associated with fighting 'magic' and making boys great warriors. Thus, if the Kabadul Kula concentric ellipse motif represents cicatrices, it may be a signifier of ceremonial/dance activity, fighting magic and/or clan affiliation.

CHRONOLOGY

No chronological framework is associated with the story of the Kiwai raiders and Kabadul Kula. However, when Captain Pennefather visited Dauan in December 1879, residents were 'in great terror of an expected attack from the New Guinea men of Kewi [Kiwai]' (Pennefather, 1879: 5). What seems certain is that the raid associated with Kabadul Kula must date no later than the late 19th Century as headhunting raids had ceased by this time following introduction of colonial rule over the region.

Three lines of evidence suggest that the paintings at the site were created by more than 1 painting event. First, a very faded complex geometric design (painting #13) is superimposed by clearer and darker red paintings (#14, 15 &

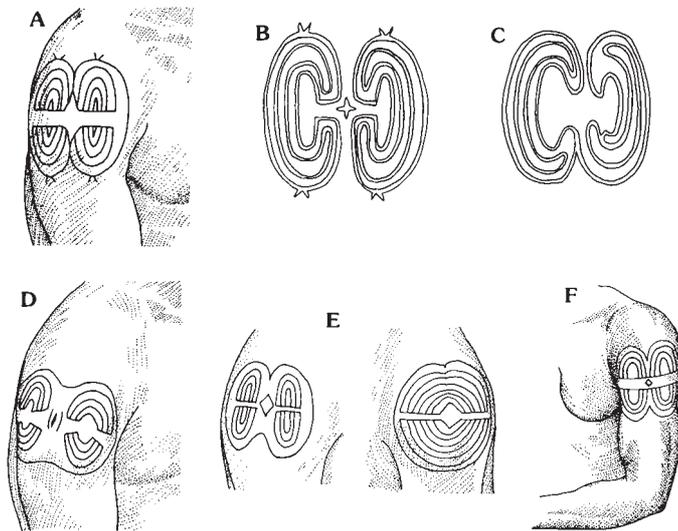


FIG. 28. Shoulder cicatrices from Torres Strait and coastal Papua. A-C, from 3 men from Mer recorded by Haddon in 1888 (after Haddon, 1912a: figs 22-24). D, Bampton Island (after Haddon, 1912a: fig 30). E, Kiwai Island – left and right shoulder (Haddon, 1912a: fig 31). F, Mawata village, Papua (after Gill, 1876:241).

17), indicating that the 2 sets of paintings were created at different times. Second, major differences in fading between paintings suggest time differences between paintings. For example, paintings such as the large concentric circle motif (painting #22) and the *dogai* (painting #1) appear relatively unfaded and to be amongst the more recent additions to the site. In contrast, heavily faded paintings such as the anthropomorph with shield? (paintings #4 & 5) appear to be much older and represent an earlier phase of painting. And third, although the NW panel exhibits some of the most faded paintings at the site, it also exhibits a different style of painting with no superimpositions and an emphasis on marine motifs (e.g., crayfish, canoe and fish/dugong). Only one marine motif is found in any other part at Kabadul Kula (painting #29, a possible canoe), and the location of the marine panel off to the side of the main protected (northern) panel may indicate that it is a more recent addition to the site (see Welsh, 1993 for use of spatial arrangement of paintings as a form of relative dating). At this stage, too little information is available to say definitively whether or not more than 2 painting events took place at Kabadul Kula, but there are indications that at least 2 such events are represented. What also seems clear is that if the Kawai raiders were the last known painters of the site (as is likely given a lack of oral tradition of subsequent artistic activity at this site), then it already exhibited paintings prior to their arrival. The Kiwai artists inscribed their own symbols onto an already marked rock in the Dauan landscape.

The only firm methods for establishing the age of the paintings are:

- 1) to take tiny samples of paint directly from the rock wall and radiocarbon date any organic particles trapped in, above or below the paint (such as fragments of hair from the original paint brushes, or oxalates). Dating directly organic particles associated with the pigment would result in 'direct' dates for the art. Dating organic materials trapped immediately below and/or above the pigment would result in indirect, maximum and/or minimum ages respectively for the art through microstratigraphic association; and/or
- 2) undertake a highly controlled and fine-grained excavation of archaeological sediments below the paintings and date layers containing spalls with paint and/or lumps of ochre.

