

Research Questions in Maluku Archaeology

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Archaeological research has started late in Maluku compared to regions to the east and west. The first archaeological survey in the region was conducted by Danny Miller and myself in 1975 (see Spriggs 1990 for a summary), and scientific excavations began only in 1990–91, undertaken by Peter Bellwood and his colleagues on Halmahera, Gebe, and Morotai (Bellwood 1992, 1996; Bellwood et al. 1993) and by Wilhelm Solheim on Halmahera. There are advantages and disadvantages to this situation. The advantages stem from the fact that the archaeology conducted in adjacent areas can give an initial framework for chronology in Maluku and suggest suitable research questions to be pursued as work starts there. New results can be given an immediate context within the archaeology of the wider region.

The disadvantages stem from the same situation. Maluku is in danger of being seen only as an appendage or footnote to the archaeologies of the better-known areas to either side. New finds will tend to be interpreted not on their own terms but within frameworks already established in these other areas. We will need to guard against a situation wherein Maluku is not allowed to have its own unique history. It may remain unrecognized, imprisoned within general models derived from elsewhere.

Having said that, we need to start somewhere, and in the absence of any archaeological research at all on most islands in Maluku it would be pointless to interpret the region's history as if we knew nothing of areas nearby. In a paper given at the First Maluku Studies Conference in 1986, I sketched what was then known about Maluku archaeology and how it fitted into the regional picture (Spriggs 1990). Since that time research has started in northern Maluku, as already noted, and further archaeological work has been conducted in Maluku Tengah by a joint Indonesian–University of Hawai‘i team (Stark and Latinis 1992, 1996). Significant archaeological research began in the Aru Islands of Southeastern

Maluku in 1995 (Veth et al. 1998; Spriggs, Veth, & O'Connor, this volume) after some earlier exploratory work on Kei Kecil (Ballard 1988, 1992; Spriggs and Miller 1988). Also, the first palaeoenvironmental studies in Maluku have been carried out in waters off Halmahera (van der Kaars 1991), and on Obi by Geoff Hope of the Australian National University. Such work, using pollen analysis and other techniques, will prove vital for establishing the nature of human use of the environment over time, particularly with questions in mind about the change from hunting and gathering economies to agriculture, and about the date of any such change.

Results bearing on the archaeology of our region have also come from the explosion of archaeological research in New Guinea and particularly the Bismarcks and Solomons in the last decade (summarized in Allen and Gosden 1991; Spriggs 1993, 1997). It is instructive to examine Maluku, as a group of islands immediately to the west of the large island of New Guinea, in the light of the mass of research that has taken place in the islands immediately east of New Guinea. There are a series of similar challenges facing human inhabitants in both these island areas and, as research gets underway in Maluku, comparisons and contrasts in their archaeologies will be important in assessing how humans were able to adjust to these challenges.

In starting research in northern Maluku in 1990, Bellwood identified four major questions to be investigated at the initial stage of research (Bellwood et al. 1993: 20): (1) The date and source of initial Pleistocene settlement (before 10,000 years ago); (2) the role played by the region in the Austronesian settlement of the Pacific; (3) the nature of the interaction between the two major ethnolinguistic population groups of the region—Papuan (or non-Austronesian) and Austronesian—during the past 4000 years; and (4) the history of the spice trade with China, India, and the West. The program of research of Bellwood's team has so far mainly come up with information on the first three topics, but there is some surprising new information from outside the region on the possible antiquity of the spice trade. This will be discussed below.

Another topic that has proved important in Bismarcks and Solomons archaeology, and for which information is likely to be forthcoming in Maluku research, is the nature of the economic system of the region's earliest inhabitants and changes in this economy through time. The ori-

gins and development of an agricultural economy are pertinent here. Let us look at these five topics in turn.

