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SUMMARY

Preliminary site survey and limited evaluative investigations at Sungai Santubong in March 2006 confirmed the presence of extensive deposits of iron slag, with associated Chinese pottery, fragments of tuyeres and wasted stones. Also on the site were several apparent troughs of uncertain function cut into the tops of boulders. The work confirmed the high archaeological potential of the site for furnishing *in situ* evidence for the prehistoric iron working industry and possibly ritual and/or settlement activity. Re-evaluation of excavated materials from previous sites on the peninsula confirmed the presence of clay furnace wall fragments and tuyeres.

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INTRODUCTION

In March 2006, a group from the universities of Leicester and Oxford undertook evaluative investigations at a plot of land at Sungai Santubong, to the north of Kuching, Sarawak (lat. 1° 43' 6.2"N; long. 110° 19'30.8" E). The work formed part of a two-week pilot study of ironworking sites on the Santubong peninsula, an area known to be the focus of a major medieval ironworking industry, on the basis of investigations by Sarawak Museum in the 1950s and 60s. The project also incorporated a re-evaluation of excavated materials, a review of site records and a walkover of selected sites. The field evaluation of Sungai Santubong revealed evidence for deep and extensive deposits of slag with associated fragments of tuyère,

hammer stones and imported Chinese pottery on a hitherto unidentified site. Also discovered on the site were a series of boulders into which had been carved troughs of uncertain function. The area was subject to rapid survey to map the main concentrations of iron slag, and the positions of the trough stones. Two small areas of slag were cleaned to determine the potential for *in situ* material and an assessment was made of the depth of surviving deposits on the site and the potential for evidence of *in situ* furnaces.

SITE DESCRIPTION

The site is known as Sungai Santubong, at Lot 766 Block 2, Salak Land District, on the southern shore of the Santubong peninsula in Sarawak. To the west is the Malay *kampung* of Santubong. The land is currently used as an orchard, containing a large number of fruit trees and at the time of the project, had recently been cleared of ground cover. It is bounded to the west by a public road and to the south, by a private driveway leading to the house at the centre of the estate to which it belongs. The land is characterised by rocky outcrops and boulders, especially at the north and western perimeters, and exhibits a general slope from north to south, from about 20 m above sea level down to about 15 m at the southern boundary, on the seaward side. On the east side of the orchard, there is a steep scarp down to cleared and levelled land in front of the landowner's house.

SANTUBONG GEOLOGY

The Santubong peninsula is composed of the Tertiary Kayan Sandstone, a relatively resistant rock which gives rise to the sharp peak of Gunong Santubong. This is underlain by the softer Cretaceous Pedawan Shale, forming the lower southern slopes of Gunong Santubong, and extending beneath the archaeological sites of Bongkissam, Bukit Maras, Sungai Sarawak, Sungai Jaong and Sungai Buah.

Weathering of the Pedawan shale has resulted in the widespread formation of iron laterite, considered to be the smeltable ore source for the Santubong iron industry. Weathering of the Kayan sandstone has produced localised deposits of gritty white clay. This material is much more refractory than the river clay (used for earthenware pottery) and was used to make the tuyères and kiln walls of the iron-smelting furnaces.

Gunong Sejinjang, the high ground immediately to the south west of Santubong across the Sarawak River, owes its elevation to a different rock type, one which has weathered to give a flatter profile than Gunong Santubong. Gunong Sejinjang was formed by a large body of hot basic igneous rock which intruded the Pedawan Shale, causing the latter to become hardened in the process. Both the basic igneous rock (mainly gabbros and dolerites) and the hardened (hornfelsed) shale were widely used as hammer stones for iron-making at Santubong.

ARCHAEOLOGICAL BACKGROUND

The Santubong Iron Industry

In the late 19th century, the archaeological potential of the Santubong Delta was first realised, as a result of the collection of surface finds of bead and gold by the growing local population, to satisfy visiting collectors and dealers, although little attention was paid to the area at this time by the Sarawak Museum (T. Harrison, 1969: 3). In 1947, a major archaeological and socio-economic project to investigate the whole Delta area and associated river systems commenced (*ibid.*, 4), including extensive excavations which were to go on throughout the 1950s and 60s under the direction of Tom Harrison, Curator of the Sarawak Museum. Harrison noted that the 'easiest way of detecting diggable sites was by the presence of metallic iron slag – seldom now showing on the surface, often deep in ground covered with dense vegetation or overlayed [sic] with estuarine mud' (*ibid.*, 5). The slag was generally associated with