Both these techniques have been successfully employed to date Aboriginal rock-art associated

with oral traditions at the Lightning Brothers Site, Northern Territory (David et al., 1990; Watchman et al., 2000).

THEMATICS

No information is available about the relationships between individual paintings, whether or not the paintings have a narrative structure (i.e., they tell a story or stories), or indeed the reason why specific paintings were made at the site. The story of the site in Lawrie (1970) does not mention why the Kiwai raiders executed paintings or indeed what images they painted. Looking for the meaning(s) of rock-art sites to the artists or to subsequent users of sites tends to reveal little about cultural signification unless information is provided by the appropriate individuals (e.g., local owners/custodians; artists; subsequent users) and set in broader social and cultural contexts of meaning. The problem for the archaeologist is that what a painting means to an artist or to another member of the community in which the art is located may have no obvious connection with the apparent form of the paintings to an outside observer. Investigations of Aboriginal rock-art from mainland Australia reveals that paintings can have multiple meanings and have different significance values for different members of a cultural group (e.g., Layton, 1992). Furthermore, the meaning of paintings (and of contexts of their creation) can change from generation to generation. Despite these limitations, a number of inferences and speculations can be made about the spatial and thematic structure of Kabadul Kula, given what is known of Torres Strait Islander cultures and motif designs and associations, as well as of neighbouring and socially connected cultural practices.

DANCING/CEREMONY. A number of motifs on the northern panel may have been associated with dancing/ceremonies. These include the 5 dancing anthropomorphs, the headdress anthropomorph and perhaps the concentric circle motif. However, it is unknown if these dancers represent living people or spirits of the dead (*muri/markai*) as seen at Pulu and Keriri (McNiven & David, this volume). We have already discussed some of these possibilities above.

GROUP AFFILIATION. The concentric circle motif may have been associated with shoulder cicatrices. Following the function of the cicatrices, the painting may be a signifier of

ceremonial/dance activity, fighting magic and/or clan or other social affiliation.

DANGER. The *dogai* painting represents a creature feared by most Islanders. The immediate response of current day Islanders to the painting is one of caution. However, recordings by A.P. Lyons cited above also make it clear that Kiwai peoples both knew about and feared Torres Strait *dogai*. Thus, Kiwai peoples would have been in a position to paint such a creature at Kabadul Kula. Whether or not the painting is associated specifically with *dogai* activities and/or is a signifier of fear/danger/caution is unknown. It is hypothetically possible that the Kiwai raiders painted the image to frighten off local Dauan people or that Dauan people painted the *dogai* to frighten away future Kiwai raiders.

COSMOLOGY. We suggest that the star shape associated with the *dogai* may be linked to cosmological symbolism and belief (and in particular to the particular constellations or planets, such as the morning star), if the nearby Mabuia, Mer and Marind-Anim symbolisms are at all relevant. However, this possibility should be further explored by a more thorough search of the regional ethnographic literature and discussions with knowledgeable Elders.

ANIMALS AND ANTHROPOMORPHS. The NW panel exhibits representations of a crayfish, canoes and a possible fish/dugong. These maritime motifs were not recorded across other parts of the site. Furthermore, all animal motifs at the site are located on the NW panel and all anthropomorphic motifs are located on the N panel. This spatial pattern suggests a structural dichotomy at Kabadul Kula, and therefore a dichotomised set of meanings associated with the art.

FIGHTING MAGIC AND THE KIWAI RAIDERS. Despite the lack of historical information on what the *Kupamal* painted, it is likely that they were responsible for some or all of the more recent paintings at the site. If the *Kupamal* painted the concentric circle (cicatrice) motifs, it is possible that they were undertaken as a form of territorial/cultural resistance and assertion, as cicatrices were used by the Kiwai as fighting magic and signifiers of clan affiliation (see above). It is clear from local oral history that the *Kupamal* executed paintings at the site prior to their attack on Dauan Islanders. This historical information is entirely consistent with independent anthropological recordings of the complex rituals undertaken by Kiwai warriors

before embarking on head-hunting raids (Landtman, 1916; 1927).

