Chapter 4

The Cultured Rainforest Project: Preliminary Archaeological Results from the First Two Field Seasons in the Kelabit Highlands, Sarawak, Borneo (2007, 2008)

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Introduction

Past theories of landscape have often separated people from their physical environments. However, new notions of ecology that aim to chart the full set of relations within both the physical and social worlds are now emerging. Such approaches do not privilege the material or the social, help to break down divisions between culture and nature, and concentrate instead on the mutual shaping of people and the physical world. In the case of tropical rainforests they are commonly imagined as pristine environments which have survived for millions of years and which are relatively untouched by human intervention. However, in the case of the tropical rainforests of lowland Borneo, archaeological research in the Niah Caves, Sarawak, has found evidence of forest burning, sophisticated hunting practices, and plant manipulation, dating as far back as the first modern humans using the cave at least 50,000 years ago (Barker et al. 2000, 2001, 2002a, 2002b, 2003, 2007). To take this work further, the Cultured Rainforest Project was initiated to investigate the long-term and present-day interactions between people and rainforest in the interior highlands of central Borneo (Fig. 4.1). The Kelabit Highlands, Sarawak, were selected as the study area because they are inhabited by rice-farming Kelabit peoples who also practise hunting and gathering, and — until recently — by Penan hunter-gatherers.

Over the past 20 years, anthropological research focused on the longhouse community of Pa’ Dalih in the southern Kelabit Highlands (Fig. 4.2) has highlighted the present-day and recent practical and cosmological significance of the forest and mountains for Kelabit farmers (Janowski 2003). The ethnohistory of the Penan is also comparatively well studied (Sellato 1994). However, the antiquity of occupation in the Kelabit Highlands by hunter-gatherers and/or farmers was unknown before our project, though ground stone tools recovered from subsurface deposits by local farmers hinted at a pre-Metal Age occupation of the Kelabit Highlands (T. Harrisson 1965: 142). The region was also known to be rich in ancient monuments such as “megalithic” stone structures (T. Harrisson 1958), but their antiquity and histories of use were simply matters of speculation.

The Cultured Rainforest Project has necessarily adopted an interdisciplinary methodology, combining anthropological, palaeoecological, and archaeological approaches. To investigate the relatively recent past requires drawing analogies with, and looking for differences in relation to, the present. Palaeoenvironmental analyses of sediment cores are being used to chart the development of the landscape and its vegetation histories, not only in response to factors such as climate change but also in terms of “anthropogenic” factors such as burning and clearance by hunter-gatherers or agriculturalists. The archaeological investigations aim to bridge these two disciplines and provide a context-secure chronology of land-use (see also Barker et al. 2008, 2009). This paper summarises the archaeological findings of the first two field seasons.
Figure 4.1: Northern Borneo showing the location of the Kelabit Highlands, Sarawak, and other locations mentioned in the text: 1. Niah Caves; 2. Bario; 3. Pa’Dalih. The inner boxed area is shown in detail in Figure 4.3 (Illustration: L. Farr).
Environmental Setting

The Kelabit Highlands are divided into northern and southern regions. The northern area is dominated by the Bario basin, a broad, flat-floored, swampy plateau which drains into the Dappur River, which further south joins the Kelapang to form the Baram River. The Bario basin is bounded to the west by steep hillslopes in turbiditic shales and sandstones. Peat-filled depressions across the floor of the plateau reach c. 3 m in depth; a core taken near the modern airstrip has revealed an unbroken peat sequence that dates back approximately 50,000 years (Barker et al. 2009). The Southern Highlands (Fig. 4.3) are dominated by uplifted shales and sandy turbites. Here, the upper Kelapang valley is characterised by a series of steep, projecting, and inter-digitating ridges of turbiditic sandstone/shale units. Expanses of flat river terraces on the valley floor are limited. South of Pa’ Dalih, the valley broadens and its floor contains a series of alluvial terraces. In-filled palaeo-channels of the Kelapang River on these terraces have been deepened and regularised for wet-rice cultivation. Cores taken in a number of palaeo-channels between Pa’ Dalih and Batu Patong revealed banded sediments up to 5 m thick, with recurring charcoal horizons from ~6000 BP suggesting episodic and recurring burning probably related to human activity and land clearance (Chris Hunt, pers. comm.). The earliest definitive evidence for rice agriculture consists of phytoliths of domesticated rice in the upper segment of a core taken in a palaeochannel in the village of Pa’ Dalih, associated with a radiocarbon date of the last few hundred years.