The date and source of initial Pleistocene settlement

The date of human settlement of the then continent of Sahul, comprising present day Australia, New Guinea, and the Aru Islands, has recently been pushed back to about 55,000 years ago by the use of new dating techniques at sites in northern Australia (Roberts, Jones, & Smith 1990, 1993). Occupation of what is now northern New Guinea is documented for at least 40,000 years (Groube et al. 1986). The islands to the east of New Guinea were first settled at least 35,000 years ago (Allen et al. 1988, Pavlides and Gosden 1994). It is not known whether this represents a real pause after settlement of the adjacent continent of Sahul, as earlier sites may remain to be found in the Bismarcks and Solomons. The sea crossings from New Guinea to New Britain and New Ireland and onwards to the main Solomons chain were no greater distance than those traversed in passing from Southeast Asia to Sahul. Manus in the Admiralties, however, requires an open ocean voyage out of sight of land to reach it. It is some 200 km from the nearest significant land and was settled at sometime prior to 13,000 B.P. (Fredericksen, Spriggs, & Ambrose 1993). Although we do not know what kind of watercraft were used at this time, the Manus case suggests a sophisticated boat technology capable of successfully delivering colonists across long stretches of open ocean.

It must be remembered that one of the two likely routes of colonization into Sahul (Birdsell 1977) passes through Maluku via Sula, splitting to form a northern route via Halmahera to the Bird's Head, and alternative southern routes via Buru and Seram either directly from Seram across to the Bomberai Peninsula area of present-day New Guinea, or via Kei across to Aru, which in the Pleistocene was a series of low hills on the edge of the Sahul continent. The second main hypothesized early colonization route ran along the Lesser Sundas to Timor and then either directly across to present-day Australia, or again via Maluku through Wetar, Babar, and Tanimbar to make landfall south of Aru. The Manus evidence for advanced boat technology in the Pleistocene does raise the possibility of direct settlement of Sahul from a jumping-off point in the Lesser Sunda Islands that bypasses Maluku, but it is probable that Ma-

luku was reached and explored at about the same time. A 55,000-year history for Maluku is therefore likely.

Bellwood's team obtained a date of 37,500 B.P. from a shell layer in Tanjung Pinang rockshelter in southern Morotai, but this seems to represent a natural shell deposit (Bellwood 1996, Bellwood et al. 1993: 25). From Gebe Island, at the site of Golo Cave, a more obviously cultural deposit has provided a date of 31,000 B.P., and from other sites on that island and on Halmahera there are continuous sequences covering the last 15,000 years of human occupation (Bellwood 1996).

Economic changes in the Pleistocene and early Holocene

Human impact on the environment did not start with agriculture, and early signs of forest disturbance may point to the kind of "hunter-horticulturalism" (Guddemi 1992) suggested at least for the area to the east in New Guinea and the Bismarcks and Solomons. This is seen as an economy beyond simple hunting and gathering that incorporated low-intensity gardening and tree cropping, and deliberate movement of plants and animals across water gaps to more impoverished environments. The antiquity of this kind of economy in Melanesia goes back at least 20,000 years and probably a lot longer (see Spriggs 1996a for a discussion).

From at least 20,000 years ago, the economy in the Bismarcks and Solomons incorporated features such as long-distance exchange of the valued stone obsidian, and transport of nut-tree species and "wild" animals from the New Guinea mainland into the forests of the Bismarcks, which were naturally poor in food species.

Advances in analyses of the residues often found on stone and other artefacts mean that the plant food part of ancient diets can now be investigated in much greater detail. Initial results from the northern Solomons suggest that people were exploiting and possibly planting root vegetables such as taro (*keladi*, *Colocasia* sp.) at least 28,000 years ago (Loy, Spriggs, & Wickler 1992). Maluku is clearly within the natural range of a variety of important food plants, including sago. Indeed, the region is implicated in the domestication of some of these plants as part of a putative New Guinea center of plant domestication (Yen 1991, 1995). Important among the early exploited trees of New Guinea and Island Melanesia are kenari trees, various species of the genus *Canarium*. Their human use (and transport between islands) is attested from before 13,000 B.P. It is interesting that among the artefacts from early Holocene

levels at Tanjung Pinang in southern Morotai and at Um Kapat Papo on Gebe were nut-cracking stones identified by people from the area as being used for opening kenari nuts.

This is not the only evidence that Maluku had an early economy of the same type as found in Melanesia. The most important of the animal species transported from New Guinea to the Bismarcks is the cuscus, *Phalanger orientalis*. Later introductions in the Pleistocene and early Holocene (less than 10,000 years ago) include a wallaby, *Thylogale browni*, the bandicoot, *Echymipera kalubu*, a second cuscus species (only to Manus Island), *Spilocuscus kraemeri*, and a bush rat, *Rattus praetor*. An introduction of unknown antiquity to New Britain but not to the other areas of Island Melanesia is the large flightless bird, the cassowary. The sugar glider, *Petaurus breviceps*, also occurs on New Britain and may have been introduced (see Flannery 1995a, 1995b for a general description of New Guinea and Southwest Pacific—including Maluku!—mammals and their distribution).

