New Data For The Prehistoric Chronology Of South Sumatra

Hubert Forestier, Dubel Driwantoro, Dominique Guillaud,
Budiman and Darwin Siregar

A Brief Reminder of the Prehistoric Research in South Sumatra

The island of Sumatra, and particularly the South Sumatra Province, is still a no man's land for prehistorical research. In fact, the North of Sumatra is better known than the South, due to a "Hoabinhian intensive resarch and focus" that has been carried out from the 1970's onward (Brandt, 1976; Glover, 1978; Soejono, 1984; McKinnon 1990, Simanjuntak, 1995 ; Moser, 2001). In itself, this very large island, stretching over 440 000 km2, offers a very interesting archaeological potential for field trip research, survey, and excavations.

The first prehistoric studies of Sumatra began in the 1960's with Prof. R.P. Soejono (1984) works on the Erdbrink's discoveries in Kalianda (Lampung) and in Kedaton (Tanjung Karang) or on those mentioned by Houbolt in the province of Bengkulu (Houbolt, 1940 ; Erdbrink cited in van Heekren, 1972). In the 1970's, Prof. R. P. Soejono continued his research on the palaeolithic artefacts found in the Bungamas and Lahat areas, and revealed the prehistoric richness of the southern part of Sumatra (Soejono, 1984). Initiated by Prof. R. P. Soejono, the archaeological survey of Sumatra was actively continued by Bronson and Asmar through their ambitious three month survey in 1973, along a route of about 9 000 kilometers going from the North to the South of the Island (Bronson *et al.* 1974). Later on, the same authors carried out the excavation of the Holocene cave of Tiangko Panjang in Jambi. This cave represents the first prehistoric cave site to be excavated by modern methods in Sumatra, and produced an industry of obsidian flake tools dated back to around 10 000 years B.P. (Bronson *et al.* 1976).

Twenty years later, the Pusat Penelitian Arkeologi Nasional field team investigated sytematically the rivers of the Martapura and Baturaja areas, amongst which the Ogan river, and confirmed the presence of many palaeolithic stone artefact (Jatmiko, 1995): a interesting way of research!

In 2001, the team of the Indonesian-French cooperation research project between the Pusbang Arkeologi Nasional and the IRD (Institut de Recherche pour le développement) started to investigate the Baturaja area (South Sumatra Province), in order to establish a prehistoric chronology of the region. During four years, we organised an intensive survey, with the sytematic excavation of some cave sites through a C14 dating program (Driwantoro *et al.*, 2001, 2002, 2004 ; Jatmiko *et al.* 2003). In this paper, we expose the synthetic results of four years of research in the Baturaja area (Guillaud ed., in

press 2006): the results of the excavation of the Pondok Selabe (SLB1) and of the Gua Pandan caves, both located to the Tertiary limestone formation of Baturaja, near the village of Padang Bindu. Those two caves close to the Ogan River revealed a comprehensive Holocene sequence; we also found an unexpected Palaeolithic lithic industry (Acheulian assemblage) in the beds of the Air Semuhun and Air Tawar rivers, two small affluents of the Ogan River.

To close this brief introduction, one should signal, beside the ancient period which is still under study, the other remarkable archaeological remains of the South Sumatra province. This wide province has acquired its reputation with the exceptional Megalithic remains of the Pasemah plateau around Pagaralam (van der Hoop, 1932), with the famous capital of the Sriwijaya kingdom, located to the present day city of Palembang, and with the mysterious "burial jar" still undated from Muara Betung near the village of Lahat (Sukendar, 1984 ; Soeroso, 2000).

Padang Bindu Territory : an Ideal Prehistoric Place

Padang Bindu[1] is a small village in the District Semidangaji, situated on the bank of the Ogan river, 35 kilometers upstream Baturaja, which is the principal city of the Kabupaten OKU (Ogan Komerin Ulu), in the province of South Sumatra (Fig. 1). The region of Baturaja is reknowned for its limestone outcrops in a forest environment, this particular relief being exploited for chalk and its numerous caves for the swallows nests. The area which has been surveyed, today covered with forest and some fields, presents a complex landscape combining large eroded limestone reliefs, traces of volcanic element, small hills, plateaus and small alluvial valleys suitable to agriculture.

Three kilometers away from the village of Padang Bindu, the karst of the Bukit Sayak (Fig. 2) display a large mosaic of caves, rockshelters, karst holes, dolines,... amongst which one finds the famous touristic cave of Gua Putri. These caves are encircled with many small rivers like the Air Tawar and Air Semuhun, offering a lot of diverse raw materials (large rocks, sheets, nodules) that have been used by prehistoric men, from the ancient Palaeolithic to the Neolithic times.

The Palaeolithic stone artefacts have been discovered in the small rivers (Fig. 3), associated with their raw material (flint blocks, hard rocks, etc.). The identification of other archaeolcgical sites in the Padang Bindu limestone area has proved rather easy, and at the end of the survey we had inventoriated more than 20 cave sites (Fig. 3) containing archaeological deposits, and presenting a perturbed upper level associated with ceramic sherds, shells and lithic remains mixed with ash and sand sediments. Pre-Neolithic and Neolithic

[1] 04° 04' 998'' South and 103° 55' 802'' East.

occupations have been identified in the upper layers of a lot of caves overhanging the rivers of Air Tawar and Air Semuhun (around 20 meters above their level). This limestone cliff area is called Pondok Selabe.

