

DUDUMAHAN: A ROCK ART SITE ON KAI KECIL, SOUTHEAST MOLUCCAS

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The Dudumahan rock art site provides a key with which to investigate the relatedness of the rock art sites of the Banda Sea region (Figure 1). Located on raised, wave-cut limestone cliffs on the north coast of Nuhu Rowa Island in the Kai group of the Southeast Moluccas (Maluku Tenggara), the paintings at Dudumahan have been recorded by a number of observers since at least 1884, but have rarely, and then only superficially, been illustrated and placed in their regional context. As part of a wider project aimed at provoking interest in the rock art of Western Melanesia, this paper presents the results of a brief survey of the Dudumahan site as a means of drawing attention to some of the features common to painted sites of the Banda Sea region.

Dudumahan is the name of the village, now abandoned, that was situated above the cliffs on which the art is painted (Figure 2). Access to the site is currently supervised by the people of Ohoidertawun and Ohoider Di Atas villages. The Dudumahan cliffs extend northwards for about a kilometre from the eastern end of Ohoidertawun beach, rising to a maximum of 20m above the beach. From the sea, the site is approached across a sand-covered reef shelf which is exposed at low tide. The cliffs consist of raised coralline limestone, probably of Holocene origin, the different tectonic events being marked by a series of wave-cut strandlines. A. Langen (1885: 407) has claimed that an uplift event at Kai some 15 years prior to his arrival (c. 1868) had raised some areas by approximately one metre. The distinctive flights of ledges that result from this process find numerous parallels along the coastlines of other eastern Indonesian islands and the New Guinea mainland (see Röder 1959: Plate 1). Use of these ledges as platforms for painting rock art, and of the niches and caves in the cliff-faces as ossuaries, is common practice throughout the region.

Figure 3 shows the 400m section of the Dudumahan cliff-line on which art has been identified. Viewed in profile, the cliffs show evidence of at least four uplift events. The protruding ledges reach widths of up to 1.5m, and the recessed galleries between the ledges average approximately 3m in height. This basic profile is repeated along the length of the site, and a uniform code is used in this paper to distinguish between the different levels, running from Level 1 at the base of the cliff up to Level 4 at the top. Stalactites on Levels 3 and 4 have developed to the point where they link the different levels and obstruct access along the ledges. Collapse within the cliff body has promoted cave formation, with some of the caves opening out onto the cliff-face. Three of these exposed caves are shown in Figure 3; the largest, Gua Luat Besar, extends 14m back into the

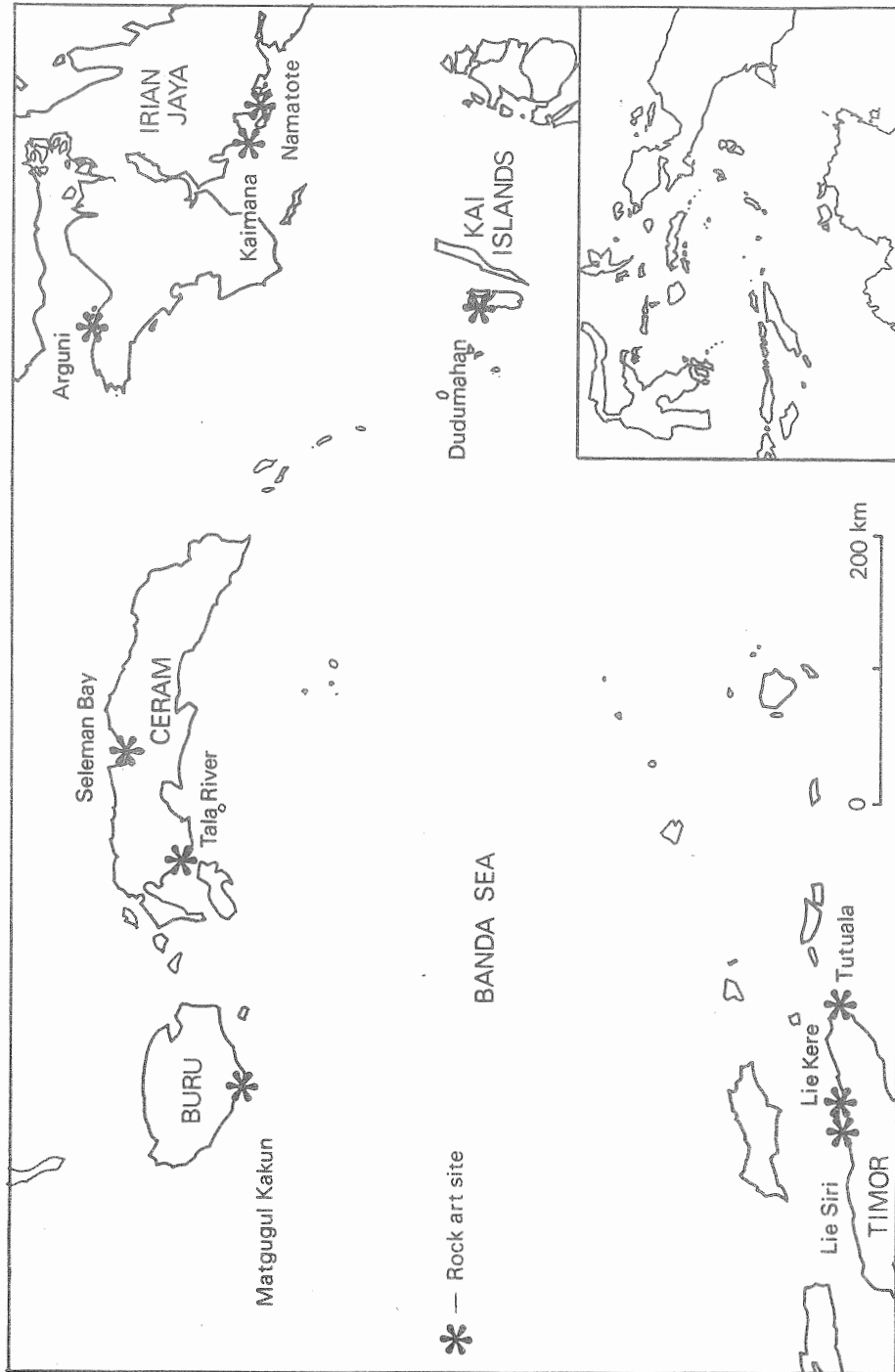


Figure 1. Some rock art sites of the Banda Sea region.