In the Aru Islands, there are many marsupial species of New Guinea origin, but we must remember that until about 8000 years ago Aru was not an island group but part of the Sahul continent incorporating New Guinea and Australia. These animals therefore represent New Guinea species stranded by rising sea levels at the end of the Pleistocene, and not human introductions across water.

From archaeological research carried out in Eastern Timor, we do have evidence for the early introduction of wild animals to the islands west of New Guinea. There are of course two possible directions of introduction in this case, from New Guinea and from further west in Southeast Asia. Later introductions of wild animals to Timor, such as the civet cat, macaque monkey, and *Rattus exulans*, certainly came from the west. But the earliest example of an animal introduction there was the same cuscus as that found in the Bismarcks, *Phalanger orientalis*, first found in Timor in deposits dating to about 6000 years ago (Glover 1986). Its presence on several islands in Maluku (Kei, Banda, Leti, Gorom, Seram, Ambon-Lease, Buru, and Sula) is almost certainly due to human introduction at some period in the past.

A second New Guinea cuscus, *Spilocuscus maculatus*, is also present on several Maluku islands including Kei, Banda, Seram, Ambon, and Buru. At some point it was even spread further afield to Salayer Island, off the south coast of Sulawesi.

To the east of New Guinea the closely related species *Spilocuscus kraemeri* was introduced to Manus in the Pleistocene and to the Mussau Group about 3500 years ago. It would be reasonable to hypothesize that its close relative is a human introduction to Maluku as well. A New Guinea bandicoot, *Echymipera rufescens*, is found on Kei, and words for what appears to be the same species have been collected from languages in Ambon, Seram, Leti-Moa, and Damar (Blust 1993: 251), so it may be more widespread in the islands. To the east of New Guinea a related species of bandicoot was introduced to Manus about 13,000 years ago, again suggesting that the present distribution of *E. rufescens* is human-assisted. Two rat species found today in Kei (*Uromys caudimaculatus* and *Hydromys chrysogaster*) are less likely to be human introductions from New Guinea, as rats are known to disperse across water by natural means such as drifting on logs. The cassowary, found on Seram, is not known to disperse naturally across water gaps and represents a human introduction.

Hints of the picture we are likely to find in the region are given by the results of the first seasons of excavations in northern Maluku. In Gua Siti Nafisah at Nusliko on southern Halmahera, Bellwood et al. (1993) and Flannery et al. (1995) report bones of two locally extinct marsupial species in prepottery levels dating to between 5120 and 3410 B.P. They are a species of *Dorcopsis* wallaby and a bandicoot (cf. *Echymipera rufescens*). Also found was an endemic species of cuscus, *Phalanger ornatus*, which is still present on the island today. The *Dorcopsis* wallaby survived into a midden with pottery that dates to about 1870 B.P., and the bandicoot may have disappeared earlier at about 3000 B.P. The current interpretation is that the wallaby and bandicoot are probably endemic species rather than human introductions (Flannery et al. 1995), although Bellwood (1996) leaves open the possibility of their human introduction from New Guinea.

The situation on Gebe, however, seems quite different, with the same species of *Dorcopsis* wallaby and *Phalanger ornatus* only occurring in the archaeological record in the period starting 10,000–7000 B.P., and therefore probably representing human introductions there from Halmahera. The Halmahera bandicoot species does not appear to have reached Gebe. The *Dorcopsis* had become extinct on the island by 1500 B.P. (Bellwood 1996).

The sugar glider, *Petaurus breviceps*, is present on Halmahera today but has not been found in any of the archaeological sites, suggesting that it is comparatively recent introduction from New Guinea.

Local extinction of wild fauna after settlement by pottery-using Neolithic groups, as is documented for Halmahera and Gebe, is also a feature of the Bismarcks and Solomons sites to the east of New Guinea. There, endemic species of bush rats and several species of birds became extinct with the advent of the first pottery-using cultures. The reasons given include competition with introduced domestic animals (pig and dog) and rats such as *Rattus exulans* (the latter originally from the Asian mainland and also an introduction presumably before 3500 B.P. to Maluku), along with hunting pressure, habitat destruction, and—in the case of the birds—possible avian diseases introduced with the domestic chicken.