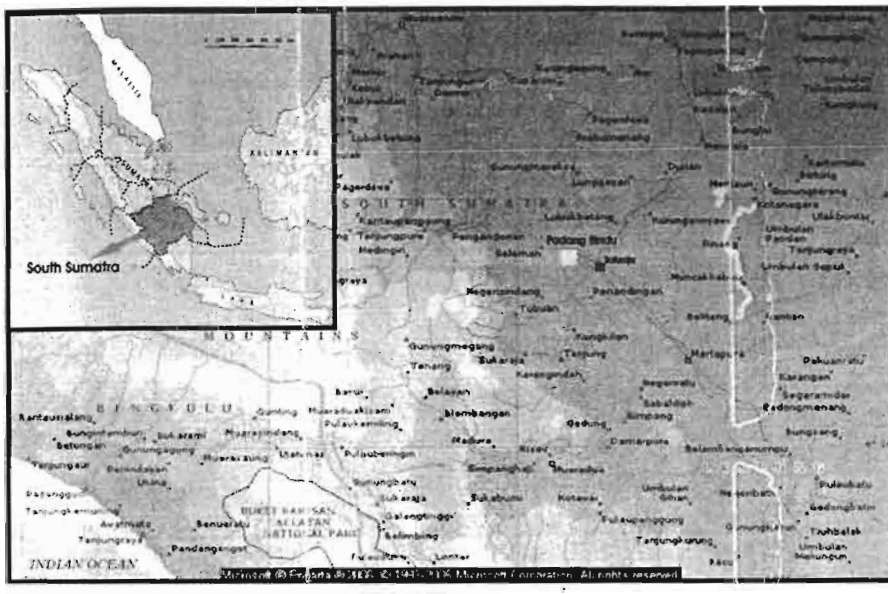

Fig. 1 : Situation of Baturaja, Padang Bindu village, South Sumatra.

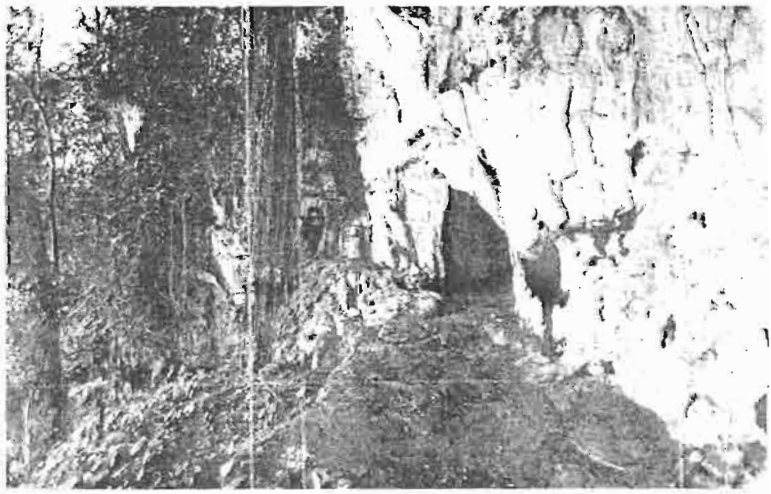

Fig. 2 : An example of the karst environment of Padang Bindu (Bukit Sayak) near SLB1 site.

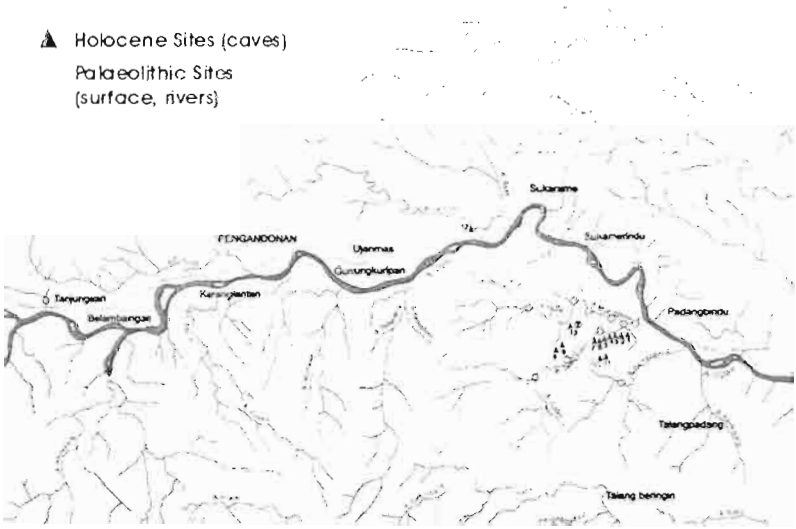

Fig. 3 : Location of the main prehistoric sites discovered during our survey in the Pondok Selabe area, village of Padang Bindu

The First Palaeolithic tracks in South Sumatra: Classic Acheulian Stone Tools

All of the paleolithic discoveries have been made in the beds and banks of the small tributaries of the Ogan river (Air Semuhun, Air Tawar, Ayakaman Basa and Dayang Rindu rivers), and most of them a few meters away from the Holocene caves. The Air Tawar and Semuhun provided the majority of our Palaeolithic stone artefacts (Fig. 4).