CONSERVATION ISSUES

A range of natural processes is today impacting paintings at Kabadul Kula. Although the site is located very close to the major settlement on Dauan, no negative human impacts to the site were observed at the time of recording. Specific management options in light of these impacts are found in McNiven et al. (2001) and are currently being assessed by the Dauan community. Ironically, while natural processes are causing deterioration of paintings, some of these processes can be used to help better understand the history and meaning of the site.

EXFOLIATION. The single, largest threat to the preservation of paintings at Kabadul Kula is exfoliation. The granite rock upon which is found the paintings is slowly exfoliating in grains and small (<1cm²), tabular chips. Each time a painted particle exfoliates off, it removes a small section of paint. This form of impact was observed on each of the 44 paintings at the site (Table 1). Exfoliation can result from a range of processes, including salt crystal formation due to close proximity of the sea and thermal spalling from temperature changes. It appears that redeposition of salts by rainfall runoff is not a major contributor to salt crystal spalling as no major increase in the incidence of spalling was observed in areas known to be impacted by rainfall runoff. Indeed, severe exfoliation was also observed in the most protected areas of the site.

A positive aspect to exfoliation is that it provides opportunities to date the paintings. As small fragments of granite with paint fall from the boulder, they come to rest on the ground surface where they eventually become buried. The site is backed by a hill and rainfall runoff supplies the area with accumulated colluvial sediments. Thus, excavation of sediments immediately below the paintings is likely to reveal spalls with traces of red ochre (paint). The sediments can be dated either by radiocarbon dating organics (charcoal) in the same levels or even dating the sediments themselves using OSL techniques. However, it needs to be kept in mind that an age estimate for a spall is only a minimum age estimate for associated painting. The time delay between painting activity and eventual spalling remains unknown, and will vary from site to site (and indeed across different parts of a site).



FIG. 29. Termite infestation in 2000.



FIG. 30. Close-up of new termite nest growth over paintings in August 2000.

TERMITE NEST INFESTATION. The only animal impact to the site is termite infestation. No pig damage has been observed (unlike the situation at other sites in Torres Strait). Despite their small size, termites represent the most dramatic and obvious impact process at Kabadul Kula. The eastern end of the N side of the boulder features a c.1m high termite nest that backs onto the boulder. This nest is advancing across the paintings and is impacting paintings #8 and #9. Two photographs taken by Margaret Lawrie in 1968 (Lawrie, 1970: 145-146) provide insight into the rate at which the nest is advancing. Lawrie's photos reveal that the nest, while well formed, was set out a little from the wall and may have only been touching the wall midway between the *dogai* (painting #1) and the concentric circle painting (#22) in 1968. At that time, the area below paintings #8 and #9 exhibited no infestation and indeed grass was growing below these paintings. Comparison of Lawrie's photos with our recordings made 32 years later reveals that while the nest has not advanced E towards the *dogai* painting, it has grown considerably along its W side, and is now advancing across the lower left corner of the main painted panel (Fig. 29). It is estimated that during this time the nest has expanded some 30cm to make contact with the wall. Furthermore, the nest extends under the back wall of the boulder where the 'roof' height is less than 15cm. The current extent of the nest across the ground surface is shown in Fig. 4. All new growth of the nest is up the wall and a dramatic example of this growth was observed during a visit in August 2000. A new addition to the surface of the nest since our recording visit 4 months before had resulted in burial of an area of painting approximately 10cm x 1cm (Fig. 30). Lawrie's photo shows few if any

paintings in the area now covered by the termite nest. The photographic evidence indicates that serious threat of termite impact to the site is a recent event. All future advances of the nest on its western side will cover and potentially destroy paintings. This advancement is serious as it is encroaching towards the relatively well-preserved set of 5 anthropomorphs (dancers?) and the spectacular concentric circle motif that dominates the site.