Archaeological Investigations

Aspects of the archaeology of the Kelabit Highlands were first described by Tom Harrisson (1958), but the first systematic survey was undertaken in 2005 by the International Timber Trade Organization (ITTO), with the purpose of identifying key sites for protection before logging. This work mapped c. 50 sites across the Kelabit Highlands, principally megalithic sites and cemeteries. In May 2006, a two-week pilot study around Pa’ Dalih in preparation for the Cultured Rainforest Project established that...
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the ITTO survey was an accurate guide to the distribution of major archaeological sites, but that the archaeological record was richer and more complex. Over 30 archaeological sites were located. Based on these data, a series of site types was defined using objective descriptions, the five most numerous being: old settlements (that is, locations of ancient occupation sites; ruma ma’on); megalithic sites; (non-megalithic) cemeteries (menatuh); ditch cuttings (nabang); and rock shelters. Secondary criteria define various sub-groups of sites, for example those megalithic sites with rock art (batu narit) and megalithic sites which are cemeteries and those which are not. Other, less numerous, site types include canopy-cuttings (kawang), rock-cut shelves, fish-trap sites, and salt-springs (lobang main). Sites which cannot be grouped under these headings, for example rock outcrops identified in Kelabit myths, are classified as “sites of cultural significance”.

In July 2007, as many different types of sites as possible, from a range of topographic locations, were investigated to establish their age or ages. In total, 18 archaeological features were investigated with test trenches at 13 locations (two rock shelters, one current settlement, three old settlements, three megalithic sites, two Dragon Jar cemeteries, and two ditch cuttings). Unless otherwise stated in the following account, the trenches measured 1 m x 1 m. In August 2008, a selection of the more promising sites was investigated including three old settlements and two megalithic sites. In conjunction with continued excavation at two old settlement sites, geophysical surveys were carried out to assess the ability of these techniques to identify subtle archaeological remains in tropical rainforest conditions and to investigate site structure and organisation.

**Rock Shelters**

The potential for sediment accumulation at cave and rock shelter sites and the fact that such localities have often been attractive to people for habitation means that they offer the potential for discovering a “deep prehistory” for human occupation in the Kelabit Highlands. Unfortunately, large caves are scarce in the predominately sandstone and shale geology of the region. Two rock shelters have been investigated in the Southern Highlands so far.

*Lepo Batuh* (literally “rock shelter”) is an overhang used as an overnight camp for hunting trips (Fig. 4.4). The site is connected to the local story of the pre-Christian forest spirit Pun Tumid. When Pun Tumid and his brother were camping at *Lepo Batuh* a rock fell on his heel and he was unable to return to the longhouse. He told his brother to return home and continue to hunt “hairy ones” (pigs), while he would remain in the forest and hunt “hairless ones” (humans). Pun Tumid was a spirit that young men, in particular “shamans”, befriended and from whom they obtained substances of power to kill and cure (Janowski 2003). A flat sediment-covered platform under the rock shelter measures 32 m x 4 m. Excavation revealed 20 cm of dark to mid-brown, Figure 4.4: The Lepo Batuh rock shelter, looking south. Scale: 2 m. (Photograph: L. Lloyd-Smith).
charcoal-rich, sediment. Material recovered from this included earthenware, a piece of stoneware, metal objects including lead shot and a glass fragment, as well as small burnt bone and mollusc fragments. The majority of this material was recovered from the upper half of the cultural deposit. A radiocarbon date of 2550±40 BP or 810–530 cal. BC (Beta-237853) was obtained from charcoal in the base of the layer. This suggests that, though the stratigraphy is very disturbed, the site may have been used as an overnight camp repeatedly over a considerable period.

Lobang Balang ("tiger cave") is a large collapsed sandstone overhang on the watershed ridge between the Bengar and Daan rivers. The collapsed rubble has formed numerous small cavernous holes, the largest of which could have been used for shelter. However, their inspection revealed no cultural deposits. During the visit Telona Bala, our guide from Pa’ Dalih, identified an area of cut rock that, after cleaning, was revealed to be a roughly hewn animal face, possibly a large tiger (Fig. 4.5). The carving measures c. 50 cm x 50 cm. Telona Bala had known nothing of the carving and regarded its discovery as confirmation of a story his father related to him that describes the killing of a mythical tiger. Excavation at the base of the rock carving revealed 30 cm of light brown yellow clay with occasional charcoal. A few centimetres above the natural yellow clay, seven fragments of cut/flaked sandstone, likely to be residual from the carving of the rock face, were recovered. From the manner of its manufacture, the carving was probably produced with metal tools, and is atypical of other carved rock in the region, for example, the human figures at numerous sites across the highlands (Harrison and O’Connor 1970: 316–7). While the site is unlikely to have been used as a camp in the historic past and contains no occupation deposit, the carving certainly post-dates the rock collapse and makes the location an important cultural site: a physical link to a well known story in the region.