The tools are knapped on different raw materials following one technique only, the direct percussion with a hard hammer. The raw materials used for knapping are diverse, comprising chert (brown, yellow), fine andesite, basalt, fossilized wood, red jasper, quartzite, silicified brechia, sand stone, etc.

The Pondok Selabe area was an ideal living place during all the periods of Prehistory, especially for the hunthers-gatherers because the karsts offered a lot of springs and small rivers, the forest provided abundant resources such as food, plants and animals, and because it offered the natural protection of the caves.

The technological observations of the Palaeolithic tools allow us to recognise two major sketches in a global knapping strategy :

1- A sketch of debitage or knapping work :

It comprises a lot of big cores associated with large flakes with cortex (Fig. 6, n°2), retouched or not. When these flakes are retouched they provide

scrapers with bifacial retouch, denticulated, and clactonian notches. These voluminous cores are generally pyramidal or polyedrical with orthogonal removals, showing an "*Alterning Platform System*" of debitage (called APS) (Forestier, 2000). The APS is a basic method for the production of large an long flakes, and is based on a simple opposition between a platform surface and a striking platform. Basically, at the end of the debitage sequence, this method produces cores with amorphous, globular and polyedrical forms. Sometimes, when the sequence of debitage is short (around 3 or 4 flakes detached) the result is a pyramidal core. This APS method was frequent during the Lower Palaeolithic in Western Europe, Middle East or Africa. Many of these big flakes are retouched bifacially and result in scrapers or denticulates

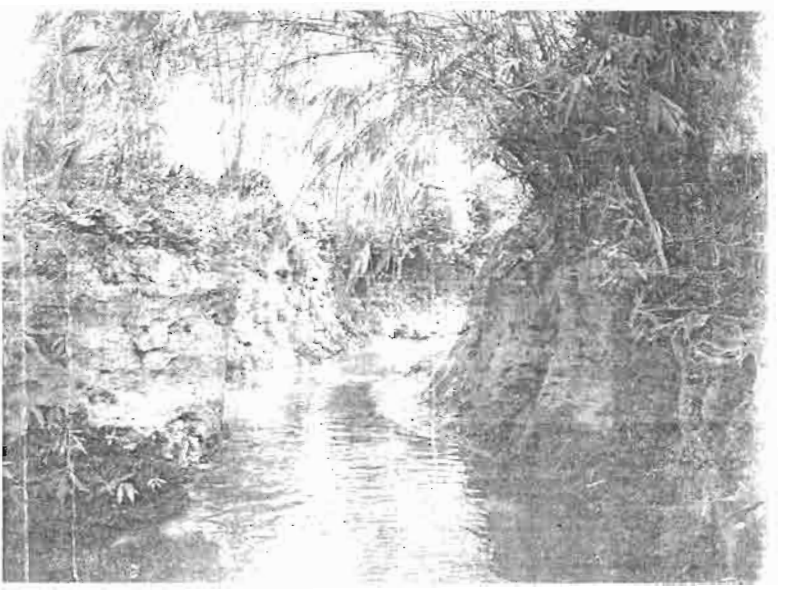

Fig. 4: The Air Semuhun and the karst erosion at work where the Palaeolithic artefact and raw material have been found *in situ*

2- A sketch of shaping (Fig. 5 and 6) :

At Pondok Selabe, the Prehitoric men also used a specific shaping method for the production of what we could call the conventional artefacts of the Ancient Paleolithic times, belonging to the Acheulian tradition : chopper, chopping tool, hand axe (biface), unifac., pick, triedrical pick, and clea- or flake. The bifaces are shaped directly on the initial blocks and more rarely on large flake.

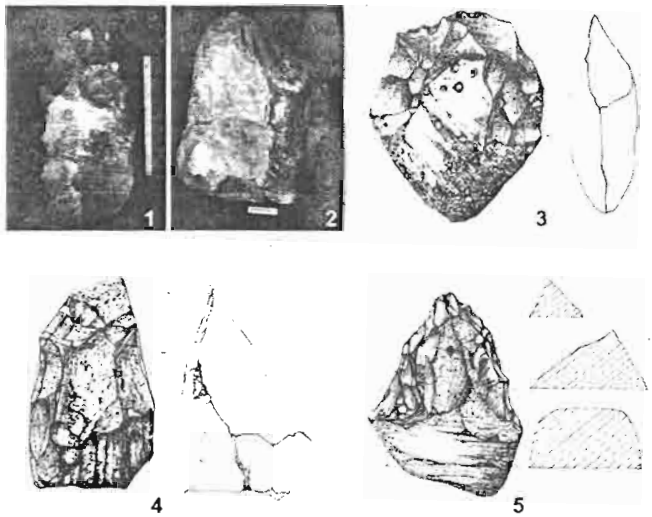

Fig. 5 : Palaeolithic artefact: hand axe in chert (no 1 and no 2), chopper in volcanic rock (no 3), a triedrical pick (no 4) and a bifacial piece on fossilised wood block (no 5)

