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ABSTRACT

The preliminary results of the second (2001) season of fieldwork by the Niah Cave Project are presented, together with further information from initial studies of materials collected in the first (2000) season. The principal features of the sedimentary sequence in the West Mouth have been established, together with a preliminary relative sequence of the human use of the cave from the initial (Pleistocene) occupation to very recent times. The location and sedimentary context of the Deep Skull have been established with reasonable confidence, and C14 dates of c.43-42,000 BP have been obtained from immediately above the skull's position, confirming the general accuracy of the date for the skull from the earlier excavations. A vestigial 'Mesolithic' archaeology has been found of pits, wooden structures, and middens. Small-scale investigations of part of the 'Neolithic' cemetery indicate a complex range and sequence of funerary activity, and there are midden deposits of broadly similar antiquity elsewhere. 'Mesolithic' and 'Neolithic' deposits sampled in 2000 have yielded microscopic evidence for the collection of many wild plant foods, but not for the presence of domesticated rice.

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by

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which the human occupation and use of the cave have to be situated and understood.

INTRODUCTION (GB)

The Niah Cave Project is re-investigating the archaeological stratigraphies of the famous Niah caves on the edge of the Gunong Subis, a limestone massif situated on the coastal plain of northern Sarawak. Tom Harrisson, Curator of Sarawak Museum between 1947 and 1967, excavated at several entrances to the cave system, but by far the largest investigation was in the West Mouth of the Great Cave from 1954 to 1962, his wife Barbara continuing until 1967. Their most notable discovery here was a human skull (the so-called 'Deep Skull') in deposits containing charcoal that yielded a C14 date of *c.*40,000 years ago, the earliest evidence for human settlement on Borneo (T. Harrisson, 1958, 1970). In addition to this evidence for Palaeolithic occupation in the late Pleistocene, the excavators found evidence for the utilisation of the West Mouth by Epipalaeolithic or Mesolithic foragers in the early-mid Holocene, and then for a cemetery of pottery-using Neolithic people (assumed to be agriculturalists) dated to between about 3000 BC and AD 800. Imported Chinese ceramics in the medieval period attested to the later exploitation of the cave, probably by local people such as the antecedents of present-day Punan foragers, responding to the lucrative Chinese market for birds-nest soup (an important source of which are the nests of the hundreds of thousands of swiftlets inhabiting the caves). Today, birds-nesting in the Niah caves continues to be a major source of income for local people, along with the collection of swiftlet and bat guano for sale as fertiliser. The Niah excavations therefore received international attention because the Harrissons' discoveries indicated a remarkable sequence of domestic and funerary use of the cave spanning more or less the entire human history of Borneo, unique not only for Borneo but for the region as a whole. Following the discovery of the Deep Skull, the site was declared

a Historical Site in 1972, and its surrounding forests designated a National Park in 1974. Niah is currently under consideration by UNESCO for designation as a World Cultural Heritage Site.

Although numerous reports on their Niah work were published by the Harrissons and their collaborators, the excavations were never published in a comprehensive form and the stratigraphic framework remains uncertain. Tom Harrisson wrote on many occasions that the site lacked a coherent stratigraphy, and accordingly he excavated deposits in horizontal spits. The chronology of occupation is also very uncertain, given the nature of the excavation techniques and the fact that several key radiocarbon dates were obtained early in the development of the method. The excavations yielded large numbers of animal bones, human bones, pottery, stone tools and so on, but the relationship of much of this material culture to its archaeological context remains imprecise. Further excavations were conducted by Zuraina Majid in 1976 to attempt to clarify these issues, and to obtain more samples for C14 dating, but whilst her results were very valuable in their own right, they were unable to resolve the major uncertainties of the Harrissons' work (Zuraina, 1982). If we are to maximise understanding of this remarkable site, we need much greater stratigraphic precision and far more detailed information on the cultural sequence (that is, how people were using the cave in different periods). These in turn need to be placed within a framework of regional climatic change and local environmental change between *c.*40,000 BP (if that is the date of initial occupation) and the present day.

The Niah Cave Project is therefore attempting to understand the human history of the cave in its landscape context, from the earliest occupation to the present day, through an inter-disciplinary programme of archaeological excavation and environmental science. To achieve this aim the project has three principal objectives: (1) to clarify the nature and chronology of the cave stratigraphies and of the human uses of the cave; (2) to

establish the climatic and environmental contexts in which the human uses of the cave were situated; and (3) to link the newly established sequence with the excavation archive, so as to provide a modern analytical framework for the earlier discoveries. The result of this integrated investigation is intended to be a new 'archaeological history' of the Niah caves that should inform on major debates about the settlement history of the region, including for example: the timing of the Pleistocene colonisation of Borneo; the nature of the landscape around Niah encountered by these Pleistocene foraging groups, and their strategies for exploiting it (given, for example, the debates about whether foragers can live in rainforest by foraging alone: Bailey and Headland, 1991; Groube, 1989); the timing of the transition from foraging to farming in the Holocene, and the environmental and social context in which a commitment to agriculture developed (Beavitt *et al.*, 1996; Bellwood, 1990); and the impact of metallurgy and trade on foragers and farmers in the historic period.