**Settlement Sites**

Old settlements (ruma ma’on) occur in two distinct topographic locations: ridgetops and river terraces. According to folk memory, ridgetop sites were established for defensive reasons prior to contact
developing with the Brooke administration of Sarawak in the late 19th century. The establishment of peace and the cessation of head hunting in interior Sarawak made the need for defensive locations redundant and settlement is said to have moved to the river terraces: all of the surveyed sites on the Kelapang terraces are locally believed to have been occupied within the last 100 years. Three old settlement sites have so far been successfully investigated with test excavations: one ridgetop site and two river terrace sites.

The ridgetop site, *Ruma Ma'on Ra'an Berangan* (“old settlement at the ridge-pass with berangan fruit”), is located on a c. 100 m by 50 m spur that projects northeastswards from a larger east-west ridge. Numerous red firewood trees (*kayuh belaban sia*), regarded by local informants as a good indicator of old habitation locations, were growing at the site. A logging road had cut through the site creating a 100 m long section (Fig. 4.6). Cleaning revealed a pale brown-beige leached soil 20–30 cm thick, sealing a feature filled with a charcoal-rich dark-grey clay-silt (Fig. 4.7). Excavation exposed a 60 cm by 60 cm oval feature with near vertical sides curving sharply to a flattish base 25 cm deep. The central fill was richer in charcoal and a darker grey than the edge fill. The shape of the cut and the nature of the fills suggest a large posthole, presumably from a substantial building. A 2 cm-thick carbonized branch from the central fill yielded a radiocarbon date of 400±40 BP or cal. AD 1430–1640 (Beta-237854).

The first river terrace site, *Ruma Ma'on Dakah*, was last inhabited two generations ago. It comprises a flat promontory (c. 70 m by 30 m) of fine alluvial silt, set back from the river on the inside of a meander. Initial excavation revealed abundant evidence for the last phase of occupation, including earthenware pottery, iron objects, iron slag, and plastic, burnt stones and burnt clay. A second trench revealed a lower stratified horizon containing abraded earthenware, and a small posthole where a piece of Chinese Qing dynasty porcelain was found. Charcoal in the posthole yielded a radiocarbon date of 3770 ± 40 BP or 2310–2030 cal. BC (Beta-237849). Although this presumably represents residual charcoal and does not date this earlier phase of occupation, the date and the stratified nature of the archaeology in this trench hint at the long tradition of settling river terraces.

Figure 4.6: The ridgetop settlement *Ruma Ma'on Ra'an Berangan*, looking northeast along the road cutting. The crouching figure just visible to the left of the main figure and 1 m ranging pole is cleaning the section shown in Figure 4.7 (Photograph: G. Barker).
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Magnetometer and resistivity surveys identified a series of linear and rectilinear features (Barker et al. 2009). Both survey methods also revealed possible posthole or pit features that tend to align with the linear features. The features tend to concentrate towards the long edges of the promontory. Excavation of Trench 3, sited over a linear feature in the centre of the site, revealed the southern edge of a possible gully (12 cm deep) filled with mid-dark grey/brown silty clay. A number of earthenware sherds and a large flat piece of heavily corroded iron, probably part of a cooking vessel, explaining the iron spike in the magnetometer survey, were recovered from this deposit. The edge of this depression was marked by several burnt and non-burnt stones. Trench 4, sited over a much weaker positive magnetic signal (suggestive of a less magnetically distinct or deeper buried feature) towards the northern side of the promontory, revealed a concentration of large river-rolled burnt stones, with earthenware sherds, animal bone fragments, charcoal between and underneath the stones, and fragments of burnt clay beneath the stones. Underneath the stones was a marginally lighter coloured deposit, up to 16 cm thick, of brown grey fine silt sand, in which was found a scatter of partially refitting earthenware sherds; underneath this was the edge of a gully-like feature, 7 cm deep, oriented north-south and filled by a dark brown charcoal-rich sand/silt. No finds were discovered in this lowest layer. The burnt stones, pottery and burnt clay could explain a positive magnetic response in this area and the underlying linear gully-like feature could explain the positive linear feature identified on the magnetometer survey results.