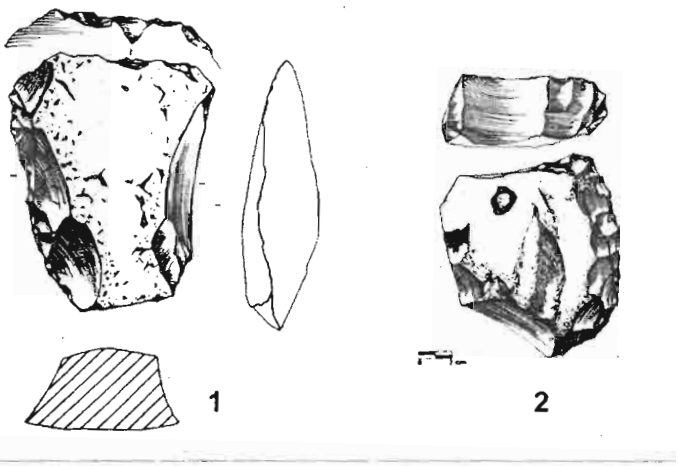

Fig. 6 : A classical cleaver on flake (no 1) and a massive side scrapper on flake (no 2)

This discovery of bifaces and cleavers in South Sumatra reveals an Acheulian period in the island, and leads us to compare this surface picking with the industry found in the Baksoko river in Java (Barstra, 1974, 1978), which proves similar in form, shape, raw material and types of tools. We are

therefore dealing with an homogeneous and classic Acheulian assemblage in Sumatra.

These palaeolithic artefacts of South Sumatra could be attributed to *Homo erectus* and join in the Acheulian tradition, which spread out from India and Nepal, via Southern China[2], to North Vietnam, and South to the Indonesian Archipelago, to South Sumatra, Central Java and South Sulawesi (Bronson *et al,* 1984; Forestier *et al.* 2005a). The Acheulian assemblage of Sumatra represents a new step for the understanding of the migration of *Homo erectus* and of his techniques in Southeast Asia.

Holocene sequences at Padang Bindu : another tale of two caves, Gua Pandan and Pondok Selabe 1 (SLB1)

Excepting the Hoabinian technocomplex, the Holocene and Neolithic aspects were not very well known in Sumatra. When our work started, there were almost no information about the Neolithic or pre-Neolithic implements, or about the environment and fauna of those periods.

Our excavations in Pondok Selabe 1 cave (SLB1) provides new informations for the understanding of prehistoric life during the last 10 000 years in the karsts of Padang Bindu. Gua Pandan and SLB1 are one of the 16 caves that we plotted on a map, and whose numerous surface artefacts signalled as presenting a real archaeological interest (Fig. 3). We will first present the older site of Gua Pandan cave, covering the early stages of the Holocene, and afterwards the SLB1 cave which extends the chronology until the metal age.

1- Gua Pandan : an Early Holocene lithic production

Situated at the top of the Bukit Sayak hill, Gua Pandan, at a distance of 180 meters from the Semuhun river, is the highest cave in the area. This big cavity oriented to the East measures 27 m x on 16,5 m and has two large openings, each one 3,50 m high (Fig. 7). The sedimentation is very important and the cave is still filled with archaeological deposits blocked by many rocks which fell from the ceiling.

At the surface, the soil is sandy, grey, powdery with many rests of river shells, animal bones and knapped stones in chert, silicified limestone and volcanic pebble. Immediately these findings informed us about the exceptional character of this cave and motived the excavation.

[2] For example: The Acheulian bifaces/hand axes of Bose basin are dated back 800 000 years (Hou *et al.* 2000), and the Acheulian assemblages exist also in Nepal, India, Pakistan and Vietnam

Fig. 7 : Gua Pandan cave and excavation area

A large excavation around 30 m2 (Fig. 7) has been organised and produced many stone artefacts, small rests of forest fauna (deer, wild boar, monkey) and shells. Dates obtained from level 2 and 3 are between 9270 B.P. and 6590 B.P (square H10, Fig. 8). These levels display a unique archaeological deposit, comprising some lithic artefacts so far unknown in South Sumatra. We identified diverse monofacial pebble tools (in chert and limestone) which were similar to the classic Hoabinhian tool-kit, called "*Sumatralith*" in the scientific litterature (see Fig.9). These monofacial tools/Sumatraliths were produced through a shaping method and were

associated with a production of flakes retouched in scrapers, notches or denticulated (Fig. 9).The raw material was brought back from the river and was various : chert, andesit, fossilised wood, jasper, sand stone, etc.