The region's role in the Austronesian settlement of the Pacific

Given the dates from west and east of Maluku for the spread of the Island Southeast Asian Neolithic culture associated with the spread of Austronesian languages (see Bellwood 1985, Spriggs 1989), the expected age in Maluku of this culture should be around 4500–3500 B.P. An assemblage of classic Neolithic type with pottery has been found by Bellwood and his colleagues at Uattamdi on Kayoa Island off Halmahera, with clear links to contemporary assemblages from Sulawesi, Eastern Timor, and the Bismarck Archipelago. Dates in Maluku do not yet go back beyond about 3300 B.P., but this is to be expected at this early stage of research (cf. Bellwood et al. 1993: 32). What is more surprising is that Uattamdi is the only pottery site of this period, pottery occurring elsewhere in northern Maluku only from about 2000 B.P. and being of common Indonesian Metal Age type (Bellwood 1996).

According to Blust (1993), Central Malayo-Polynesian (CMP) languages spread rapidly through Maluku and the Lesser Sundas from a primary dispersal point in northern Maluku soon after the breakup of the language ancestral to CMP and Eastern Malayo-Polynesian (EMP). EMP includes the ancestor of the Austronesian languages spoken in South Halmahera and West New Guinea (the SHWNG group) and the Oceanic group, which includes all the other Austronesian languages of New Guinea, Island Melanesia, Polynesia, and most of Micronesia. Northern Maluku is thus the key area for the dispersal of Austronesian languages across the region, and also—by extension—for the spread of Neolithic

culture. Blust suggests that a later spread of CMP languages took place from Tanimbar to the Bomberai Peninsula of New Guinea (1993: 278).

The spread of this Neolithic culture is interpreted to represent an immigrant group with a fully agricultural economy and domestic animals such as the pig, the dog, and the chicken (Spriggs 1996b). The main variety of domestic pig in Maluku, New Guinea, and the Pacific appears to be a hybrid between *Sus scrofa vittatus* (naturally distributed in Malaya and Western Indonesia) and the endemic Sulawesi species *Sus celebensis*. The hybridization appears to have occurred in northern Maluku (Groves 1981: 65–66). While earlier pig remains have been claimed from New Guinea, the weight of evidence now suggests that its introduction there occurred in association with the Austronesian expansion (Hedges et al. 1995). No definitely in situ pig remains have been found in the prepottery levels at the northern Maluku sites. The dog, the chicken, the commensal rat *Rattus exulans*, and later animal introductions such as goat and deer also came from the west.

Austronesian–non-Austronesian interaction

Non-Austronesian languages of the region include some on the islands near Timor that immediately derive from there, and the languages in northern Halmahera and Morotai. They are thought to be related to languages of Western New Guinea. Whether they represent ancient language stocks present in pre-Austronesian times throughout Maluku or are the result of more recent population movements is unknown. For the northern Maluku evidence, see Bellwood (1996), who deals extensively with the linguistic evidence. Archaeological research elsewhere in Maluku is at too early a stage to try and compare it with the picture from linguistics.

The history of the spice trade

Until recently, the earliest evidence of the international trade in Maluku spices came from Han Chinese and Indian sources of about 2000 years ago, and hints from the spread of metal from mainland Southeast Asia through the islands as far as areas either side of Maluku starting 2300–2100 years ago. The sudden appearance of metal and, a few hundred years later, the distribution of Dongson bronze drums originating in northern Vietnam and southern China and found as far as Maluku and the Bird's Head of New Guinea, were interpreted as marking the beginning

of the spice trade. The northern Maluku evidence for widespread adoption of pottery of general Indonesian Metal Age style from 2000 B.P. would fit in with this interpretation.

Dramatic evidence from Syria has been interpreted as extending the dating for the spice trade back another 1500 years. The evidence comes from the ancient city of Terqa (modern Ashara) on the Middle Euphrates, a halfway station between Ebla and Akkad. Excavation of a residential quarter of the city dating to about 3710–3550 B.P. (1760–1600 B.C.) revealed an area destroyed by fire. In the storage area of one house were a series of jars and other clay vessels. One of them contained well-preserved spices, including what has been claimed by the excavators to be a single clove (Buccellati and Kelly-Bucellati 1977: 116, 1977–78: 77–79). The clove, if it is such, can only have come from Maluku.