In interpreting the results of the geophysical surveys and archaeological excavations, the architecture of traditional (pre-1960s) Kelabit longhouses is informative (Lian-Saging and Bulan 1989). Longhouses were raised above the ground on posts, the latter standing on flat stones or set into postholes. Stones were also used in flat clay hearths to support cooking pots. The only dividing wall ran lengthways down the middle of the longhouse, separating the kitchen/main living area (the dalim, literally “inside”) containing the cooking hearths (tetal) of each family, from the tawa’ area used by men for craftwork. Here there was a raised platform along the outer wall on which hearths were situated and on which young men and visitors slept. Built off the back of the dalim were the areas for washing. Pigs roamed free under the longhouse, where domestic waste was disposed of. The shallow archaeological features at Ruma Ma’on

Figure 4.7. Possible posthole at the ridgetop settlement site of Ruma Ma’on Ra’an Berangan, looking east. Scales: 1 m and 30 cm (Photograph: G. Barker).
Dakah can be associated with the last occupation of the site. The southern edge of the gully in Trench 3 possibly represents one long side of the longhouse. The stones and burnt clay in Trench 4 may derive from a collapsed hearth, possibly the domestic cooking hearth (tetal) in the dalam side of the house. A distance of c. 12 m between these two features is a reasonable width for a traditional Kelabit longhouse. In this interpretation, the tawa’ side of the longhouse would have been to the south, along the middle axis of the promontory. Whether all features identified by the geophysical surveys reflect aspects of the same structure seems unlikely. The concentration of aligned magnetometer features in the southern area of the survey area may reflect an earlier phase of occupation at the site. Thus, the overall impression is of a palimpsest of features from multiple periods of occupation, corroborating the archaeological findings in Trench 2. It is also apparent that, rather than being centrally placed along the promontory, the longhouses were oriented along the edges of the terrace.

The third habitation site, Ruma Ma’on Taa Payo, is locally known as both an old settlement and the site of a deer enclosure (taa payo). Located on the eastern side of Kelapang River, across from Ruma Ma’on Dakah, it comprises a headland spur of soft clay c. 15 m above the river that measures c. 100 m west-east by c. 50 m north-south. The site is delimited to the east by a c. 5 m wide and c. 0.50 m deep curvilinear depression, perhaps a humanly-cut ditch but possibly a palaeochannel of the Kelapang. The ground to the west is covered with concentrations of river-rolled stones. Visual and geophysical survey of the 40 m western end of the promontory, combined with excavation of a 2.5 m x 1 m trench across a concentration of stones, revealed that these are probably collapsed stone walls.

Excavation showed that one of the main central walls measured 80 cm across and stood to a height of 25 cm, with the stones that once formed its upper portion lying on either side. Small pebbles and fire-cracked stones were packed between the larger cobbles, and the edges of the wall were lined by stacked flat-sided ovoid stones. A total of 1,593 earthenware sherds were recovered from the 1 m wide trench, a quantity suggesting that their inclusion was deliberate, possibly to bind the stones together. One fragment of a red glass bead was found directly underneath the wall. Below the wall was a large feature 1.30 m

Figure 4.8: North-facing section through stone wall feature and possible underlying ditch at old settlement site Ruma Ma’on Taa Payo. Note the posthole in the left hand side of the bottom of the trench. Scales: 2 m and 0.30 m (Photograph: L. Lloyd-Smith).
across and with a flat base 60 cm below the stones, cut into the yellow clay sub-soil and filled with light grey sandy-silt, its straight east and west sides suggesting that it was a ditch (Fig. 4.8). Several burnt stones were found in the lower portion of the fill. Charcoal from the upper fill yielded a radiocarbon date of 1620±40 BP or cal. AD 340–550 (Beta-237850). A 10 cm wide, 45 cm deep posthole was found on eastern edge of the ditch, hinting that it might have been fenced along one side. Planning a 16 m by 13 m area around the excavation revealed a possible oval enclosure c. 12 m across, and beyond this the magnetometer survey revealed a complex of curvilinear features which may be additional stonewall enclosures (Barker et al. 2009).