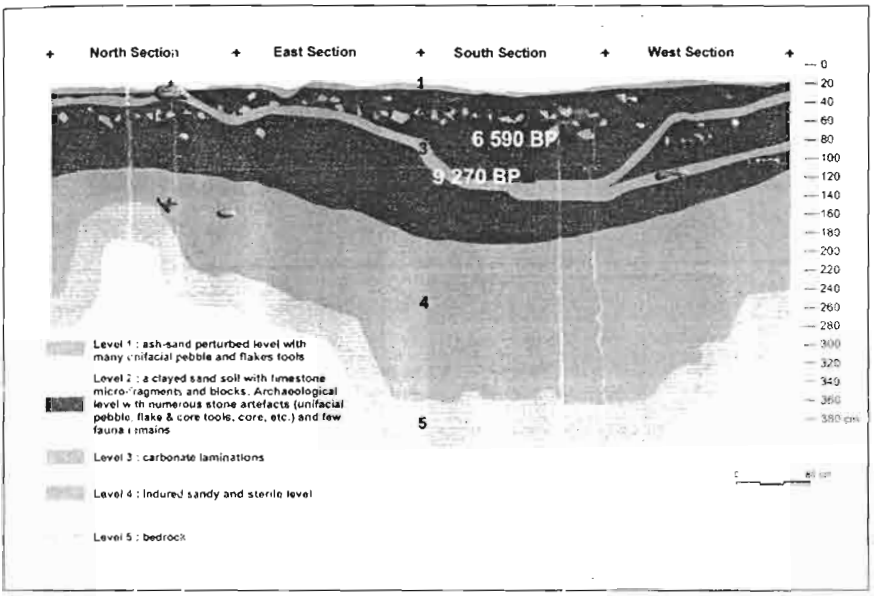

Fig. 8 : Stratigraphy of Pandan cave

The Gua Pandan stone tools and the dates obtained seem very similar to the ones of the Hoabinhian sites excavated in Northern Sumatra (Bronson *et al.* 1984 ; Moser, 2001 ; Forestier *et al.* 2005b) The Gua Pandan inform us on two points:

- the identification of the Early Holocene stone tools in cave in South Sumatra,
- the question of the "Hoabinhian expansion" through Indonesia within a much larger frame than was acknowledged.

The research on Hoabinhian should re3consider some topics: the scale of territoriality, the mobility of the groups, the geographical determinism of the raw material for the settlement choices, etc. Presently, the geographical extension of the Hoabinhian phenomenon in Indonesia has to be updated and the research must go on!

2- SLB1 (Pondok Selabe cave 1) : from the pre-Neolithic Period to the Metal Age

Located in the same limestone cliff, SLB1 cave (Fig. 10) lies a hundred meters away from Gua Pandan. This small cave (6 x 2,5 m) is located 15 meters away from the Air Tawar River. Between 2001 and 2004, the

excavations at SLB1 reached a depth of approximately 2 m. They disclosed a full mid-Holocene sequence with 3 distinct levels : Preneolithic, Neolithic and Metal age (Simanjuntak *et al,* 2004, 2005; Guillaud *et al.* 2005).

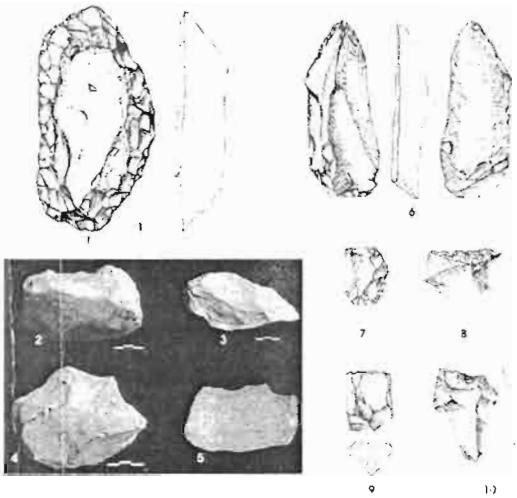

Fig. 9 : Example of Gua Pandan stone tools : pebble tools (no 1 to no 5): piece no 1 is a classic unifacial pebble (sumatralithe), others are unfacial pebble also with a important back, flake tools (no 6 to no 10): scrappers (lateral and distal)

Fig. 10 : SLB1 cave site

The faunal remains, continuous in the profiles, provide informations about the diet of Modern Humans living in the SLB1 cave during the last 5 000 years : freshwater shell and forest resouces such as *hystricidae, suidae, cervidae, cercopithecidae,* etc.

The base of the Pre-Neolithic level (see level 3-4, Fig. 11 and 12) revealed a date of about 4500 years BP. This aceramic level produced stone artefacts only, more precisely a macro-production of flakes and pebbles. Flake tools are retouched in scrapers, end-scrapers or notches. The knapping method is not Levallois and not laminar, and consisted in a basic knapping sequence based on an algoritlm system (altening platform system).

The Neolithic level noted 2 (Fig. 11 and 12) gave an age of 2700 BP. It produced a thin incised or corded pottery, faunal remains, numerous micro and macro-obsidian flake tools, and cores in obsidian[3], jasper or chert. The obsidian raw material used by the SLB1 prehistoric knappers indicates the existence of exchange networks with the volcanic areas of Sumatra (Kerinci, etc). The lithic artefacts have been produced by a basic knapping method, using a direct percussion with a hard hammer. The neolithic of SLB1 is very original in the absence of any polished stone adze or fragment of stone, grindstones, pounders, etc.

The upper layers of the stratigraphy revealed metal age implements associated with some intrusive recent burials.

Conclusion

This limestone area near Baturaja, through the resources it offered, is rather unique compared to the surrounding areas. Although it represents but a spot, it could be considered as a sort of "stopping-place" for human migration through times, and it seems to have retained the major traces of these episodes. The discovery of the main Prehistoric periods there should give the island of Sumatra the rank it deserves amongst the most important "archaeological places of interest", just like Java which participated to the global knowledge of the ancient history of Indonesia.

In South Sumatra, the ecological and geographical factors were combined for an optimal human occupation, and for the adaptation to the forest environment, from the most ancient times – the Acheulian (*Homo erectus*) – to the *Homo sapiens sapiens* cave occupation during the Holocene period. That is

[3]Some obsidian samples of SLB1 are still being analysed by M. Spriggs (Obsidian Sources Program in Asia-Pacific Region).

why the excavations of the caves revealed such a rich prehistoric occupation. The three prehitoric patterns of Hoabinhian, preneolithic and neolithic demonstrate that the same territory has been exploited in three different ways regarding the use of the environment and the technical degree of exploitation of the raw material.