The dating is from a period soon after initial Neolithic Austronesian settlement of the region is inferred to have taken place. Perhaps part of the reason for the Austronesian expansion was to do with the extension of trading networks that already at this time were on a (Old) World scale. A search of early written records for the Middle East might reveal further details of such trade and its antiquity. At the time, the connections of the Austronesian sphere ran north through the Philippines, Taiwan, and into South China. Cloves could have moved along the ancient caravan routes north of the Himalayas to their Syrian destination.

So it seemed to me when I gave the original version of this paper in 1994 at the Third Maluku Studies Conference, and Pam Swadling (1996) has independently considered the implications of the Syrian finds in her recent book on the bird-of-paradise trade in Eastern Indonesia and New Guinea. Other early discoverers of the relevance of the Terqa finds to Maluku, and the first to get into print on it, were Taylor and Aragon (1991).

The problem is that other Near Eastern specialists and palaeobotanists do not apparently accept the original identification of the clove from Terqa and believe it to be some other unrelated species (Carl Lamberg-Karlovsky, pers. comm., 1996).

On the basis of the Terqa clove and early claimed pottery, betelnut, and pigs from northern New Guinea, Swadling (1996: 51–53, 269) has claimed that there was an early period of contact linking New Guinea and Asia dating from about 6000–5000 B.P. She posits an association with the spread of Austronesian languages and claims an “almost si-

multaneous introduction of pottery across island Southeast Asia as far as New Guinea about 5000 years ago" (1996: 51). The dating of pigs and pottery in northern New Guinea has been challenged (Spriggs 1996b) and I have elsewhere (1989) interpreted the spread of pottery through Southeast Asia and the Pacific in a more clinal manner. Swadling's suggestion of Austronesian connections as far as northern New Guinea as early as 5000 B.P. seem unlikely on present evidence, including that from northern Maluku.

Swadling's claims of an important role for bird-of-paradise feathers in the later exchange systems associated with the spread of early metal in the region are far more persuasive. Such birds occur in Maluku only in the Aru Islands, but the long-standing connections between northern Maluku and New Guinea provide the conduit through which such feathers entered the world market. Whether the spices or the feathers entered the exchange networks first, or together, is at present unknown, but Swadling's book is an important corrective to earlier spice-centered views of regional trade.

It is obvious that the more recent history of Maluku, including the archaeology of the Portuguese and Dutch colonial period, is closely bound up with the spice trade and the efforts of world powers to access and control it. The supposed evidence from the other side of the world that suggests that this situation may go back much further than previously thought is in limbo until confirmed by further, more certain identifications or some kind of genetic typing of the original specimen.

Conclusion

Based on the exciting finds over the last decade from comparable archipelagos to the east of the island of New Guinea, results from the first few seasons of serious archaeological investigation in Maluku, and the tantalizing suggestion from Syria of the antiquity of trade in Maluku spices, it is likely that the next few years will see significant results coming from the region. Its rich written sources of the last few centuries are beginning to be extended back in time to provide a history that probably includes 55,000 years of human endeavor in Maluku. Writing that rich history from archaeology has only just begun.

Epilogue

Since the revised version of this paper was written in 1996–97, there have been several new publications of relevance to the issues addressed above. In 1997, Peter Bellwood published a much revised and expanded second edition of his (1985) *Prehistory of the Indo-Malaysian archipelago* that includes detailed consideration of the Halmahera-area research (Bellwood 1997). The next year, there appeared a special issue of *Modern Quaternary Research in Southeast Asia* (vol. 15) dedicated to the archaeology and natural history of the Bird's Head region of New Guinea, immediately to the east of Maluku. It includes papers by Veth et al. (1998) on archaeological research in Aru, and by Bellwood et al. (1998) giving further details of the archaeological research project in the northern Maluku area. The same year saw the delayed appearance of a paper by Stark and Latinis (1996) discussing a 1000-year-old rockshelter site they excavated on Ambon Island.

ACKNOWLEDGMENTS

I would like to thank participants at the Third Maluku Studies Conference, held at Universitas Pattimura in 1994, for comments and discussion of the draft of this paper. Tom Heinsohn and Sue O'Connor also offered helpful comments on earlier drafts and Carl Lamberg-Karlovsky brought me up to date on the question of the Terqa clove.

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