Local knowledge describes the site as a deer enclosure, though in that case, given its monumental nature, it is surprising that it is not attributed to an ancestor, real or mythical, like other substantial monuments. Soil analysis is currently underway to reveal whether the site was indeed used for penning animals, deer-penning being an activity still practised by some Kelabit communities. Prior to the introduction of water buffalo, which are said to only have been introduced to the Highlands during the mid-1800s (Janowski 2003), sambar deer (payo) were caught and kept in bamboo enclosures to provide large quantities of meat for feasts (Labang 1962: 384). Certainly, the site is unique in the Highlands. Today there is neither use of stones for building walls, nor any local memory of such architecture. Using hundreds of thousands of stone in the construction of the site indicates the social, and possibly economic, importance invested in this particular location.

**Megalithic Sites**

Until the 1950s, the Kelabit raised stone monuments to commemorate important individuals at secondary funerary feasts. T. Harrison (1958) described a range of such “megalithic” structures and the ITTO survey began plotting their distribution across the highlands. The Cultured Rainforest Project, focused in the southern Highlands, is now illuminating patterns in their landscape setting and contextual associations, and establishing a tentative relative chronology.

Four types of megalithic structure have been recorded: stone jars (batu nawi); slab-built structures (batu nangan); stone mounds (perupun); and standing stones (batu senupid). Stone mounds are said to have been made to protect the valuable possessions of a childless individual; and slab structures are thought to be graves placed both separately and in clusters at cemetery sites (menatuh). So far the project has surveyed ten megalithic sites in the upper Kelapang, including four stone mounds, three isolated slab-built structures, one rock-cut shelf site, a single stone jar, and a larger megalithic site with both stone jars and slab-structures. Small excavations have been made at two stone mounds, one large (Perupun Payeh Telipa) and one small (Perupun Long Kelit), as well as at the single stone jar site (Menatuh Long Kelit), and the large megalithic site (Menatuh Long Diit).

Menatoh Long Diit is located on a low terrace c. 200 m south of the confluence of the Kelapang with the Diit rivers. Approximately 60 m to the southeast lies a Dragon Jar cemetery also referred to by the same name. The megalithic site consists of a group of fourteen stone jars (average dimensions: 1.6 m high by 0.6 m wide) and seven slab-structures (average dimensions: 1.5 m long, 0.7 m wide, and 0.7 m high). Five of the jars stand upright, the other nine are partially or completely fallen (Fig. 4.9). All of the jars are carved from a grey/white, coarse crystalline quartzite sandstone that glitters in sun light. All of the slab-built structures were disturbed, but appear to have had a common architecture, with thicker (20–25 cm wide) upright supports set lengthways in the ground, and thinner (10–15 cm thick) slabs laid flat on top. One structure appeared to have a re-used stone jar fragment as an upright.

Excavation was made at the base of one of the standing stone jars to investigate the nature of activity and to expose its foundations to retrieve datable material. Numerous clusters of artefacts were unearthed both on top of and beneath a large collapsed stone jar fragment. Artefacts included 11 small ovoid earthenware vessels, one tubular earthenware vessel, and 20 small earthenware cylinder-shaped objects, probably ear-lobe stoppers. Fragments of two stoneware vessels were found, one a Thai Sawankhalok bowl dating to the 14th or 15th century AD (Chin 1988: 101, fig. 117), and two blue and white porcelain bowls dating to the Late Ming period (16th century AD). Smaller items included whetstones, iron blades, copper alloy rings of the type traditionally hung from distended earlobes,
small copper-alloy bells, and over 400 glass beads. These artefacts are thought to have been placed in association with burials placed at the site up until the conversion of local people to Christianity in the 1930s. A quantity (45 g) of cremated human bone and teeth was also found. As cremation burial has not been practised by the Kelabit in living memory (T. Harrison 1962: 10–2), these remains may represent an earlier use of the site, perhaps the original burial remains in the stone jars.

The base of the stone jar stood in a shallow cut 25 cm deep. River-rolled packing stones were placed on one side of the stone jar. Whilst the antiquity of the stone jars and slab cist structures is still to be established (14C dates are pending), the site was certainly used for burial up until 1950s, the dead therefore being placed where previous dead were known to rest. Burial was said to be in wooden coffins, but also reputedly inside the stone jars or within the slab structures. The reason for the separation between these burials and those associated with the Dragon Jars 60 m away is unclear, and will be the focus of further investigations.