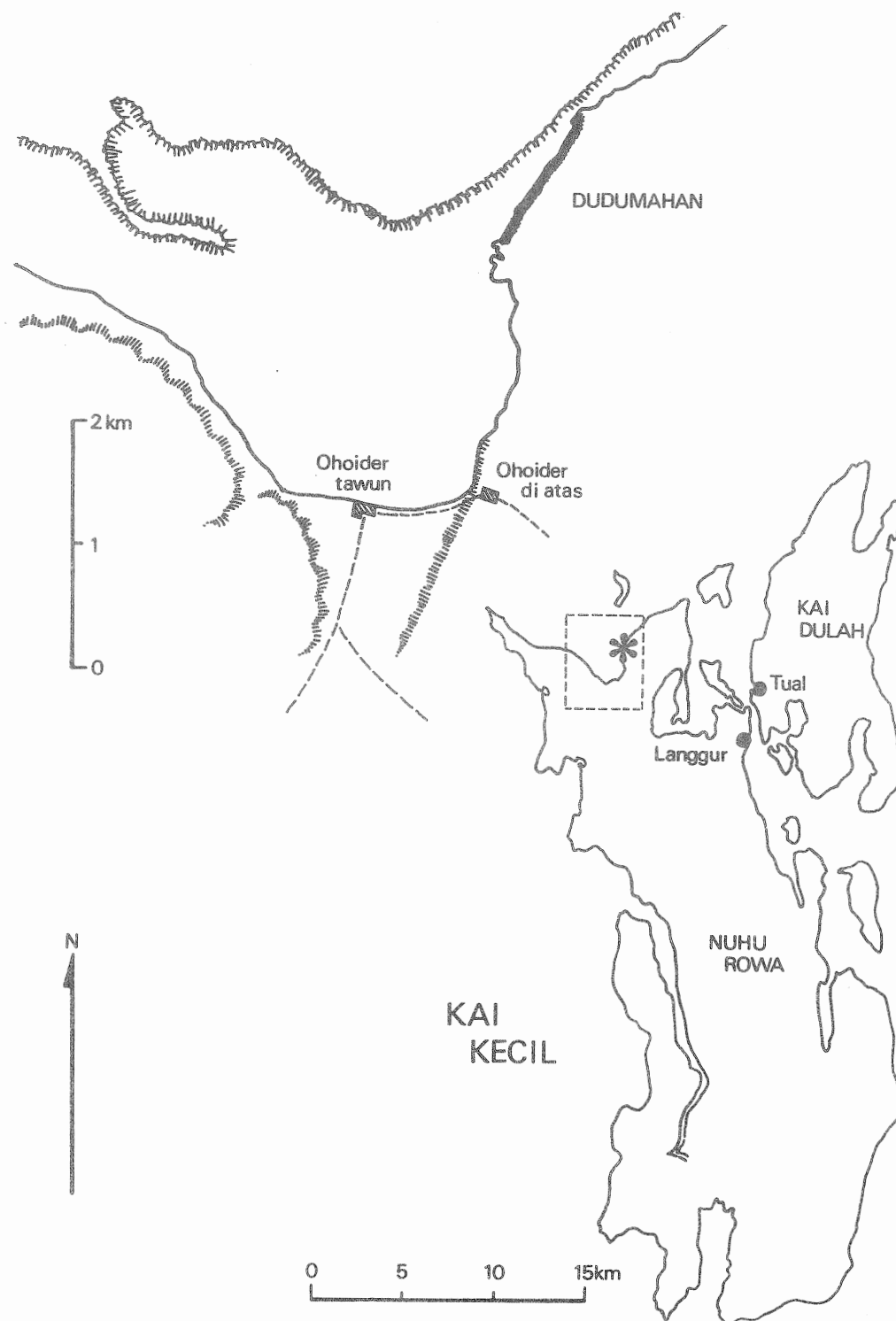


Figure 2. Location of the Dudumahan site on Kai Kecil, adapted from maps in Allied Geographical Section 1944.

cliff, with a central chamber approximately 10m wide and 6m high. No deposit, other than the surface finds discussed below, was visible in any of the caves inspected, but no attempt was made to test the cave floor for depth; it is worth noting in this context that Röder's excavation of Dudumunir cave in a similar limestone cliff formation in the Arguni complex yielded 3.6m of archaeologically rich deposit (Röder 1959: 38ff).

The history of the documentation of the Dudumahan site is of some interest in its own right. The site has been visited, reported, described and even illustrated, on numerous occasions over the course of the last century; references to Dudumahan have appeared in the regional (Riesenfeld 1950: 566; van Heekeren 1972: 108; Bellwood 1978: 75; Specht 1979: 76; Kosasih 1984, 1985, 1986) and international literatures (Cartailhac and Breuil 1906: 210, figure 154; Berger-Kirchner 1959: 61; Kusch 1986: 100). However, few of the first-hand reports signal any knowledge of the published work of their predecessors and none of them attempt any comparison between their own results and those previously published; this has the advantage of providing a number of basically independent perspectives on a site that has apparently seen remarkably little change or human impact over the last century.

The earliest published accounts of the Dudumahan paintings date from a series of visits by naval officers and traders resident on Kai during the 1880's (Allirol *et al.* 1884; A. Langen 1885; G. Langen 1888; Portengen 1888, 1889; van Hoëvell 1889; Martin 1890; Jacobsen 1896: 178-9). Interest in Dudumahan, other than as a local tourist sight (MacKellar 1912: 218), seems to have waned in the twentieth century, though it seems certain that Geurtjens, possibly the most travelled and knowledgeable of writers on the South-East Moluccas, visited the site in June 1904; not because his published accounts (1921: 246f, 392f) are meticulously dated, but because he took the trouble to write his name and the date on the cliff (Panel 11). In the course of their Moluccan survey, Miller and Spriggs (1977; Spriggs and Miller this volume) visited and briefly recorded part of the site. My own record of the site was made, equally adventitiously and with a corresponding ignorance of the earlier publications, in November 1984.

Interest in the nineteenth century accounts tended to focus on the burials and burial-goods found in caves in the Dudumahan cliffs. Mention is made of the presence of votive copper gongs (A. Langen 1885), of pieces of bamboo and broken glass scattered at the mouth of one of the caves to deter pilferers (Allirol *et al.* 1884) and, probably in reference to the same cave, of pottery, skulls and a complete skeleton (Portengen 1888). These early enquiries were hindered by a local reluctance to discuss, visit or even face the cliffs and caves, and there is evidence that, though nominally Christian, the people of Ohoider were still making regular offerings at the caves during this period. The ritual proscriptions on facing the art were still remembered in 1984, together with the details of related practices, such as the inversion of paddles whilst passing the

