Notes

ONE *The Environmental Background: Present and Past*

1. In this book, the term *Borneo* is used for the whole island, and *Kalimantan* for the Indonesian portion. The Malaysian portions are called Sarawak and Sabah. Brunei is a separate nation.

2. Climatic changes in the New Guinea Highlands might have been rather more severe than those in the islands of Indonesia. For instance, Stuijts (1993) suggests a glacial maximum treeline drop of only 500 meters for west Java. Van der Kaars (1991) suggests a drop of only 350 meters for Halmahera, and Maloney (1985) suggests 350 meters for the Lake Toba region of Sumatra. On the other hand, Rind and Peteet (1985) review several tropical data sets suggesting treeline falls of 900 to 1,200 meters in various parts of the world. Clearly, local circumstances can vary greatly.

3. Flannery (1994) has recently presented a case, albeit rather hypothetical, for much more catastrophic patterns of extinction by early human populations of the "naïve" (i.e., unaccustomed to humans) animal faunas of Late Pleistocene Wallacea and Australasia.

TWO *Homo erectus* in Sundaland

1. Note added in proof: For a new claim that the Ngandong skulls may be only between 25,000 and 55,000 years old, based on uranium series and electron spin resonance of bovid teeth, see Swisher et al. 1996.

THREE *Indo-Malaysians of the Last 40,000 Years*

1. It is apparent from current research that this deletion contains several lineages in terms of nucleotide substitutions and may even have arisen independently in more than one population (Redd et al. 1995; Melton et al. 1995).

FOUR *Recent Indo-Malaysian Prehistory: According to the Languages*

1. Variations in opinions about how many Austronesian languages actually exist reflect issues over differentiating dialects from separate languages (see Wurm and Laycock 1961, who document this problem for New Guinea). Dyen (1965a) classified speech systems as dialects of one language if they share 70 percent or over of basic vocabulary and gave a figure of under 500 separate languages for Austronesian. Most other linguists use a figure of 80 percent for the division. Tryon (1995a) gives the figure of 1,200.

2. Family tree diagrams tend to suggest that populations split asunder forever at points of subgroup separation. Perhaps they did in some remote Oceanic situations, but on large or adjacent landmasses, languages clearly did not differentiate by such a

simple process. Varying rates of intercommunication mean that some subgroups are "clear-cut" and others are not, for technical reasons relating to the nonoverlapping distributions of innovations. This is a matter clearly discussed, for those interested, by Pawley and Ross (1995), who differentiate between innovation-defined and innovation-linked subgroups.

3. Proto-Austronesians could have used pots and sailing canoes too, but cognates have not survived. In this regard, it is important to note that proto-language vocabularies can record presences, but cannot guarantee absences. Proto-Iroquoian has no word for *knee* (Mithun 1984). Iroquoians without knees are hard to imagine.

4. Old Malay (from the seventh century) and Old Javanese (from the ninth century) do occur on inscriptions in Sumatra and Java (earlier inscriptions are all in Sanskrit), but these are too limited to assist in more than purely local reconstructions. The Cham language of Vietnam also occurs in inscriptions back to the fourth century (Marrisson 1975).

FIVE *The Patterns of History and Ethnography*

1. It should be noted that Semang band exogamy differs fundamentally from the situation of band endogamy for the Punan forest nomads of Borneo (Sellato 1994). Band exogamy is not an automatic feature of a hunter-gatherer lifestyle.

2. The National Museum in Jakarta contains several Han pottery vessels from locations in southern Sumatra. In addition, many Chinese bronze items, some perhaps dating from the later part of the Zhou Dynasty (prior to 221 BC), are in private collection in London—reputedly from looted graves in the vicinity of Lumajang in eastern Java. The question of when Chinese contact with Indonesia first began is still open, but it needs to be firmly stated that trade contacts were perhaps very rare before the Tang Dynasty (AD 618–906).

SIX *The Hoabinhians and Their Island Contemporaries*

1. Recent research on the Toba eruption sequence suggests that the last major one occurred 74,000 rather than 30,000 years ago (Chesner et al. 1991; Rampino and Self 1992). Toba ash from Selangor has also been dated to 68,000 years ago by fission track dating. At present it is not clear how these new determinations affect the suggested age of 34,000 to 30,000 years ago for Kota Tampan, but the possibility of course arises that the site could be much older than hitherto claimed by Zuraina.

2. Although not specifically relevant for the period covered by this book, the top layer of Gua Chawas yielded abundant evidence for the firing of Buddhist votive tablets impressed with Bodhisattva and Avalokitesvara images, which were placed in large numbers in minor caves and crevices in the vicinity. The art has Srivijayan affinities and appears to be about 800 to 1,000 years old. This is the first time such evidence has been found so far inland in the Malay Peninsula; similar tablets are known from coastal locations in southern Thailand.

3. This suggestion is not as silly as it sounds. Pebbles embedded in road surfaces can be flaked into excellent tools by truck wheels, and quarry rock-crushing machines also make excellent blades and blade cores!