The other stone jar site investigated is Menatoh Long Kelit, a single stone jar located on a 30 m wide headland formed by the confluence of the Kelit and Kelapang rivers. A 2 m x 1 m trench revealed a 90 cm deep foundation packed with stones (Fig. 4.10). Uppermost, two large flat stone slabs lay up against the stone jar, directly underneath of which were unburnt human cranial fragments. The stone jar stood on the base of the foundation trench, with only 80 cm showing above ground. Amongst the packing stones were iron blades, glass beads, bronze bells, and whetstones in near perfect condition. In the basal fill of the foundation trench was a significant quantity of smashed pottery, probably from a single vessel. A radiocarbon date of 240±40 BP or cal. AD 1510–1960 (Beta-237848) was obtained on charcoal retrieved from the lower packing fill. It is possible that the stone jar is considerably older than this, and was moved at some time in its history to its present position (see below, Discussion).

The large perupun (mound) monuments reach up to 30 m in diameter and over 2 m in height. Investigation of such a large monument would be a massive undertaking, so a much smaller stone mound (c. 4 m in diameter by 0.8 m in height) at the Long Kelit confluence was investigated. It is situated at the break of slope, at the beginning of the headland spur on which the single stone jar is located. Six layers of tightly packed stones were removed in two opposing quadrats (Fig. 4.11). The lowest stones of the...
Figure 4.10: The stone jar at Menatoh Long Kelit, looking southwest. Scale: 1 m (Photograph: G. Barker).

Figure 4.11: Excavations at stone mound Perupun Long Kelit, looking north. Scale: 1 m (Photograph: D. Britton).
perupun were large flat oval river-rolled slabs, laid flat; the core of the monument consisted mostly of fist-sized river-rolled stones; the uppermost two layers were again of large flat slabs, laid flat. Around the southern edge of the perupun was an arc of kerb stones, several of which were stacked one upon the other. Within the southern quadrant, the lowest layer of stones lay upon a charcoal-rich layer of darker mid-grey clay silt. This deposit measured up to 0.15 m thick and may represent a remnant buried soil horizon. A charcoal sample from this layer produced a date of 501±22 BP or cal. AD 1408–1441 (UBA-1221).

It appears that the entire northern side of the monument has been substantially disturbed. Just outside of the expected position of the northeastern kerb-stones, refitting basal sherd of a brittleware vessel were found, separated by at least 20 cm and found both in and below the upper layer surrounding the stones. The vessel is a typically Chinese form of the 13th/14th centuries (John Miksic, pers. comm.), though how old it was when deposited at the site is unknown. Close to the northern extent of the disturbed stones, 15 cm below the ground surface, was a fragment of a faceted whetstone (7 cm x 2 cm x 2 cm; Fig. 4.12). The distribution of the brittleware vessel and whetstone suggests that they were originally contained within the stone mound, but were displaced during disturbance. Whether the displacement occurred as the result of natural or human action cannot be known with certainty, though the almost total destruction of the monument’s northern edge points towards the latter.

Ditch Cuttings

The Kelabit have two words to describe ditch cuttings relating to their function. Any ditch excavated for a practical purpose, such as drainage gullies to take rainwater away from longhouses, or irrigation ditches for wet rice fields, is an abang. Until the initial post-war period, the Kelabit also excavated ditches as memorials, called nabang. Marking the landscape by cutting a nabang was an important way of
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memorialising a dead individual, the ditch being considered to provide a path for the soul to travel along to reach the after life (T. Harrisson 1959a: 307). Eleven nabang have so far been recorded within 4 km from Pa’ Dalih, and many more probably lie scattered across the landscape. They are strikingly similar in size, measuring c. 2–2.5 m wide and weathered to 1–2 m in depth, and are invariably cut through high steep-sided ridges. Nabang Arur Kukud, for example, a ditch measuring 8.2 m in length, 3.10 m in width at the top, and c. 1.20 m in depth, cuts through the c. 30 m high and 5 m wide ridge between the Arur Kukud stream and Keliit River. The excavated section (Fig. 4.13) revealed little sediment development within the ditch, the primary fill consisting of weathered rock from the exposed sides of the nabang.