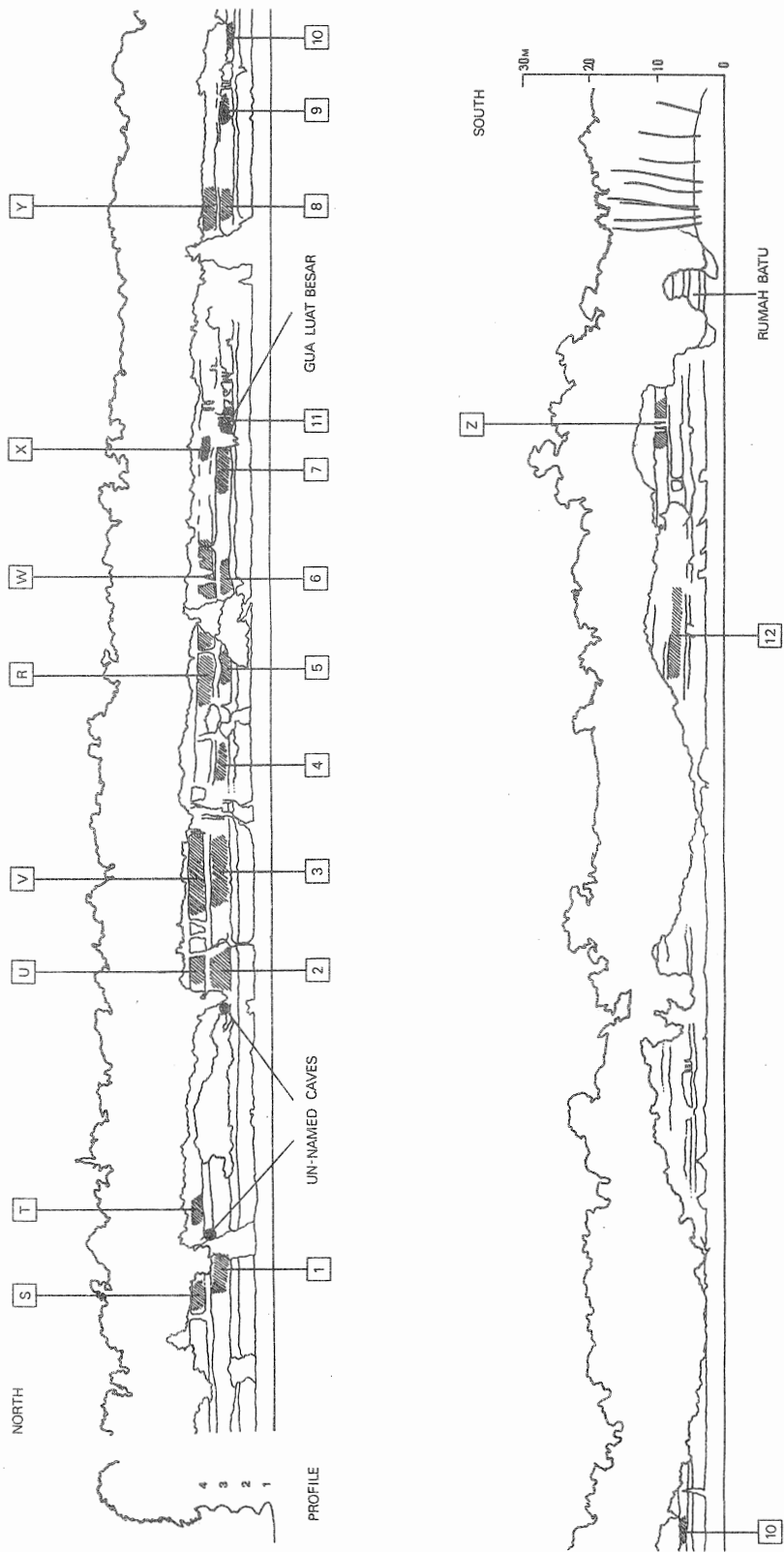


Figure 3. The Dudumahan cliffline viewed from the sea. The plan is printed in two overlapping sections.

cliffs. In 1984, some of the skeletal material and a number of the pots were still in place. The skulls were identified as the remains of thirty Tualese killed during a war in 1746 (the date quoted by my main informant, A.J. Worsoek), and A. Langen was remembered with little affection as a Mr. Lang who snared and took to Europe a gold-excreting snake living in one of the caves. A myth associated with the detached limestone block known as Rumah Batu (Figure 3), concerning the witch Te Waharun (recorded as 'Tebaharo' by A. Langen (1885)) was, with the addition of some of her more recent exploits, still being recounted in 1984.

Early descriptions of the art were generally less informative. 'Arabian hieroglyphs', 'devils' and even a 'Calvary' were identified (A. Langen 1885; for this last design as recorded by Langen and myself see Figure 5: 6xvi; Langen 19), and the original interpretation put forward was that the hand-stencils are shell-prints (Portengen 1888). By the standards of the day, however, the account and accompanying illustrations presented by A. Langen were remarkably sophisticated; he distinguished between three phases of painting on the basis of the different shades of red pigment and the degree of elaboration of the designs. The cruder anthropomorphic figures and faces he dated to the 14th century, the finer figures and boat forms to later contact in the 1550's with Christian Portuguese art (hence the Calvary), and the hand-stencils and rayed concentric circle designs were attributed to Bandanese refugees in the aftermath of the revolt of 1617/18. Each of the individual designs described or illustrated by A. Langen (1885) and Portengen (1888) could still be identified in 1984, attesting to at least a minimum of preservation.

As reported by these early observers, local accounts of an origin for the paintings were varied, but generally involved the agency of 'ghosts', 'spirits' or the 'devil'. In a more complex variant, the naval lieutenants Allirol, Mol, van Slooten, Meijboom and Deijl (1884) recorded the belief that the dogs and birds traditionally carved and placed on the roofs of burial-houses on Kai were responsible for painting a new design for each 'spirit' that they escorted from the burial-house to its resting place in the Dudumahan caves. Thus, though local mythology is obviously not lacking in historical depth, there is little evidence for firm local knowledge of any original, or earlier, function for the rock art. There is a certain irony about the derision with which these local opinions were received by the European observers; the explanations proffered by the latter, invoking gold-hoarding pirates (Allirol *et al.* 1884), and founded on astonishment at the fact that any individual should want to produce art 'with no importance for anybody and no advantage for himself' (Portengen 1888), are illuminating only in terms of the light they shed on the pre-occupying concerns and ethnocentrism of their authors.

The techniques that I employed in recording the art at Dudumahan reflect my prior ignorance of the site: no material suitable for tracing designs was readily available on Kai, and the illustrations offered in this paper are thus derived from measurements, sketches,

Figure 4a.

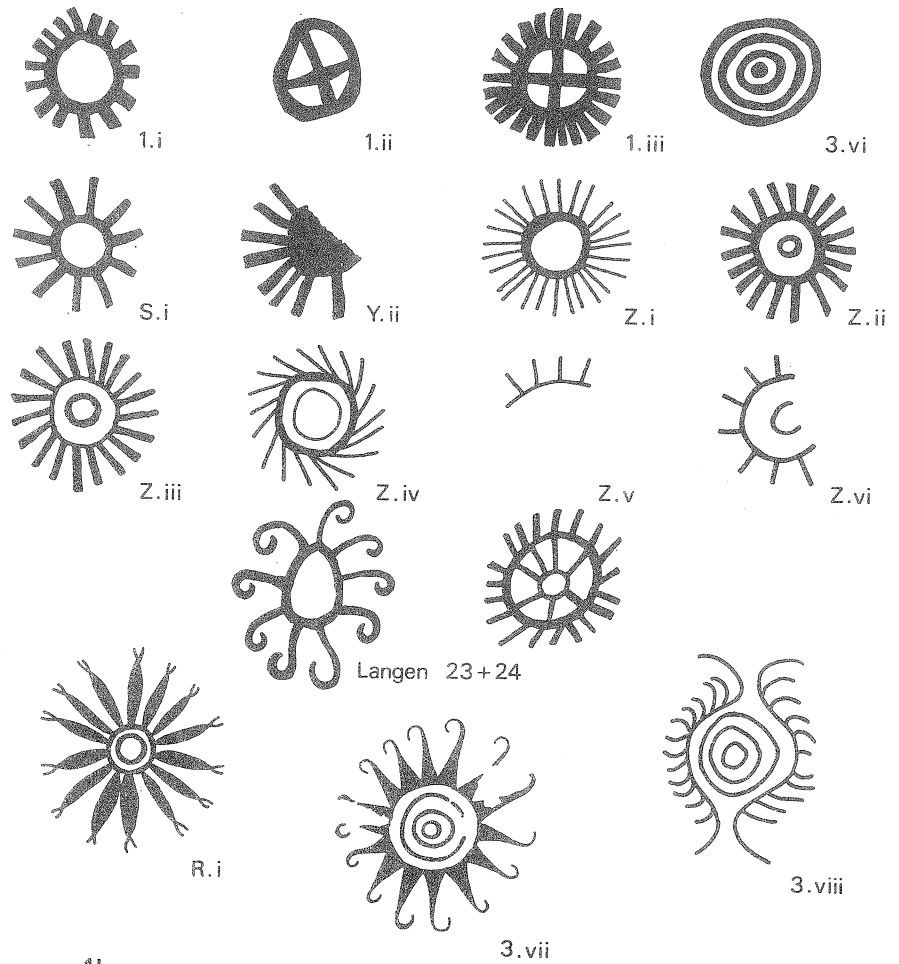


Figure 4b.