All these results enrich the prehistoric chronology of South Sumatra. To the ancient Palaeolithic, preneolithic, neolithic, one must also add the metal age, which could be associated to the Historical period. As a conclusion, the results can be sketched in a synthetic model of human occupation through times in South Sumatra (Fig. 13 below).

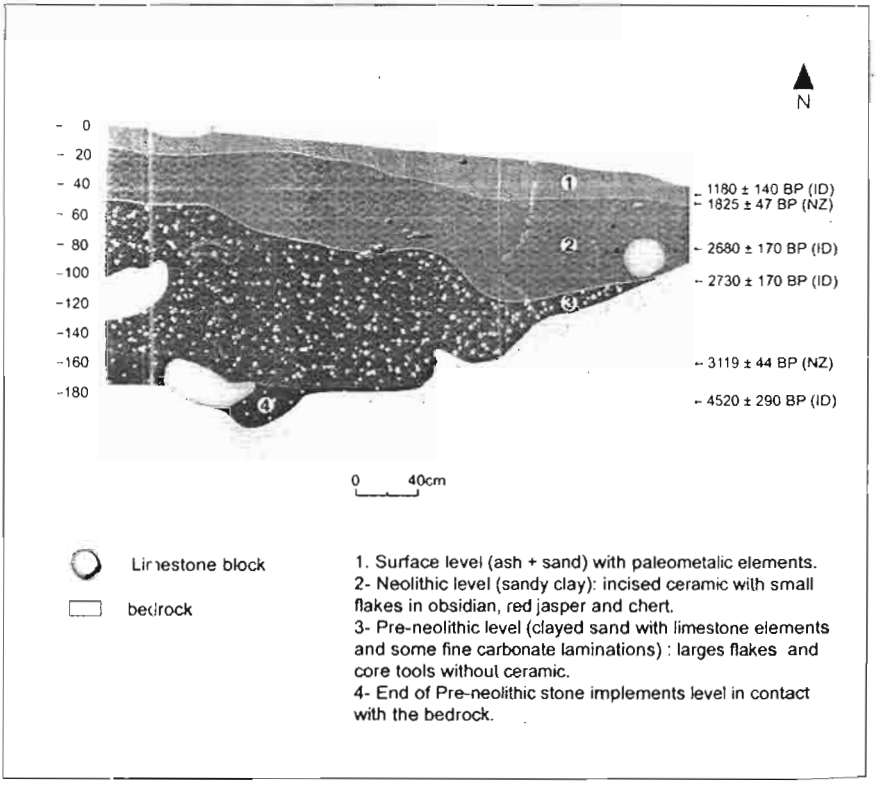

Fig. 11 : Stratigraphy of SLB1 cave

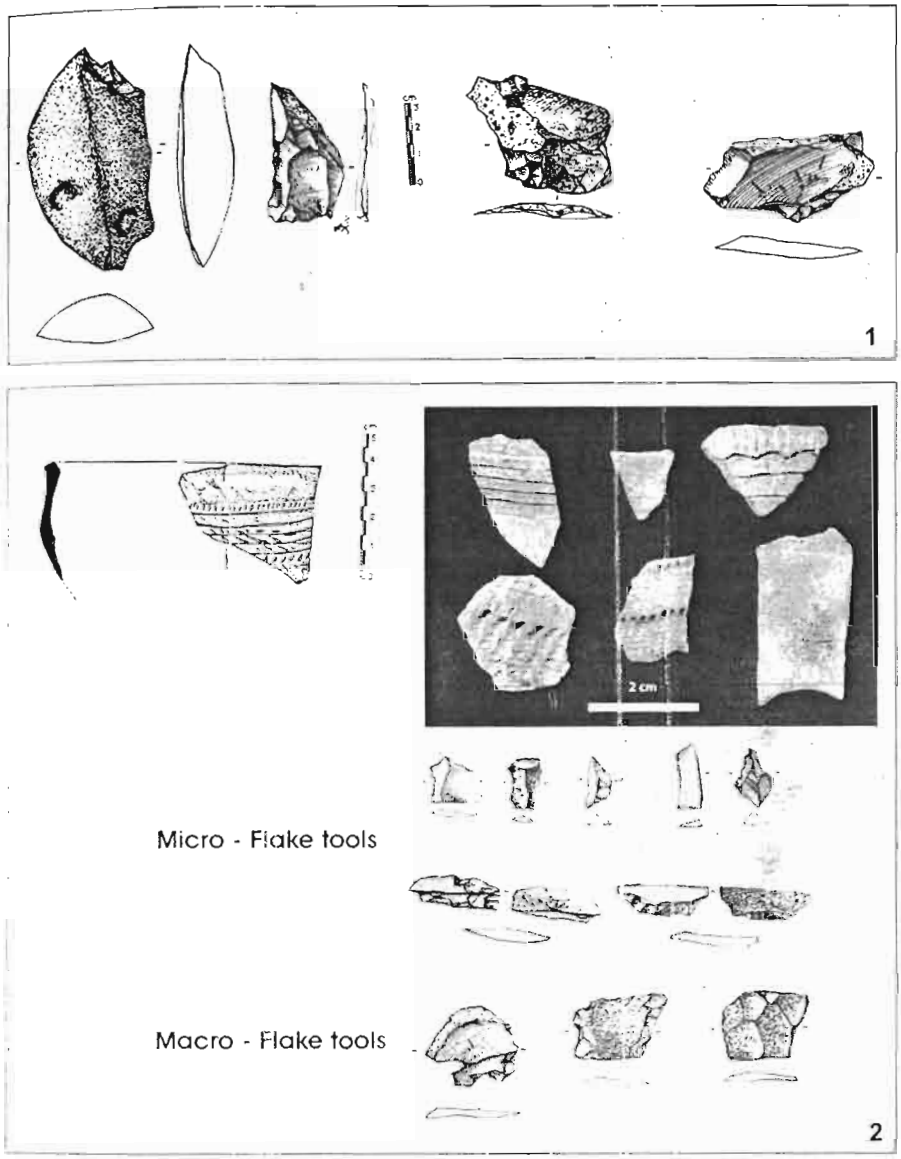

Fig. 12: Preneolithic (group no1) and neolithic (group no 2) artefacts of SLB1 cave

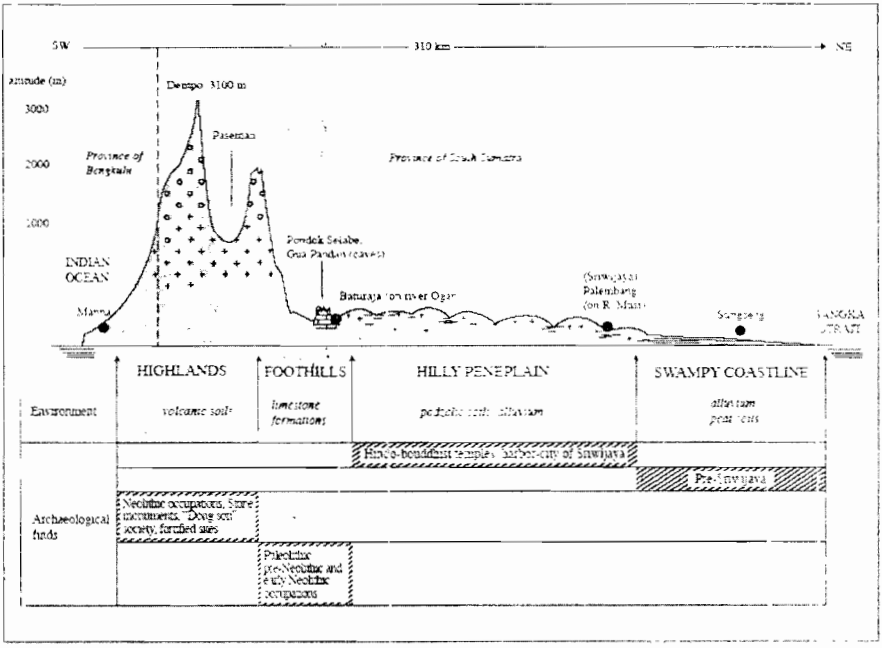

Fig. 13 : Section through South Sumatra: environments and archaeological periods

Bibliography

Barstra, G.J. 1974. *Contributions to the study of the Palaeolithic Patjitan Culture of Java. Indonesia*, Leiden, Brill.

Barstra, G.J. 1978. The Patjitan Culture : a preliminary report on new research. In: F. Ikawa – Smith (eds.), *Early Palaeolithic in South and East Asia*, p. 29-36.

Brandt, R.W. 1976. The Hoabinhian of Sumatra : some remarks. *Modern Quaternary Research Southeast Asia* 2, p. 49-52

Bronson, B, Wisseman, N. 1974. An archaeological survey in Sumatra, 1973. *Sumatra Research Bulletin*, vol. 4 (1), p. 87-94.