A series of small satellite nests is located immediately to the NW of the main nest structure (Fig. 4). While these nests do not impact the paintings, they most likely are connected to sub-surface tunnels that are destroying the stratigraphic integrity of archaeological deposits. While no cultural materials were observed on the ground surface adjacent to the paintings and within the dripline, numerous flaked stone artifacts and shells occur across the ground surface within a few metres outside of the dripline. Sediments below the paintings are predicted to contain spalls with paint and fragments of ochre associated with production of the site.

RAINFALL AND LICHEN GROWTH. Determining where rainwater affects the site, either as rain drops and/or by runoff, is difficult as it requires being present during rain as well as during different times of the year when the rain comes from different directions. Examination of the limit of the overhang (Fig. 4) reveals that the N side of the boulder, which exhibits the main painted panel, is reasonably well protected, particularly for those paintings on the concave surface in the deepest section of the shelter. In contrast, paintings on the NW panel are under a very narrow overhang and essentially are exposed to the elements. Examination of major

areas of what appears to be lichen growth (as revealed by black patches on the boulder) mirror to a certain extent degrees of protection inferred by the overhang. These black patches correspond to moist areas from rainfall runoff, and are located immediately to the left of the painted wall (near painting #3), across the top of the main northern painted panel, down on the corner of the boulder separating the N and NW panels, and down across the far right end of the NW panel (Fig. 3). While the large overhang diverts runoff away from the main painted panel on the N of the boulder, the shallow overhang on the NW side of the boulder is insufficient to create a dripline and the rain simply proceeds down the side of the boulder over all of the paintings in this area (Fig. 31). Thus, while most of the paintings appear to be little effected by rain runoff, paintings on the NW panel are severely impacted by rainwater.

VEGETATION ABRASION AND FIRE. Plants can impact rock-art by rubbing against paintings and eroding pigments through abrasion. At Kabadul Kula along the NW painted panel, grass 1-1.5m high is growing up against the side of the boulder and making contact with paintings. Although no specific grass impact was observed, it is assumed that over the long-term, the cumulative effects of grass abrasion will cause damage to the paintings. Grass against paintings also increases the likelihood of fire impact to the paintings.

FADING. The degree of fading or the extent to which ochre paintings appear to have lost colour intensity so that they stand out less from the background rock results either from removal/ weathering of pigments or covering/burial of pigments by residues such as silica skins. As no residue development was observed at Kabadul Kula, it is likely that most pigment fading is due to weathering. Such fading was measured somewhat subjectively for each of the 44 paintings using a scale ranging from 1 (minor fading) through 2 (moderate fading), 3 (major fading) and 4 (extreme fading). Scaling was determined by examining the range of colour intensities across the site. While it is possible that some paintings were created with a very dilute, low intensity ochre paint, it is assumed that the original state of all paintings was probably the darkish red currently apparent on the better-preserved paintings. This assumption seems warranted as a general positive correlation was observed between the sharpness of a line and the intensity of colour. That is, bright red lines tended to be sharp



FIG 31. Rain runoff across northwest (marine) painted panel of Kabadul Kula in August 2000.

while faded red lines often appeared diffuse and weathered. As a general rule, greater fading here appears to equate with greater weathering, and it is also possible that, broadly speaking, greater fading in any given part of the site generally equates with greater age. However, a range of factors indicates that such correlations at Kabadul Kula need be taken with caution.

Most (68%) of the paintings reveal extreme (n=14, 32%) or major to extreme (n=16, 36%) fading (Table 1). Over 2/3 of the paintings at Kabadul Kula are in poor condition and are heavily weathered. Although no paintings were given a fading rating of 1 (minor), 3 paintings exhibited a fading range of minor to major (1 to 3) while 1 painting (the *dogai*) ranged from minor to extreme (1 to 4) (that is, different parts of individual paintings exhibit different degrees of fading). The fact that individual paintings exhibit a wide range of fading scales indicates that age alone is not the cause of fading of paintings (there is no evidence that any paintings were ever retouched). Different rates of weathering are occurring on certain paintings. It is also possible that some colour differences reflect the original state of the paintings. Significantly, most (9 out of 14) of the extremely faded paintings are found on the NW panel. Indeed, all but 1 of the 13 paintings on this panel exhibit either extreme or major to extreme fading. The overall poor condition of the paintings on this panel is consistent with the rainfall impact and perhaps grass abrasion. As such, their faded condition does not necessarily indicate greater age compared to other paintings at the site. It is likely that the paintings in this part of the site were all undertaken during a painting event temporally separate from the other paintings, given that 1) unlike the main panel, this panel focuses on marine themes (accounting for