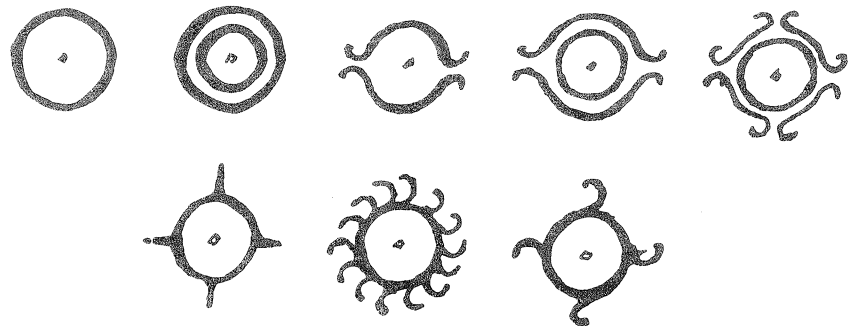


Figure 4a. Circularly formatted designs (not to scale).

Figure 4b. Lantaar designs, adapted from Geurtjens 1910:350.

and photographic transparencies alone. Access to much of the site is physically difficult; pole ladders were used to reach the different galleries but, because of the narrowness of most of the ledges, many of the photographs could be taken only by holding onto an assistant with one hand, and leaning out from the cliff with the camera in the other hand. Due to constraints on time and the amount of film available, not all of the individual designs could be recorded and selection was thus exercised in determining what to cover. The option taken was to emphasise the range of motifs, with a bias towards the figurative designs; little attention was paid to the hand-stencils. Coverage of the art on Level 4 was particularly poor, as I relied on identification, estimates of size, and photographic documentation from the beach.

A further constraint on recording is the poor preservation of large areas of the site; panels 10, 11 and 12 and most of panels 7 and 8 consist of broad streaks of red paint, presumably where sheltering overhangs have been lost. Even the better-preserved panels reveal extensive loss, through exfoliation of the limestone surface, loss of paint in solution and the deposition of thick films of mobile calcium carbonate. A very rough estimate of the scale of loss based solely on visible remains suggests that the discernible designs represent approximately 20-25% of the original corpus. No serious quantitative record was thus attempted, beyond the counting of those designs that were sufficiently distinct to permit recording.

Spatially, the site can be broken down into panels on the basis of level and location along the cliff-line; this was a measure of convenience rather than recognition of any internal patterning in the site. Few details were taken of the relative position of designs within each separate panel, as I felt at the time, and argue below, that this is unlikely to prove informative. Figure 3 shows the levels and the locations of the different panels along the length of the site. Alphabetical codes are used for the panels on Level 4, numerical for those on Level 3; no art was visible on Levels 1 or 2. In the coding system used in this paper, the first letter or number refers to the panel, the second to the individual code for the design in question. For the purposes of this paper, 'design' is taken to refer to a single, distinct unit of representation, and 'motif' is reserved for the classes or types of formally similar designs (e.g. 'concentric circles'). Bracketed codes (e.g. {6.x}) designate designs that were either too poorly preserved or too poorly recorded to permit illustration here.

Two different techniques have been employed in producing the art at Dudumahan: of over 300 visible designs, the great majority (approximately 84%) are painted freehand, while the remainder consist of stencils (approximately 16%). No engravings were seen, though G. Langen claimed that the designs had been 'chiselled in the rock [and then] filled in with red pigment' (1888). The predominant paint colour is red, the only exceptions being handstencils and a minimum of four painted designs in yellow, comprising some 4% of the total, and a



5.vi



5.vii



6.xiv



5.v



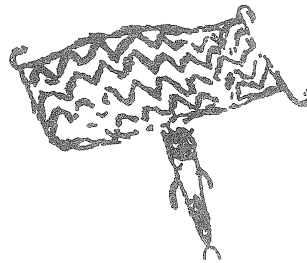
5.viii



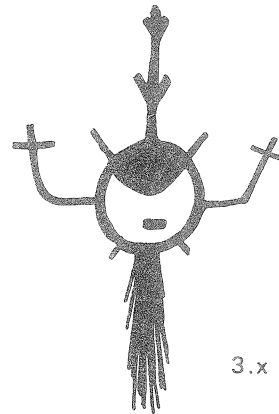
7.ii



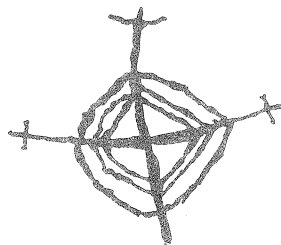
7.iii



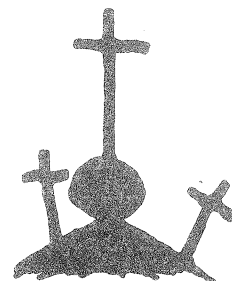
6.xv



3.x



6.xvi



Langen 19

Figure 5. Non-figurative designs.

single instance of retouch with a black pigment (6.vii). However, there is considerable variation in the hue of the reds, from a dark 'rust' red through to a light orange. The extent to which this reflects age, pigment composition or relative exposure, or any combination of these, is unclear. Although my records specify hue on the basis of a scale of darkness, the difficulty of maintaining consistency while on the site, combined with discrepancies in basic colour reproduction between my own transparencies and those of Miller and Spriggs for the same designs, leave me inclined to treat all designs in 'red' as a single colour class, rather than attempt fine definition in the absence of suitable control over the contributing variables.

Figurative and non-figurative designs at Dudumahan feature in a ratio of roughly 12% to 88% respectively. The most common non-figurative motif is the distinctive 'rayed concentric circle' (e.g. Figure 4a: 1.i, 1.ii, 1.iii, 3.vi, 3.vii, 3.viii, R.i, S.i, Y.ii, Z.i-vi). Even this, the most standardized of the motifs, exhibits a wide range of specific forms, from crudely executed and technically very basic (1.i, S.i), to complex and finely drawn examples (3.vii, R.i). There is no obvious pattern to the numbers of rays or circles in this motif: ray counts range from 11 to 28, and the numbers of circles from 1 to 4. Some exhibit solid centres, others rings of concentric circles or 'spoked' centres. At least two examples of this broad motif class have a long trailing stem at the base (6.i, 6.x). The more basic forms are often found grouped in vertical columns; variation in hue and in execution between adjacent designs suggests that this is a cumulative, but presumably intentional, effect. The few complex forms recorded are all located individually. The 'circled cross' (1.ii) and 'concentric circle' (3.vi) motifs are of a similar size to, and are often located within, clusters or rows of 'rayed concentric circles' and are thus included as reduced forms of the same basic motif.