Bronson, B, Asmar, T. 1976. Prehistoric investigations at Tiangko Panjang Cave, Sumatra. *Siam Perspectives*, vol. 18 (2), p. 128-144.

Bronson, B, Glover, Ian. 1984. Archaeological radiocarbon dates from Indonesia. *Indonesia Circle* 34, p. 37-44.

Driwantoro, D, Forestier, H. 2001. *Laporan Penggalian Situs Gua Fondok Selabe, Baturaja, Sumatera Selatan*. Bidang Prasejarah Pusat Penelitian Arkeologi dan IRD, Jakarta.

Driwantoro, D, Forestier, H. 2002. *Laporan Penggalian Situs Gua Pondok Selabe (tahap II), Baturaja, Sumatera Selatan.* Bidang Prasejarah Pusat Penelitian Arkeologi dan IRD, Jakarta.

Driwantoro, D, Forestier, H. 2004. Penggalian situs Gua Pandan, Desa Padang Bindu, Kecamatan Semidangaji, Kabupaten OKU, Sumatera Selatan. *Laporan Penelitian Arkeologi.* Bidang Prasejarah Pusat Penelitian Arkeologi dan IRD, Jakarta.

Forestier, H. 2000. De quelques chaînes opératoires lithiques en Asie du Sud-Est au Pléistocène supérieur final et au début de l'Holocène. *L'Anthropologie*, p. 531-548.

Forestier, H, Simanjuntak, T, Driwantoro, D. 2005. Les premiers indices d'un faciès Acheuléen à Sumatra Sud, *Indonésie. Dossier d'Archéologie n°302 Spécial Asie du Sud-Est*, p. 16-17.