Dragon Jar Cemeteries

Two Dragon Jar cemeteries were investigated in the 2007 fieldwork. Menatoh Pa’ Diit lies on the eastern side of the Kelapang River where fragments of 13 broken jars extend over a 40 m by 15 m area. One jar was discovered c. 30 m to the northwest of the main concentration, half way towards the megalithic site of the same name, suggesting that the site’s real extent may be larger. Many of the jars were set in the ground up to their shoulders or neck (Fig. 4.14). Where upper portions of jars were visible, they had been deliberately removed at the shoulder, most likely during the burial rites, of primary and then possibly secondary interment. At least seven different jar types were observed, and can be dated between the 18th and 19th centuries AD based upon published comparisons in B. Harrisson (1990) and Adhyatman and Ridho (1984).

Menatoh Payeh Belanai is also located on the eastern side of the Kelapang, c. 600 m and across the Diit River from Menatuh Long Diit. The 18 jars were placed in a more-or-less straight line, some forming clusters. All jars had had the upper portion removed in a clean break. Sixteen jars were of the same tall ovoid type (height 107 cm, rim diameter 23 cm, base diameter 24 cm, wall thickness 0.6 cm), with a plain neck and an everted thickened unglazed lip smeared with brown slip. The lower body and

Figure 4.13: Nabang Arur Kukud (“memorializing” ditch cut through ridge crest), looking south. Scale: 2 m. (Photograph: G. Barker).
the flat base are also unglazed and coated with a brown slip. The fired clay is a greyish-beige colour. The jars are decorated with stamped and moulded reliefs and covered by a brown glaze that drips down to the lower body. On the shoulder there are eight vertical, grooved, thumb-pressed loop handles. Below these are six clusters of flowers and scroll motifs. Encircling the body are two horizontal horned dragons with upturned heads, each facing a cloud scroll; beneath the dragons’ body is a similar motif of a flower scroll, and above the dragons’ head is also a cloud scroll. This type of jar dates to the 17th and 18th centuries AD (Adhyatman and Ridho 1984: 159, no. 151). The two remaining jars probably date to the 18th and 19th centuries AD, comparisons being no. 158 published by Adhyatman and Ridho (1984: 162), and no. 118 published by B. Harrisson (1990: 145).

Many Dragon Jars are still owned by the residents of Pa’ Dalih and have been passed down between generations as heirlooms. They are believed to possess lalud or life force. The potency in them is and was associated with the potency of their owners: wealthy and high status people are considered to have more lalud than others. In the past, apart from being precious objects in themselves, Dragon Jars functioned as secure containers for water, rice, and in particular rice-wine (borak). The Kelabit categorize Dragon Jars according to their relative age, with older ones being considered more valuable as well as more potent. Most of the jars in the village can be dated to the 18th and 19th centuries AD, with one possibly dating to the 15th century AD.

Discussion
So far we have obtained five range-finder radiocarbon dates from the Kelabit Highlands archaeological sites which, combined with the radiocarbon dates from the palynological cores, provide the first absolute chronology of human-landscape interactions in interior Borneo. Although the Bario peat core dates back 50,000 years, the first clear indication of human activity in the Highlands, in the form of charcoal horizons and palynological indicators of forest clearance, dates to around 4000 BC. Radiocarbon dates from secure archaeological contexts stretch back almost 2000 years (Table 4.1). Earlier than this, there
Table 4.1: Radiocarbon dates from excavated archaeological sites in the southern Kelabit Highlands

<table>
<thead>
<tr>
<th>Site</th>
<th>Context</th>
<th>Sample</th>
<th>Lab. No</th>
<th>Date BP</th>
<th>Calibrated (2 Sigma)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ruma Ma'on Dakah</td>
<td>Possible buried soil horizon from earlier phase of settlement occupation</td>
<td>Charcoal</td>
<td>Beta-237849</td>
<td>3770±40 BP</td>
<td>2310–2030 BC</td>
</tr>
<tr>
<td>Lepo Batuh</td>
<td>Lowest layer of shallow rock shelter deposit (max. 20 cm). Probably entire depth of sediment bioturbated.</td>
<td>Charcoal</td>
<td>Beta-237853</td>
<td>2550±40 BP</td>
<td>810–530 BC</td>
</tr>
<tr>
<td>Ruma Ma'on Taa Payo</td>
<td>Buried feature (ditch) sealed by stone wall</td>
<td>Charcoal</td>
<td>Beta-237850</td>
<td>1620±40 BP</td>
<td>AD 340–550</td>
</tr>
<tr>
<td>Ruma Ma'on Ra'an Beragan</td>
<td>Fill of post-hole at ridgetop settlement site</td>
<td>Charcoal</td>
<td>Beta-237854</td>
<td>400±40 BP</td>
<td>AD 1430–1640</td>
</tr>
<tr>
<td>Menatoh Long Kelit</td>
<td>Packing fill in foundation trench of standing stone jar</td>
<td>Charcoal</td>
<td>Beta-237848</td>
<td>240±40 BP</td>
<td>AD 1510–1960</td>
</tr>
</tbody>
</table>