Non-figurative designs that are not necessarily developed on a circular format include:

- a design composed of three lines of linked chevrons 'stacked' upon one another (Figure 5: 5.vi),
- a number of simple enclosed designs, some of them figures-of-eight, others 'bomb-shaped' (Figure 5: 5.vii), and a single barred 'horse-shoe' design (Figure 5: 6.xiv),
- complex symmetrical curvilinear designs (Figure 5: 5.v, 5.viii, 7.ii, 7.iii), also (5.iii, W.i, W.ii),
- a loose group of designs with up to four 'tails' or 'limbs' extending from a central body, which itself is either solid or barred (Figure 5: 3.x, 6.xv, 6.xvi), also (6.xvii),
- a loosely defined motif consisting of solid angular central bodies, often drawn with trailing pairs of parallel lines, which are either straight or curled (Figure 6: 6.iii, 6.iv, 7.i, 7.iv, 9.i), and

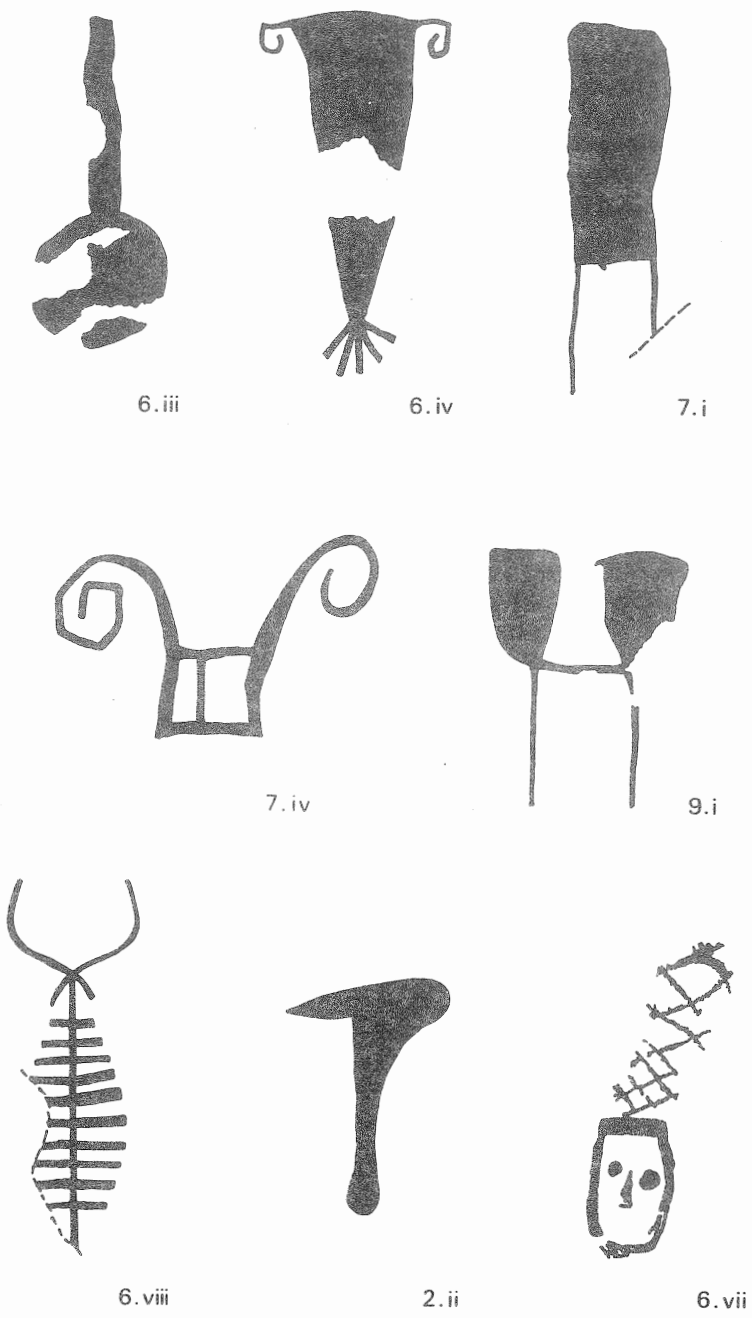


Figure 6. Non-figurative 'tool' and 'mask' designs.

- a unique 'skeletal' design, consisting of a central vertical line hatched horizontally along its full length and capped by two curved lines extending upwards (Figure 6: 6.viii).

The dominant figurative designs are anthropomorphic, either in the form of full-length bodies, or as 'faces' or 'masks' (Figure 7). Of the other figurative motifs, only one, a fish (Figure 8: 6.xii) definitely does not depict an item of human manufacture, and even this design is clearly associated with an adjoining net (6.xiii). Three other designs are classed as zoomorphic rather than anthropomorphic, on the basis either of uncertainty (1.vi), or the presence of 'tails' (1.viii, W.iii). The zoomorphic designs are also all presented in outline or 'x-ray' form; if this distinction holds, design 3.1 (Figure 7) might be re-assigned from the anthropomorphic status it holds by virtue of its headdress and the form of its feet. One other outlined figure, standing on the deck of the boat in design 6.xi (Figure 8), has also been interpreted as anthropomorphic. The 'face' designs are generally crude (7.v, 7.xxi, 9. various un-coded designs), but design 6.vii illustrates the retouching or superposition of an earlier red design with a design in black and, along with (6.ix), cleverly exploits natural projections from the cliff-face to create a three dimensional impression.

The full-length anthropomorphic designs reproduced in Figure 7 are found both singly (1.vii, 3.i, 3.ix, 4.iii) and in groups (2.iii, iv, v; 3.iv, v), (5.i, ii), and are often associated with boats (Figure 8: 3.ii + 3.iii, 4.i., 6.xi). The diversity of forms evident for other motifs at Dudumahan is also apparent amongst the full-length anthropomorphs: some are shown in 'x-ray' form, others have solid bodies; most have heads, but at least one is without (1.vii); and the arrangement of limbs varies from simple 'splayed' configurations where the limbs are flexed and laid out from the torso (e.g. 3.i), to realistic portrayals of motion (2.iii, iv, v). However, certain details are suggestive of strong stylistic continuities: one is the waisted torso, bent legs, and raised arms common to the frieze composed of 2.iii, 2.iv, and 2.v, and the solitary individual 3.ix; another is the 'x-ray' foot, featured in 1.vii, 2.iv (and by implication, 2.iii, 2.v, and 3.ix), 3.i, and (5.ii); a third common element is the identical lining of the genitals and buttocks of 3.iii and the leading man in the boat design 4.i. Gender is clearly male for 1.vii, 3.ii and the figures of 4.i. The flared hips of 3.ix (and, in light of other common features such as head or hair form, 2.v as well) suggest a female form, though this is by no means clear.