TABLE 1. Description of individual paintings at Kabadul Kula. * 1 = minor, 2 = moderate, 3 = major, 4 = extreme.

Painting Number	Motif description	Motif only determined by digital enhancement	Max Length (cm)	Preservation / Conservation			
				Degree of Fading*	Exfoliation	Major Lichen growth	Rainfall runoff
1.	<i>Dogai</i> (anthropomorph)	No	80	1 to 4	Yes	No	No
2.	Indeterminate	-	-	4	Yes	No	No
3.	Hut?	Yes	~97	3 to 4	Yes	No	Yes
4.	Shield?	Yes	-	4	Yes	No	No
5.	Face (anthropomorph)	Yes	~75	3 to 4	Yes	No	No
6.	Indeterminate	-	-	2	Yes	No	No
7.	Geometric	Yes	-	3 to 4	Yes	No	No
8.	Indeterminate	-	-	2 to 4	Yes	No	No
9.	Lines/indeterminate	-	-	3 to 4	Yes	No	No
10.	Lines/indeterminate	-	-	4	Yes	No	No
11.	Anthropomorph	No	21	2 to 3	Yes	No	No
12.	Anthropomorph	No	27	1 to 3	Yes	No	No
13.	Geometric/indeterminate	Yes	-	3 to 4	Yes	No	No
14.	Anthropomorph	No	22	2 to 3	Yes	No	No
15.	Anthropomorph	No	19	3 to 4	Yes	No	No
16.	Anthropomorph	No	18	3 to 4	Yes	No	No
17.	Line	No	35	3	Yes	No	No
18.	Indeterminate	-	-	4	Yes	No	No
19.	Inverted 'Y' (geometric)	No	31	2 to 3	Yes	No	No
20.	Anthropomorph	No	61	1 to 3	Yes	No	No
21.	Lines/indeterminate	-	43	2 to 4	Yes	No	No
22.	Circle/ellipses	No	52	1 to 3	Yes	No	No
23.	Headdress	Yes	33	3 to 4	Yes	No	No
24.	Anthropomorph	Yes	38	3 to 4	Yes	No	No
25.	Lines/indeterminate	-	-	3 to 4	Yes	No	No
26.	Indeterminate	-	-	3 to 4	Yes	No	No
27.	Anthropomorph	No	29	2 to 4	Yes	No	Yes
28.	Face (anthropomorph)	Yes	~22	4	Yes	No	Yes
29.	Canoe?	Yes	-	4	Yes	No	Yes
30.	Indeterminate	-	-	4	Yes	No	Yes
31.	Crayfish	No	~70	3 to 4	Yes	No	Yes
32.	Indeterminate	-	15	3 to 4	Yes	No	Yes
33.	Indeterminate	-	28	4	Yes	No	Yes
34.	Canoe?	Yes	42	4	Yes	No	Yes
35.	Indeterminate	-	-	4	Yes	No	Yes
36.	Line/indeterminate	-	-	4	Yes	No	Yes
37.	Canoe with sail?	Yes	~34	4	Yes	No	Yes
38.	Fish?/dugong?	No	13	3 to 4	Yes	No	Yes
39.	Canoe?	No	43	4	Yes	No	Yes
40.	Insect?	Yes	49	4	Yes	No	Yes
41.	Indeterminate	-	4	2	Yes	Yes	Yes
42.	Indeterminate	-	-	3 to 4	Yes	No	Yes
43.	Barbed lines (geometric)	No	-	2 to 3	Yes	No	No
44.	Indeterminate	-	-	3 to 4	Yes	No	No

most of the identifiable paintings in this part of the site), and 2) spatial relationships between individual paintings here show fairly uniform spacing and no overlap, unlike the situation elsewhere at the site. Because this part of the decorated rock wall is more subject to the elements (i.e., less protected by overhanging rock) than other parts, and given a lack of superimpositions, it is not possible to determine with the existing information whether these paintings were created before or after the others at Kabadul Kula.