are two dates obtained on loose charcoal samples that date back nearly 4000 years. Lepo Batuh produced flaked quartzite demonstrating the use of lithic technologies at some time in the past and, while the date of 2310–2030 cal. BC from Ruma Ma'on Dakah probably represents re-worked charcoal, the lower soil horizon at this site does indicate earlier occupation, an interpretation corroborated by the buildings palimpsest revealed by the geophysical survey. Although pre-2000 BP dates from secure archaeological contexts are required, it seems reasonable to expect that human occupation in the Kelabit Highlands stretches far beyond the Metal Age, the beginning of which is believed to be between c. 500 BC and AD 0 in Borneo.

Charcoal sampled from underneath the stone wall at Ruma Ma'on Taa Payo dates to cal. AD 340–550 and is possibly associated with the clearance of the site prior to the construction of the walls. The underlying ditch may date considerably earlier. To this evidence for riverside settlement in the Kelabit Highlands over the past 1500–1700 years can be added the secure date from the ridgetop settlement of Ruma Ma'on Ra'an Beragan, where a charcoal sample with a short internal age produced a date of cal. AD 1430–640. While subsequent re-occupation of the site cannot be ruled out, this demonstrates the certain antiquity of ridgetop as well as valley-bottom settlement in the Kelabit Highlands, considerably earlier than the folk memory of upland sites being a response to insecurity and inter-communal violence in the immediate pre-Brooke decades of the late 19th century.

Megalithic sites also have long histories of use and re-use. Based on their state of preservation, and the fact that fragments were reused in slab-structures, the stone jars appear to be amongst the oldest megalithic monuments in the study area. All of the stone jars recorded in the upper Kelapang so far are made from the same sandstone and locating the source of this material would provide valuable data on the origins of these monuments. There are both similarities and differences between the two investigated stone jar sites. Menatoh Long Diit contains at least 14 jars, compared with the single jar at Menatoh Long Kelit. While cremated human bone was found at Menatoh Long Diit (although the association with the original use of the stone jars is unsure), unburnt human cranial fragments were found at Menatoh Long Kelit. The artefacts found at the base of the stone jars at Long Diit may be historically recent additions, but they bear a number of similarities to those found in the fill of the foundation trench of the Long Kelit stone jar, in particular the large numbers of whetstones and iron blades. Given these observations, it may be that the Long Kelit stone jar has been re-used, possibly moved from its original location and re-raised. The charcoal sample from the foundation trench dated to cal. AD 1510–1960 supports this interpretation.
Most of the stone mounds are standardised in size, shape, topographic location, and distribution. In the southern Kelabit Highlands at least, they occur singularly at regular distances on river terraces and appear not to be directly associated with any other megalithic structures or Dragon Jar cemeteries. The investigation of the small stone mound *Perupun Long Kelit* revealed deliberate architecture. The Long Kelit *perupun* is unusual in being very small compared with other known *perupun* in the southern Highlands, which are up to ten times larger. The latter are traditionally regarded as repositories for many valuable possessions, including jars, ceramic plates and bowls, beads and gongs of wealthy heirless individuals (T. Harrisson 1959b: 110–2). The artefacts are said to have been placed in a pit dug into the ground, subsequently filled with stones and covered over by a large mound of stones to deter robbers. Neither a pit nor a range of valuables was discovered in the Long Kelit *perupun*, but excavation did reveal evidence for considerable care and investment in its construction. The occurrence of artefacts — including exotic and, perhaps antique, trade items within the monument and locally-made earthenware on or around it — further attest to a long history of people visiting and re-visiting the site after its initial construction sometime after the 15th century AD.

The first two seasons of the Cultured Rainforest Project have provided a wealth of new archaeological data that have more than fulfilled our expectations. A provisional sequence of human settlement, megalithic funerary activity, and landscape impacts has been constructed that in combination stretches back several thousand years into a hitherto unknown past and that links in complex ways with the Kelabit histories, real and mythical, of recent centuries. The project’s priority now is to collect data that will help delineate and interlink these separate ancient, recent, and present-day stories of how the peoples of the Kelabit Highlands have interacted with and shaped their landscape.

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References