SEVEN ***The Archaeological Record of Early Austronesian Communities***

1. As in Southwest Asia, the oldest Neolithic sites in the Yellow River basin have reaping knives or sickles of stone, shell, and even pottery (Chang 1986:93). However, in the earliest Neolithic societies in southern China—Pengtoushan in Hunan and Hemudu layer 4 in Zhejiang, dating from 7000 to 5000 BC—such knives are absent, as they are in most prehistoric sites in Southeast Asia (including the TPK in Taiwan). Perhaps bamboo knives were used, as rice was certainly present in quantity at both Pengtoushan and Hemudu. Like any cereal, rice can be shaken into a basket or hand stripped, but if the people of Pengtoushan and Hemudu did this there would presumably have been no selection for nonshattering domesticated varieties (cf. Wilke et al. 1972; Hillman and Davies 1990). Today, reaping knives (termed "finger" knives) of metal are used widely in Southeast Asia, including Indonesia (Miles 1979). These allow individual harvesting of panicles without prior weeding and also selection of ripe panicles as they mature (Plate 38b). However, there is no archaeological record for these tools in Southeast Asia.

2. Wade-Giles place-name spellings have been retained for Taiwan in this section, but Pinyin is used for the People's Republic of China.

3. Compare the similarly very high numbers of infants and fetuses in early Neolithic graves at Khok Phanom Di in central Thailand, here due to malaria (Higham and Thosarat 1994; and see page 258 of this volume).

4. The site of Sembiran in Bali, only 2,000 years old, is buried under 3.5 meters of alluvium, and this is on the narrow north coastal plain of an island much smaller—particularly in terms of extent of coastal plains—than either Java or Sumatra. According to H. D. Tjia (1980), deltaic regions of northern Java grow seawards at an average rate of 200 meters per year. Compare also the burial of the Sumatran middens (see Plate 20).

5. A red-slipped and incised vessel with decoration precisely paralleled in some Lapita sites (see Plate 35c) was found by Alfred Buhler in his 1935 excavations in the disturbed cave of Nikiniki I in western Timor (Glover 1972b). Tanged blades found in the same site have been dated between 2,300 and 1,200 years ago by Glover (1972a:226), according to the results of his own excavations in other sites (Fig. 7.14e–g), but the vessel itself is not precisely datable.

6. It should be pointed out that Vietnamese, an Austroasiatic language, has since replaced the Chamic languages through much of their former distribution. Language replacements can go back and forth!

EIGHT ***The Archaeological Record of Early Agricultural Communities in Peninsular Malaysia***

1. It is also found, presumably not coincidentally, in the Neolithic pottery from Sarawak, Kalumpang (Sulawesi), and the Philippines; see Chapter 7, Section IIID.

NINE ***The Early Metal Phase: A Protohistoric Transition toward Supra-Tribal Societies***

1. Copper and bronze in archeological contexts cannot be differentiated by visual inspection alone, and my general use of the term "bronze" may be imprecise in some circumstances, especially in Indonesia. Many so-called bronze objects may simply be of copper, but without analysis it is pointless to speculate.

2. Questions concerning the origins of the drum tradition are not of concern for the Indo-Malaysian Archipelago, but most scholars favor either a Vietnamese (e.g., Pham Huy Thong 1990; Bernet Kempers 1988) or a Yunnan (e.g., Nitta 1985; Sørensen 1988) origin. Others are not so certain (Imamura 1993). For details of the magnificent bronzes, including Heger I drums, from Yunnan, see Rawson 1983.

3. Animal-headed pendants also occur as far west as central Thailand (Glover 1990b: 166) and the lingling-o ear pendants are typical of the Peinan site in Taiwan (see Chapter 7, Section IIA) and other sites in southern China. Such items of personal adornment were probably traded widely.

4. See Pliny, *Natural History,* Book XII, paragraph 30:

> There is also in India a grain resembling that of the pepper, but larger and more brittle, called the caryophyllon. . . . It is imported here for the sake of its scent (Rackham 1952:22–23).

5. Note added in proof: Pottery jar burials have recently been excavated in Iron Age (late first millennium BC–early first millennium AD) contexts in northeastern Thailand (Nitta 1996; Indrawooth 1997).

TEN ***A Final Overview***

1. SPAFA was originally the acronym for Special Program in Archaeology and the Fine Arts, an organization now termed the SEAMEO Regional Center for Archaeology and Fine Arts. SPAFA is organized through the Southeast Asian Ministers of Education Organization (SEAMEO) for archaeologists from ASEAN countries (currently Thailand, Laos, Vietnam, Malaysia, Singapore, Indonesia, Brunei). Its main office is in Bangkok. It publishes conference proceedings and the *SPAFA Journal.*

2. The Indo-Pacific Prehistory Association is run from the Department of Archaeology and Anthropology, Australian National University, Canberra ACT 0200, Australia. It holds conferences every four years (most recent ones: Philippines 1985, Japan 1987, Indonesia 1990, Thailand 1994, Malaysia 1998) and publishes the *IPPA Bulletin.*