CONCLUSION

As the Dauan Rock-Art Project is the first systematic rock-art project for Torres Strait, it provides a foundation for future rock-art recording in the region. Of particular significance is the use of digital photography and the application of computer enhancement techniques to reveal paintings that are essentially invisible to the naked eye. The digital enhancement of the rock-art represents an important methodological consideration for future rock-art recording and interpretation elsewhere in Torres Strait and beyond. Furthermore, digital enhancement has proved appealing to the Torres Strait Islanders we have worked with as it reveals the value of recording rock-art sites and provides immediate (in-the-field) feedback on research results. Indeed, as a result of our work at Kabadul Kula, other communities in Torres Strait have requested the commencement of rock-art recording on their islands. In particular, communities on a number of islands have been most impressed by, and interested in, the digital enhancement results.

It is clear that much more rock-art recording work needs to be undertaken across Torres Strait. This work is not only related to better understanding the region's rich history, but also to help protect these sites for future generations. In terms of research, our next priority is the remarkable series of rock painting sites on Badu and Mua (Moa) and Pulu Islet. This work will also provide the first insights into the antiquity of rock-art in Torres Strait.

ACKNOWLEDGEMENTS

Primary thanks are extended to the Dauan Community for hosting our stay and for supporting the Project. In particular, we thank Margaret Mau (Chairperson) for supporting the AIATSIS grant application and for helping with logistics and with community meetings. Gratitude

is also extended to Abraham Mau for permission to access Mau family land upon which the site of Kabadul Kula is located. We also wish to thank Phillip Biggie for providing information on Kabadul Kula, Ibrahim Binawel for originally introducing one of us (IMcN) to Kabadul Kula in 1998, and Fred Mooka for taking one of us (IMcN) to other rock paintings on Dauan. In general, *big eso* to all those who attended the community meeting and generously provided helpful information and advice. Our research in Torres Strait was helped once again by the generous support and hospitality of Garrick Hitchcock (formerly Native Title Office, Torres Strait Regional Authority, TSRA). Thanks also to Kevin Murphy (formerly Native Title Office, TSRA) for hospitality and for helpful advice on Dauan Island. Production of the community posters was made possible by the efforts of Janelle Jakoenko of Arts Imaging at Monash University. Some of the line figures are by Gary Swinton, School of Geography and Environmental Science, Monash University. Thanks to Ron Vanderwal for making us aware of the Seligmann article. Rod Mitchell kindly assisted with language translations. Finally, special thanks to the Australian Institute of Aboriginal and Torres Strait Islander Studies for the grant that supported this Project. Helpful comments on a draft of this paper were kindly provided by Ben Gunn and Bryce Barker.

LITERATURE CITED

- BECKETT, J. 1963. Rock art of the Torres Strait Islands. *Mankind* 6(2): 52-54.
- DAVID, B., McNIVEN, I.J., FLOOD, J. & FROST, R. 1990. Yiwalarlay 1: archaeological excavations at the Lightning Brothers Site, Delamere Station, Northern Territory. *Archaeology in Oceania* 25(2): 79-84.
- DAVID, B., BRAYER, J., McNIVEN, I.J. & WATCHMAN, A. 2001. Why digital enhancement of rock-art works: rescaling and saturation. *Antiquity* 75:781-792.
- FARR, F. 1987. Face and crocodile mask from Mabuia, Torres Straits. *Art Tribal* 1: 17-22.
- FRASER, D.F. 1978. *Torres Strait sculpture: a study of oceanic primitive art.* (Garland: New York & London).
- GILL, W.W. 1876. *Life in the Southern Isles; or, scenes and incidents in the South Pacific and New Guinea.* (The Religious Tract Society: London).
- HADDON, A.C. 1908a. Religion. Pp. 241-280. In Haddon, A.C. (ed.), *Reports of the Cambridge Anthropological Expedition to Torres Straits.* Vol. 6 *Sociology, magic and religion of the Eastern Islanders.* (Cambridge University Press: Cambridge).