The first season of fieldwork in August/September 2000 demonstrated the extraordinary potential of the site, and the strong prospects for the project being able to meet its objectives (Barker *et al.*, 2000). The earlier excavations of the West Mouth were accurately planned for the first time (Fig. 1). We demonstrated from the exposed faces of the Harrisson trenches in the lower part of the site (the part nearer to the cave mouth) that there is clear stratigraphic integrity, albeit highly complex, and different in many respects from the descriptions given by Harrisson in his various papers. It is clear that the earlier excavations have removed over 90 per cent of the archaeological sediments in the zone of the West Mouth, but we were able to locate and sample a series of intact archaeological deposits of varying antiquity in the late Pleistocene and Holocene. Studies were initiated on the modern ecology of the cave, to inform on the biological processes affecting the taphonomy of the cave sediments. We located and cored rich polliniferous deposits at several locations

between the caves and the coast, and found indications in these cores and in preliminary geomorphological mapping for a complex history of sea-level and landscape change. Initial models of pottery production and exchange were established from clay and fabric characterisation.

The objectives of the second season of fieldwork in April 2001 were: to continue the programme of stratigraphic investigation and sampling within the cave, and in particular to attempt to establish stratigraphic links between the cave mouth zone where work concentrated in the first season and the zone of the Neolithic cemetery further inside; to undertake limited excavation of selected deposits relating to different periods of human activity from Pleistocene to recent, in order to collect information on the nature of human activities at different points in the stratigraphic sequence; and to continue the programme of investigation of the modern and ancient landscapes around the cave in which Niah's human history must be situated. This report summarises the findings of this fieldwork, together with some of the preliminary results that are emerging from the laboratory studies of sediments sampled in the first season.

SEDIMENTATION AND STRATIGRAPHY (DG,CH, SMcL, JR, MS)

Many of the uncertainties relating to the archaeological sequence at the site stem from Tom Harrisson's understanding of the origins of the sediments that infill the cave mouth. His observations of both modern sedimentological processes in the cave and the sediments through which his team excavated led him to conclude that biological materials were predominant in the sequence. Guano from bats and swiftlets in the roof area as well as animal remains were believed to be the primary materials present. Perhaps not surprisingly, he came to believe that the archaeological sequence in the West Mouth could be viewed as

a simple and continuous vertical accretion. Equivalence of depth of find below the surface came to be regarded as a surrogate for equivalence of age. Key deposits in this interpretation were the white and brown guano-rich deposits that cover much of the surface of the site, and widespread, relatively thick and comparatively homogenous mixes of white clasts in a pink matrix, often referred to in the publications as 'pink and white' deposits. The early radiocarbon dates that were produced from the excavations supported this view, in as much as they indicated a sequence of dates that became progressively older with passage down through the sediments. This combination of the latest radiometric source of information on antiquity and Harrisson's understanding of sedimentary origins may have contributed to his reluctance to publish as section drawings his understanding of the lithosequence present, compounding the difficulties in the subsequent interpretation of the publications in terms of lithostratigraphy and biostratigraphy. Later attempts to understand the various archaeological remains preserved in the excavation archive through radiocarbon dating did not detect the simple depth-age relationships which Harrisson claimed. Clearly, understanding the archive as well as the site itself has to focus on the origins of the sediments and the stratigraphic relationships.

The sequence described below demonstrates that, whilst the Harrissons were correct in regarding part of the sequence as biological in origin (the guano-rich layers), in substantial part the deposits are not the result of simple accretions of biological materials, notably the 'pink and white' deposits, which are described below as Units 3 and 3R. Likewise, the analysis reveals substantial stratigraphic complexity in which episodic activity and lateral mass-movements are shown to have been of notable significance.

The sedimentary sequence in the West Mouth

The following landforms, lithofacies and stratigraphically significant landforms have now been identified in the West Mouth. Currently accumulating are: flowstones; swiftlet and bat droppings; black-decomposed biological detritus in pools; and accumulations of leaves, plant and animal remains that have drifted onto or fallen into the sediments. Additionally there are: litter; midden materials associated with the cave entrance house (the custodians' lodging) and the various exploitations of the cave; and tip from earlier excavations, which is present in varying quantities. Overland flow and stream runoff are reworking and channelling the cave sediments, which are also being bioturbated by vertebrates and invertebrates.

Provisional understanding of the key stratigraphic units and relationships is given below. The relationships are illustrated as Sections *ABC, ABD,* and *EF* in Figure 2, the locations of which are shown in Figure 1. It is emphasised that understanding is likely to change as knowledge develops through the progress of the project. The sediments now identified in the northwest entrance to the West Mouth, including the rock shelter or overhang along the northern wall (Area A in Figure 1) and the so-called (by the Harrissons) 'Hell' trench or deep sounding to its south, where the Deep Skull was found, can be provisionally generalised into four main sediment units and a series of geomorphic features. The main elements of the units can be summarised, as follows:

Oldest units (CD)

Three geomorphological features older than the cave infill sequence described below have been noted (see Fig. 1 for locations). The first is a *boulder lobe* c.3-5 m wide and 14 m long extending down the southwestern edge of the excavation area, dipping westwards towards the cave mouth (Fig. 3). It appears to be a mass of rockfall boulders, now well rotted, derived from within the cave. The extent of this weathering in