Amongst the items of material culture illustrated are nets (1.vii, 6.xiii), a spear (1.vii), a bow (4.i), a 'dagger' (4.iii), a possible hafted adze (Figure 6: 2.ii), and a range of unidentified hand-weapons and possible shields (2.iii, 3.ii, 4.i, 4.iii). Clothing is rarely detailed, but the genital linings may represent a girdle; design 4.iii shows two parallel lines extending from the figure's head, presumably indicating headdress, and possibly a simplified form

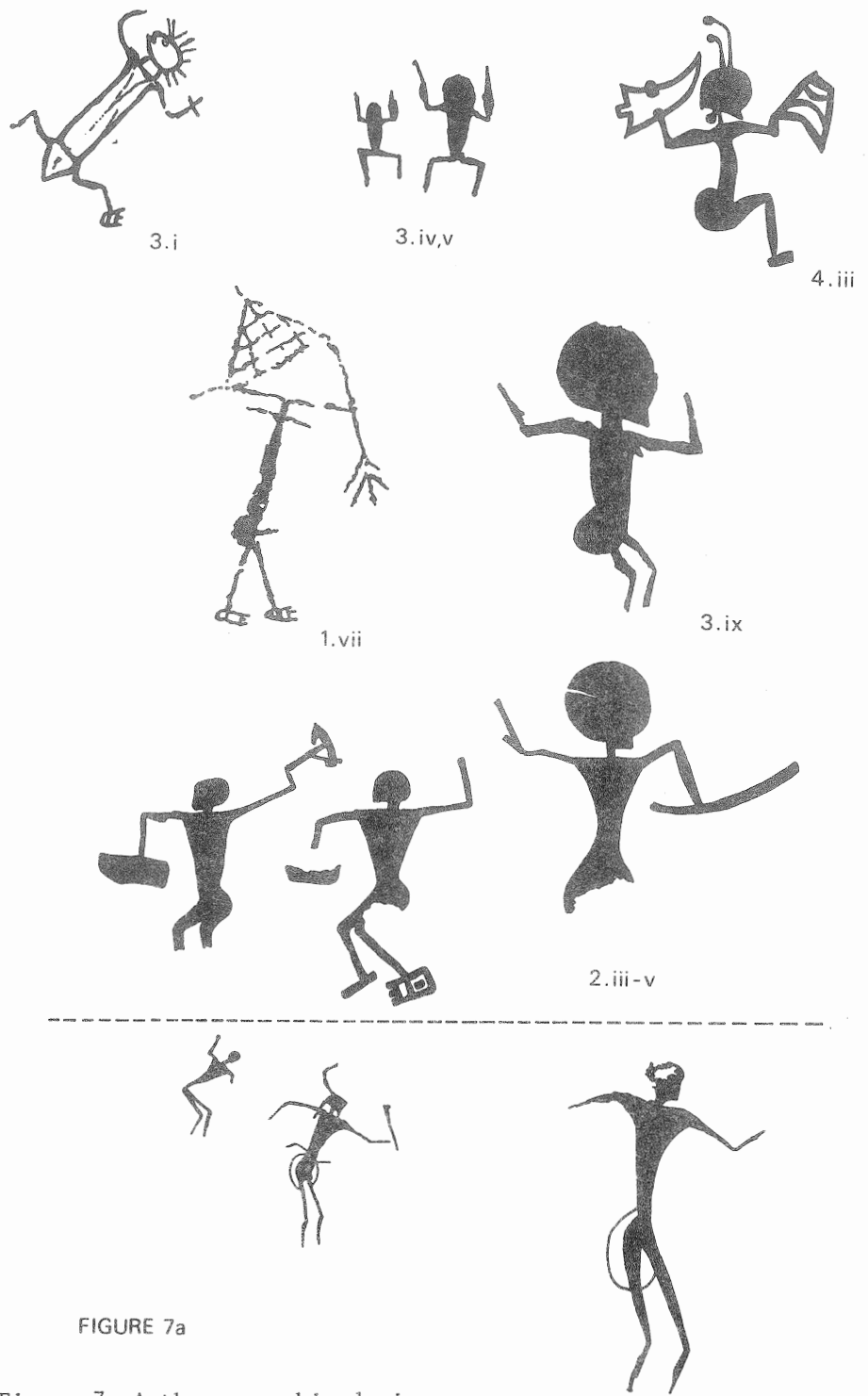


FIGURE 7a

Figure 7. Anthropomorphic designs.

Figure 7a. Anthropomorphic frieze from Ilikerekere, Timor.

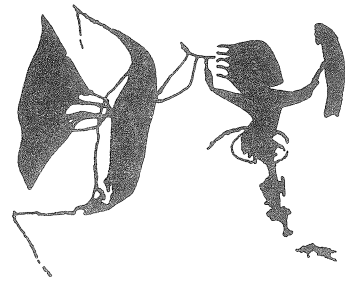
of the 'wavy' headdress exhibited by 3.i, 4.iii, and the three figures of 4.i.

In keeping with the general heterogeneity apparent within motif classes at Dudumahan, no two of the boats are similar (Figure 8). Some are produced in 'x-ray' form with internal structure visible (6.xi), others are shown solid (2.vi, 3.iii), {2.i}; some are manned (4.i, 6.xi), others unmanned (2.vi, 3.ii); only one is pictured with a sail (3.ii); and some feature a 'cabin' or 'drum' midships (2.vi, 6.xi). Comparison with modern or recent Indonesian boats may yield analogies for some of the Dudumahan ships but, given that only one design shows any details of rigging or sail form, estimates of antiquity are more likely to be forthcoming from future maritime archaeological research.

Little can be said of the stencils. Hands are the only recognisable subject of the stencils; no mutilation was observed, the use of both left and right hands is evident, and the sizes of all those stencils inspected closely suggest that they are of adult hands. A range of shades of red provide the predominant colour used in the stencils but, in the context of the site as a whole, hand-stencils are the largest of the motif classes produced in yellow. As most of the painted designs at Dudumahan appear to have been painted individually and are separated by fairly even spaces, the analytic value of the stencils derives from their role in the few identified instances of super-position at Dudumahan; this is discussed below.

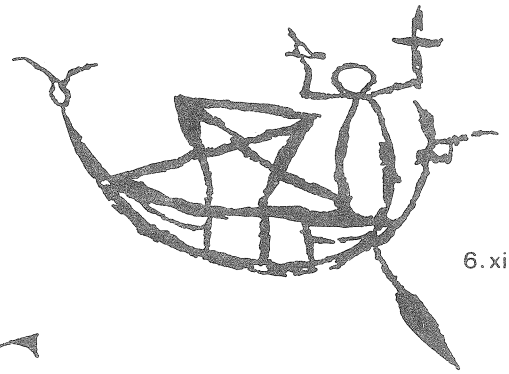
Comparison with other rock art sites aside, there is little evidence of obvious internal patterning at Dudumahan. The corpus of non-figurative designs presents sufficient continuity between the different motifs to render questionable any attempt at clustering into functionally or chronologically significant units. For example, design 3.viii, which I have assigned to the circularly formatted class of motifs shows a strong resemblance to the symmetrical curvilinear designs (e.g. 5.viii). The distinction between the 'tailed' or 'limbed' motif designs (Figure 5) and the solid designs shown in Figure 6 is equally arbitrary, some of the former having solid cores. The more basic non-figurative motifs, the chevrons and enclosed designs (Figure 5), are frequently incorporated within the larger and more complex motifs (e.g., the use of stacked chevrons in 5.vi, {6.v} and 6.xv). Although the formal heterogeneity of the full-length anthropomorphs has been raised, when common features such as the 'x-ray' feet, the details of genitalia, the 'girdles' and headdress forms are considered, there is again no compelling evidence for any internal distinction. The full-length anthropomorphs are linked in turn with the various boat designs which, by extension, form a similarly indivisible class.