- 1908b. Magic. Pp. 192-240. In Haddon, A.C. (ed.), Reports of the Cambridge Anthropological Expedition to Torres Straits. Vol. 6 Sociology, magic and religion of the Eastern Islanders. (Cambridge University Press: Cambridge).
- 1912a. The decoration of the person and toilet. Pp. 7-32. In Haddon, A.C. (ed.), Reports of the Cambridge Anthropological Expedition to Torres Straits. Vol. 4 Arts and crafts. (Cambridge University Press: Cambridge).
- 1912b. Decorative, pictorial and glyptic art. Pp. 342-393. In Haddon, A.C. (ed.), Reports of the Cambridge Anthropological Expedition to Torres Straits. Vol. 4 Arts and crafts. (Cambridge University Press: Cambridge).
- 1912c. Dances and dance paraphernalia. Pp. 288-305. In Haddon, A.C. (ed.), Reports of the Cambridge Anthropological Expedition to Torres Straits. Vol. 4 Arts and crafts. (Cambridge University Press: Cambridge).
- 1912d. Sound producing instruments. Pp. 270-288. In A.C. Haddon (ed.), Reports of the Cambridge Anthropological Expedition to Torres Straits. Vol. 4 Arts and crafts. (Cambridge University Press: Cambridge).
- 1912e. Food and its preparation and narcotics. Pp. 130-143. In Haddon, A.C. (ed.), Reports of the Cambridge Anthropological Expedition to Torres Straits. Vol. 4 Arts and crafts. (Cambridge University Press: Cambridge).
- 1912f. Transport and canoes. Pp. 205-217. In Haddon, A.C. (ed.), Reports of the Cambridge Anthropological Expedition to Torres Straits. Vol. 4 Arts and crafts. (Cambridge University Press: Cambridge).
1935. Reports of the Cambridge Anthropological Expedition to Torres Straits. Vol. 1 General ethnography. (Cambridge University Press: Cambridge).
- HADDON, A.C. & HORNELL, J. 1937. Canoes of Oceania. Volume II: the canoes of Melanesia, Queensland, and New Guinea. Bernice Bishop Museum Special Publication 28.
- HADDON, A.C. & RIVERS, W.H.R. 1904. Totemism. Pp. 153-193. In Haddon, A.C. (ed.) 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., SELIGMANN, C.G. & WILKIN, A. 1904. Magic and religion. Pp. 320-378. In Haddon, A.C. (ed.), Reports of the Cambridge Anthropological Expedition to Torres Straits. Vol. 5 Sociology, magic and religion of the Western Islanders. (Cambridge University Press: Cambridge).
- 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).
- HOLMES, J. 1902. Notes on the religious ideas of the Elma tribe of the Papuan Gulf. *Journal of the Anthropological Institute of Great Britain and Ireland* 32: 426-431.
- HOUSE OF REPRESENTATIVES STANDING COMMITTEE ON ABORIGINAL & TORRES STRAIT ISLANDER AFFAIRS. 1997. Torres Strait Islanders: a new deal. A report on greater autonomy for Torres Strait Islanders. (The Parliament of the Commonwealth of Australia: Canberra).
- JOINT COMMITTEE ON FOREIGN AFFAIRS AND DEFENCE. 1979. The Torres Strait Treaty: report and appendixes. (Australian Government Publishing Service: Canberra).
- LAADE, W. 1971. Oral traditions and written documents on the history and ethnography of the northern Torres Strait Islands, Saibai - Dauan - Boigu. Vol. 1. Adi - myths, legends, fairy tales. (Steiner: Weisbaden).
- LANDTMAN, G. 1916. The magic of the Kiwai Papuans in warfare. *Journal of the Royal Anthropological Institute of Great Britain and Ireland* 46: 322-333.
1927. The Kiwai Papuans of British New Guinea. (Macmillan & Co: London).
- LAWRENCE, D. 1994. Customary exchange across Torres Strait. *Memoirs of the Queensland Museum* 34(2): 241-446.
- LAWRIE, M. 1970. Myths and legends of Torres Strait. (University of Queensland Press: St Lucia).
- LAYTON, R. 1992. Australian rock art: a new synthesis. (Cambridge University Press: Cambridge).
- LEWIS, A.B. 1931. Carved and painted designs from New Guinea. *Anthropology Design Series* 5. (Field Museum of Natural History: Chicago).
- LYONS, A.P. 1921. Animistic and other spiritualistic beliefs of the Bina tribe, western Papua. *Journal of the Royal Anthropological Institute of Great Britain and Ireland* 51: 428-437.
- 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., DAVID, B. & BRAYER, J. 2000. Digital enhancement of Torres Strait rock-art. *Antiquity* 74: 759-760.
2001. Dauan Rock-Art Project, Torres Strait. Report to the Australian Institute of Aboriginal and Torres Strait Islander Studies, Canberra. (Unpubl.).
- McNIVEN, I.J., DAVID, B. & BRADY, L. 2002. Torres Strait rock-art: an enhanced perspective. *Australian Aboriginal Studies* 2: 69-74.
- 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 Captain F.P. Blackwood, R.N. during the years 1842-46. (Dickson: London).