Forestier, H, Simanjuntak, T, Guillaud, D, Driwantoro, D, Wiradnyana, K, Siregar, D, Rokhus DA, Budiman. 2005. Le site de Tögi Ndrawa, île de Nias, Sumatra Nord: Les premières traces d'une occupation hoabinhienne en grotte en Indonésie. *Comptes Rendus Palevol* 4, p. 727-733.

Glover, Ian. 1978. Report on a visit to archaeological sites near Medan, Sumatra. *Bulletin of the Indo-pacific Prehistory Association* 1, p. 56-60.

Guillaud, D, Forestier, Simanjuntak, T., Handini, R. 2005. Anthropologie, espace et temps à Sumatra. *Dossier d'Archéologie n°302 Spécial Asie du Sud-Est*, p. 42-45.

Guillaud, D (ed.). 2006. *Menyelusuri sungai, Merunut Waktu .IRD-EFEO-Pusbang Arkeologi*, Jakarta. (in press)

Hou, Y, Potts, R, Yuan, B, Guo, Z. Deino, A, Wang, W, Clark, J, Xie, G, Huang, W. 2000. Mid-Pleistocene Acheulean like stone technology of the Bose Basin, South China. *Science*, vol. 287, p. 1622-1626.

Hubolt, J.H. 1940. Bijdrage tot de kennis van de verspreiding van palaeolithische artefacten in Nederlandsch Indie, *TBG*, 80, p. 614-617.

Heekeren, H.R. van. 1972. The stone age of Indonesia, *Verhandelingen KITLV*, LXI, Den Haag. (2nd rev. ed.).

Hoop, A.N.J. Th. A Th. Van der. 1932. *Megalthic Remains in South Sumatra*, Zutphen.

Jatmiko. 1995. *Laporan Penelitian Arkeologi di Situs Martapura dan Baturaja, Kabupate OKU, Provinsi Sumatera Selatan*, LPA Bidang Prasejarah Puslit Arkenas : Jakarta

Jatmiko, Forestier, H. 2003. *Laporan Penggalian Situs Gua Pondok Selabe (tahap III), Baturaja, Sumatera Selatan.* Bidang Prasejarah Pusat Penelitian Arkeologi dan IRD, Jakarta.

McKinnon, E.E. 1990. The Hoabinhian in the Wampu/lau Biang valley of Northeastern Sumatra: an update. *Bulletin of the Indo-pacific Prehistory Association* 10, p. 132-142.

Moser, Y. 2001. Hoabinhian, Geographie und Chronologie eines steinzeitlichen technocomplexes in *Südostasien. Ava-Forschungen Band 6*, Unden Soft.

Simanjuntak, T. 1995. Mésolithique de l'Indonésie: une hétérogénité culturelle. *L'Anthropologie 99*, 4, p. 626-636

Simanjuntak, T, Forestier, H. 2004. Research Progress on the Neolithic in Indonesia : Special Reference to the Pondok Silabe Cave, South Sumatra. In V. Paz (ed.) *Southeast Asian Archaeology, Wilhelm G. Solheim II Festschriift*, The University of The Philippines Press, Diliman, Quezon City, Manila, p. 104-118.

Simanjuntak, T, Forestier, H, Jatmiko, Prasetyo, B. 2005. Gens des karts au Néolithique à Sumatra. *Dossier d'Archéologie n°302 Spécial Asie du Sud-Est*, p. 46-49.

Soejono, R.P. 1984. Jaman Prasejarah Indonesia, dalam Marwati Djoened Poesponegroho dan Nugraha Notosusanto, *Sejarah Nasional Indonesia, Jilid I.* Departemen Pendidikan dan Kebudayaan: Jakarta.

Soeroso, M.P. 2000. Penggalian Megalitik di daerah Pedalaman Sumatera Selatan. *Majalah Arkeologi Kalpataru No. 14*, Puslit Arkenas: Jakarta

Sukendar, H. 1984. Tinjauan Arca Megalitik Tinggihari dan Sekitarnya, *Berkala Arkeologi No. 5 (2)*, Balar Yogyakarta: Yogyakarta.

LIPI

ARCHAEOLOGY: INDONESIAN PERSPECTIVE

R.P. SOEJONO'S FESTSCHRIFT

Editors :
Truman Simanjuntak
M. Hisyam
Bagyo Prasetyo
Titi Surti Nastiti

Reader :
Dr. David Bulbeck
(Australian National University)

Indonesian Institute of Sciences
International Center for Prehistoric and Austronesian Studies

ISBN: 979-26-2499-6

Cataloging-in-Publication Data

Archaeology, Indonesian Perspective: R.P. Soejono Festschrift/Truman Simanjuntak, M. Hisyam, Bagyo Prasetyo, Titi Surti Nastiti (Ed.).

xiv + 620 pp. ; 16 x 24 cm
ISBN 979-26-2499-6

1. Archaeology-Indonesian Perspective 2. R.P. Soejono

930.1

Published by

LIPI

LIPI Press, member of Ikapi
Jl. Gondangdia Lama 39, Menteng, Jakarta 10350
Telp. (021) 314 0228, 314 6942. Fax. (021) 314 4591
e-mail: bmrlipi@uninet.net.id
lipipress@uninet.net.id
press@lipi.go.id
penerbit@lipi.go.id