This confusion is not simply indicative of poor classification: other than the hand-stencils, the most basic rayed concentric circle motifs and some of the more simple enclosed geometric forms, each of the designs at Dudumahan is unique. This is not to argue that the art



3.ii

3.iii



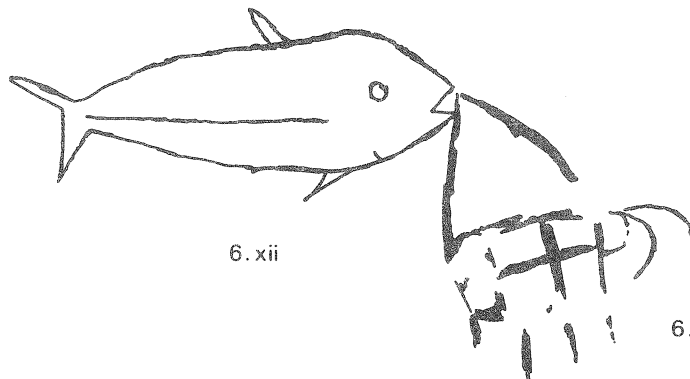
6.xi



4.i



2.vi



6.xii

6.xiii

Figure 8. Figurative designs.

at Dudumahan is the product of a single, linked chain of events; but until the sample is considerably extended through comparison with similar motifs from other sites, the motifs used here can be no more than devices that reduce the corpus of designs to more manageable units, reflecting a rough gradient of formal complexity.

With an overwhelming dominance in the use of red, there is little correlation between motif and colour variation at Dudumahan: the few designs executed in yellow (hand-stencils, a rayed solid circle capping a single extended line (6.i), and an undetermined number of small enclosed basic geometric designs) also appear in red. Colour is of more significance in considering super-position: of the six clear cases of super-position at Dudumahan, three consist of red designs imposed over yellow (6.xi, 6.xv, 7.ii), two of 'dark red' imposed over 'light orange' designs (red streaks on (1.viii), 7.iv on a light orange hand-stencil), and the last is the single instance of black retouch of a red design (6.vii). While a rough sequence of black over red over light orange and yellow can be inferred, the lack of correlation with variation in motif suggests that the sequence may have little chronological depth or significance. Differential preservation, including variation in the hues of red is, for the most part, a function of exposure.

The distribution of different motifs or colours along the length of the site appears insignificant, being dictated largely by differences in accessibility such as the presence of an adequate platform. This seemingly random selection of horizontal location for the different panels is matched by an apparent lack of patterning across the different levels, as the absence of art on Levels 1 and 2 can probably be attributed to storm action, and the low design counts from Level 4 relative to Level 3 are, again, probably a function of difference in the ease of access. The proportions of red as against yellow, and figurative as against non-figurative designs, are virtually constant along both axes.

Given the paucity of archaeological data from the Banda Sea region (little has been added to the summaries of Ellen and Glover (1974) and Miller and Spriggs (1976)), an absolute date for the Dudumahan site will prove difficult to determine. While the social role that rock art has played in the recent or historic past should not be ignored, local accounts of the antiquity or origin of the Dudumahan art offer little to the archaeologist. The probable Holocene origin of the cliffs provides a terminus post quem for the physical context of the site; finer definition could be achieved by dating coral samples from the different uplift events (E. Willensky pers. comm.). More promising avenues of enquiry include consideration of the subject matter at Dudumahan in tandem with comparison of the styles and motifs, not only from other rock art sites, but from regional art produced in and on different media. At this stage, it is sufficient to note that the presence of 'warriors' with wavy headdresses standing upright on boats finds obvious parallels in the decoration characteristic of Dong Son kettledrums. Illustrations of

one of the drums from Kur in the Kai Islands in Kempers' review of the bronze kettledrums (1988: pl.7.05g-j) show both the warriors and, in the last plate, a distinctive decoration on the stern of one of the ships that is matched on one of the Dudumahan ships (6.xi). The possible bronze, or at least metal, dagger held by the anthropomorphic figure 4.iii may represent further evidence for influence that is ultimately Southeast Asian in origin. Again, these features need provide no more than an upper limit on the antiquity of certain elements of the Dudumahan site.

Any function or meaning for the art at Dudumahan and other similar sites is unlikely to be deduced from the analysis either of individual sites, or of the art alone. The relationship between the functions of motifs common to both rock art and a range of other media such as tapa and tattoos in the Moluccas and Irian Jaya is raised elsewhere (Ballard 1988). There is however one plausible local analogy, with intriguing implications for the function of certain of the Dudumahan motifs. In discussing the Dudumahan paintings, G. Langen declared it 'strange that similar figures are still drawn and painted to this day by the natives on various articles in use, such as a boat, drum, weapons, earthenware, &c.' (1888: 778); Langen offered no illustrations, and the material culture of the Kai islands is generally poorly illustrated. However, in one of his earlier papers, Geurtjens (1910) offered a detailed account of the intense ritual activity surrounding the launching of large trading expeditions from the Kai Islands. Much of the paper is devoted to transcription and translation of the songs of the voyagers and their wives, but Geurtjens is meticulous in his description of the material context of the ritual. Prior to departure, red expiatory kawoel rags are fixed to the lantaar on each boat. A description of the lantaar and their significance follows.

When he comes to embark, the Key man paints his lantaar on either side of the prow with a mixture of lime and coconut oil. It (the lantaar) is a form of roundel, varying according to family. Several examples are shown on p. 350.

A kawoel is fixed to the centre of the lantaar to ensure that no harm befalls the members of the expedition on account of their sins. A lantaar furnished with a kawoel is called 'the eye of the ship'. (Geurtjens 1910: 349)

The lantaar illustrated by Geurtjens are reproduced in Figure 4b. Continuing, Geurtjens turns to the role of the damdamoer, a bamboo grill raised 1 to 1.5m above the floor of the ceremonial house in the village.

Several other receptacles are found on top of the damdamoer, the most common being leather boxes, which are used on Fridays to determine the horoscope from the fire, and a basket containing the sacred stone or waat sebiet. Each of these containers is marked with the ship's lantaar

and care is taken to ensure that they are always placed in such a manner that the lantaar is turned towards the sea. The facade of the moel house is pointed towards the sea. The damdamoer is directed at the sea. The watmoel face the sea. (Geurtjens 1910: 351)

Independently, the lantaar appear to have operated as symbols of corporate family identity and enterprise, the devices of domestic 'guilds'. The formal affinity of the lantaar with the circularly formatted rock art motifs is readily apparent, direct analogues existing at Dudumahan for some of the illustrated lantaar designs; the association of form and the colour red in the lantaar empowered by the kawoel presents a further obvious parallel with the rock art. The careful location of the rock art, emblazoned high on sea-facing cliffs and associated with images of boats and seafaring 'warriors' lends some strength to the analogy. Under the Pax Neerlandica, the seafarers of Geurtjens' day were, as he describes them, adventurers first and traders second: '...peu importe le motif, pourvu qu'on voyage' (1910: 334). In an earlier age, warriors in boats may have been more purposeful in their voyaging.