- MOSBY, T. & ROBINSON, B. 1998. *Ilan Pasin* (this is our way): Torres Strait art. (Cairns Regional Gallery: Cairns).
- PENNEFATHER, C. 1879. Report of a cruise among the islands lately annexed to Queensland. (QSA, Col/A288/460).
- RIVERS, W.H.R. 1912. Astronomy. Pp. 218-228. In Haddon, A.C. (ed.), *Reports of the Cambridge Anthropological Expedition to Torres Straits*. Vol. 4 Arts and crafts. (Cambridge University Press: Cambridge).
- SELIGMANN, C.G. 1905. Note on a painting on bark from the Aird River delta, British New Guinea. *Man* 5: 161.
- SHNUKAL, A. 1998. At the Australian-Papuan linguistic boundary: Sidney Ray's classification of Torres Strait languages. Pp. 181-200. In Herle, A. & Rouse, S. (eds) *Cambridge and the Torres Strait: centenary essays on the 1898 Anthropological Expedition*. (Cambridge University Press: Cambridge).
- SOUTHON, M. AND THE KAURAREG TRIBAL ELDERS 1998. The Sea of Waubin: the Kaurareg and their marine environment. Pp. 219-229. In Peterson, N. & Rigsby, B. (eds) *Customary marine tenure in Australia*. Oceania Monograph 48. (University of Sydney Oceania Publications: Sydney).
- VAN BAAL, J. 1966. *Dema: description and analysis of Marind-Anim culture* (south New Guinea). (Martinus Nijhoff: The Hague).
- VANDERWAL, R. 1973. The Torres Strait: protohistory and beyond. The University of Queensland, Anthropology Museum, Occasional Papers in Anthropology 2: 157-194.
- WATCHMAN, A., DAVID, B., McNIVEN, I.J. & FLOOD, J. 2000. Micro-archaeology of engraved and painted rock surface crusts at Yiwarrlarlay (The Lightning Brothers site), Northern Territory, Australia. *Journal of Archaeological Science* 27: 315-325.
- WELSH, D. 1993. The early rock art of the Kimberley, Australia: developing a chronology. Pp. 13-21. In Steinbring, J., Watchman, A., Faulstich, P. & Tacon, P.S.C. (eds) *Time and space: dating and spatial considerations in rock art research*. Occasional AURA Publication 8. (Australian Rock Art Research Association: Melbourne).
- WILSON, L. 1993. *Kerkar Lu: contemporary artefacts of the Torres Strait Islanders*. (Queensland: Department of Education: Brisbane).