I have argued elsewhere (Ballard 1988) that elements of the Dudumahan site constitute part of a major stylistic tradition, originally restricted 'culturally' to Austronesian-speaking enclaves, and locationally to sea-cliffs, with a preference for high visibility and some difficulty of access, and a loose association with local mortuary rituals. For the purposes of this paper, comparison is restricted to the sites of Ilikerekere at Tutuala in Timor, and the Arguni complex in the MacCluer Gulf (Bintuni Bay). Although the sites of Seleman Bay and the Tala River on Ceram (Röder 1938a), Kaimana (Cape Bitsjari) and Namatote (Cator 1939) on the Irian Jaya coast, Matgugul Kakun on the south coast of Buru (C. Grimes pers. comm.), and Lie Kere and Lie Siri in Timor (Glover 1972) almost certainly fall within the bounds of this tradition (see Figure 1), they are either too fragmentary or too poorly published to permit useful comparison.

As described successively by Cinatti (1963-unseen), Almeida (1967) and Glover (1972), the rock art site of Ilikerekere is a high limestone cliff facing seawards from the Tutuala scarp on the eastern tip of Timor. The paintings are generally executed in a range of red hues comparable to those at Dudumahan, the exceptions being instances of retouch or addition in black and green to the red designs, and some independent designs in a yellow pigment. The few non-figurative designs for which illustrations are available, such as rayed concentric circles (Glover 1972: pls. 3:15, 3:16), are broadly encompassed within the motif range at Dudumahan, though there are local elaborations (e.g., Glover 1972: pl. 3:14).

The anthropomorphic figures at Ilikerekere are strikingly similar in almost every respect to the grouped anthropomorphs at Dudumahan: characteristics such as waisted torsos, heads shown in profile, flexed legs, and arms extended and raised, often holding weapons, are common

to both sites. Figure 7a is reconstructed from a projected slide taken by Mulvaney during a visit to the Ilikerekere site with Glover in 1966. The circular girdle, the prominent penis of the central figure and the squared shoulders are all features echoed at Dudumahan. Again, as at Dudumahan, boats constitute the major component of the non-anthropomorphic figurative designs. More specifically, the sailing craft (Glover 1972: pl. 3:12), and the simple, mastless 'x-ray' hull (Glover 1972: pl. 3:13, to the left) at Ilikerekere find obvious parallels in the Dudumahan designs 3.iii and 4.ii, respectively. Though quantitative comparisons are impossible at present, the degree of similarity in site location, in motif and in stylistic detail is sufficient to propose that the two sites represent closely related expressions of a common artistic tradition, and possibly some unity of function.

The Arguni complex of some 40 sites is probably the most significant and, to date, certainly the largest assemblage of rock art in the Southwest Pacific (Röder 1938b, 1956, 1959, and see Rosenfeld this volume). The detailed comparative analysis warranted for Arguni and the other 'Austronesian' sites is scarcely begun, and comparison is restricted to a limited range of features common to Dudumahan and the Arguni sites. The close resemblance proposed here between the rock art sites of Kai and Arguni is far from original in conception: Bastian (A. Langen 1885: 410), Tichelman and de Gruyter (1944: 36-37) and Reisenfeld (1950: 566), amongst others, have made this simple connection. In general terms, the Arguni sites consist of paintings on wave-cut limestone sea-cliffs associated ritually, at least in the 1930's, with burials in adjacent caves and niches. Röder's distinction between the four phases, Tabulineten, Manga, Ota and Arguni, finds parallels at Dudumahan in so far as the characteristic features of each phase are also evident at the latter site, and the general stratigraphic rule of black on red is repeated (a still more recent white is added at Arguni); yellow designs are also present at Arguni, again in small numbers (Röder 1959: 119-120).

Parallels between the respective motif suites abound: the Arguni sites have a considerable number of, and range of variants on, the rayed concentric circle motif (Röder 1959: 94-pls. 10, 11; 96-pls. 3, 4; 109-pl. 36; 110-pl. 1; 115-pls. 3, 4; 123-'Boam'; 147-fig. 29). In the light of the excerpts from Geurtjens quoted above, it is particularly interesting to find that Röder notes the presence of these same 'sun' symbols painted on the prows of old boats and boat-shaped coffins placed in niches in the Arguni cliffs (1938b: 88). In another, probably unrelated, instance of contemporary affinity, Röder noted that women passing one of the Arguni cliff-sites would take great care to cover their faces or look away from the rock art (1959: 129). Complex non-figurative motifs from Dudumahan that are closely matched at Arguni include the 'skeletal' motif (Röder 1959: 115-pl.6; 147-pl.25; 125-pl.5; 137-pl.10), the symmetrical curvilinear designs, known to Röder as 'spiral labyrinths' (for a bewildering range of forms see Röder 1959: 96-pl.3, top left; 101-pl.1; 108-pl.11; 109-pl.20; 113-pl.1; 123-'Boam'; 124-pl.2; 125-pl.2; 142; 144-

pls.14,15,21,24; 149-pl.7; 152-pl.7a; 154-pl.31), and A. Langen's "Calvary" (Röder 1959: 144-pl.16).

Although the suite of figurative motifs at Arguni is similar in scope to those at Dudumahan and Ilikerekere, it differs in its emphasis on fish as the dominant component. The distinction between zoomorphic and anthropomorphic forms is far less certain at Arguni than at the two other sites, and there is no evidence of the distinctive 'warrior friezes'. Though the style in which the zoo/anthropomorphs at Arguni are portrayed is generally less precise, the 'x-ray' foot common at Dudumahan is reproduced in at least one instance at Arguni (Röder 1959: 126-top right hand corner of pl. 1). Finally, depictions of boats are a common feature of the Arguni sites (see Röder 1959: 137-pl.10; 153-pl.30; 155-pl.8), though Röder assigns most of them to his more recent phases. I have not adopted Röder's phases in analysing Dudumahan, though the Arguni sites may offer the best opportunity to propose a relative chronology from internal evidence alone; the wealth of associated midden deposits at Arguni, and presumably at other similar sites, will provide a much firmer basis for determining antiquity, and our understanding of what it is that constitutes significant variation in motif and style must stem from consideration of the rich literature on Melanesian art.

The rather unsatisfactory procedure employed in this paper in which designs, motifs and other characteristics of different sites are juxtaposed, is a wearying process with severe limitations. However, given the restricted goal of establishing fundamental links between geographically distant sites this level of approach is perhaps initially sufficient. In summary, the sites of Dudumahan, Ilikerekere and the Arguni complex appear to share a common basic repertoire of non-figurative motifs and hand-stencils, combined with regional variations in emphasis within a similar range of figurative motifs. Like the lantaar symbols on Kai, these sites are addressed physically and probably functionally to the sea. The observation that in Eastern Indonesia, it is the sea, and not the land, that serves as the medium for social interaction, is platitudinous; but in what is still a largely unknown field, the comparison of seemingly distant coastal sites may thus provide a valid framework for more general archaeological enquiry in Eastern Indonesia.

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