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## The archaeology of Sulawesi: An update, 2016

Muhammad Irfan Mahmud

### Symposium overview

The symposium on ‘The Archaeology of Sulawesi – An Update’ was held in Makassar between 31 January (registration day) and 3 February 2016 (field-trip day) as a joint initiative between the Balai Arkeologi Makassar (Balar Makassar, Makassar Archaeology Office) and The Australian National University (ANU). The main organisers were Sue O’Connor, David Bulbeck and Juliet Meyer from ANU, who are also the editors of this volume, and Budianto Hakim from Balar Makassar. Funding for the symposium was provided by an Australian Research Council Discovery Grant (DP110101357) to Sue O’Connor, Jack Fenner, Janelle Stevenson (ANU) and Ben Marwick (University of Washington) for the project ‘The archaeology of Sulawesi: A strategic island for understanding modern human colonization and interactions across our region’.

Between 1 and 2 February, 30 papers were presented by contributors representing ANU, Balar Makassar, the National Research Centre for Archaeology (Jakarta), Balai Makassar Manado, Hasanuddin University (Makassar), Gadjah Mada University (Yogyakarta), Bandung Institute of Technology, Geology Museum in Bandung, Griffith University and James Cook University (Queensland), University of Wollongong and University of New England (New South Wales), University of Göttingen and Christian-Albrechts-Universität zu Kiel (Germany), the University of Leeds (United Kingdom), Brown University (United States of America) and Tokai University (Japan). Not all of the presenters were able to prepare their contribution for inclusion in this volume; fortunately, a summary of the presentations has been published by Macknight (2017). As detailed there, the presentations ranged in time depth from more than 100,000 years ago to less than 300 years ago, and covered five of Sulawesi’s six provinces including the Talaud Islands, which lie approximately halfway between the Sulawesi mainland and Mindanao in the Philippines, with topics as diverse as initial settlement by archaic hominins, occupation by early modern humans as registered by their rock art and tool technologies, Holocene developments including the transition to the Neolithic and Early Metal Phase, the renowned megaliths of Central Sulawesi, early Bugis-Makassar history (South Sulawesi), early Islamic graves in South and West Sulawesi, and relevant palaeoenvironmental correlates.

Quite a few of the presentations focused on results from cave sites in Kabupaten (District) Maros, a short distance north of Makassar, which was the destination for the 3 February field trip. The visited sites included Leang Burung 1 and Leang Karassaq, both of which had been excavated during the 1969 Australian–Indonesian Archaeological Expedition to Sulawesi (Mulvaney and

Soejono 1970); Leang Timpuseng, with its painting in ochre of a babirusa ‘pig deer’ dated to at least 35,000 years ago (Hayes and van den Bergh, this volume); and Leang Burung 2, where excavations led by Adam Brumm (currently Griffith University) recovered faint traces of an early human or archaic hominin presence deep beneath the ~30,000 BP habitation layer documented by Glover (1981).<sup>1</sup>

## Early scientific research into Sulawesi’s past

The English naturalist Alfred Russel Wallace, who can be considered the founder of zoogeography, visited Sulawesi three times between 1856 and 1859 during his travels across the islands of Indonesia and Malaysia from 1854 to 1862 (Baker 2001). He took the map of Island Southeast Asia and drew a line (now known as Wallace’s line) between Borneo with its fully Asian mammalian fauna, as also found on islands to the west, and Sulawesi with its peculiar representation of related mammals that shared their habitat with some species similar to those of New Guinea and Australia. In 1947, the colonial Dutch archaeologist Robert van Heekeren began a series of discoveries of Sulawesi mammalian fossils on the Walennae river terraces in South Sulawesi province. These included very archaic forms with no living relatives such as stegodons, primitive elephants and *Celebochoerus* suids as well as the similarly archaic *Babyrousa* suids and Anoa water buffaloes, which have survived on Sulawesi to this day (Hooijer 1975). Van Heekeren, and later R.P. Soejono, also collected stone artefacts from the same terraces including point picks and thick points, a range of scrapers (end-, crude concave, keeled and small-core scrapers) and chopping tools. Van Heekeren (1972) felt confident in dating the artefacts to the Pleistocene from the supposed faunal associations, and estimated a late Middle Pleistocene antiquity. Later research disassociated the mammalian fossils and the stone artefacts, dating the former to the Upper Pliocene and the latter to the Upper Pleistocene (Bartstra 1997), although the most recent investigations have vindicated van Heekeren’s views (see below).

A different approach to Sulawesi’s past, launched from an ethnographic perspective, was initiated by the Swiss second cousins Fritz and Paul Sarasin at the turn of the 20th century. Seeking evidence of the eastward migration of the ancestors of the Veddas, who the Sarasins had investigated in Sri Lanka, they ventured to the Lamoncong highlands of South Sulawesi on the basis of reports of *Toale* (forest people) who continued to dwell there in caves. They excavated one inhabited cave and three other caves at Lamoncong, and recovered bone points, distinctive stone points with a hollowed base and denticulate outline, and a variety of other stone artefacts (Sarasin and Sarasin 1905). Similar assemblages were excavated by Dutch colonial archaeologists near Lamoncong, along South Sulawesi’s south coast and in the Maros District during the 1930s and 1940s, and were assigned to a Mesolithic ‘Toalean culture’ based on their similarities to the assemblages recorded by the Sarasins (van Heekeren 1972). The Maros sites proved to be of particular interest for their rock art, including hand stencils and *Babyrousa* paintings, which van Heekeren (1972) assumed to be Mesolithic but whose origins can now be traced back to much earlier times (see below).

Similarities between the South Sulawesi Toalean and the ‘small tool tradition’ of late Holocene Australia caught the attention of Australian archaeologists, leading to the Australian–Indonesian Archaeological Expedition to Sulawesi led by D.J. Mulvaney and R.P. Soejono (1970; Macknight, this volume). The goals of the expedition were, first, to excavate stratified assemblages that would allow investigation of Toalean cultural change—in particular, to test van Heekeren’s (1972) sequence of a progression from an initial proto-Toalean to a middle Toalean characterised by geometric microliths and an upper Toalean marked by denticulated arrowheads and bone

1 Recently published by Brumm et al. (2017) during the period of preparation of the current volume.

points—and, second, to obtain radiocarbon dates for the Toalean. A then junior member of the expedition team, Ian Glover, continued work in the Maros karsts, including further survey along with excavation of early to late Holocene, Toalean materials at Ulu Leang 1 and Late Pleistocene, pre-Toalean materials at Leang Burung 2 (Glover 1978, 1981). Subsequent analysis of the materials excavated during the Australian–Indonesian Archaeological Expedition to Sulawesi, and synthesis with the Ulu Leang 1 reported results, indicated that both bone points and geometric microliths were longstanding characteristics of the Toalean, up to the late Holocene appearance of pottery, and the main chronological marker was the production of denticulated arrowheads restricted to the middle Holocene (Bulbeck 2004).

## Recent revelations on Sulawesi's early past

Recent investigations relevant to Sulawesi's early prehistory have involved teams of Indonesian and international experts who have applied modern scientific dating techniques as part of an interdisciplinary approach to strategic sites, as per the examples below.

The potential antiquity of the earliest colonisation of Sulawesi was turned completely open with the demonstration of very early colonisation of Flores, an island that (like Sulawesi) is one of the non-continental islands of Wallacea to the east of Wallace's line. Stone artefacts of hominin manufacture associated with extinct fauna in the Soa basin have been dated to as early as 1 million years ago (Brumm et al. 2010), and linked to the occupation of the Liang Bua cave by the primitive *Homo floresiensis* species between c. 190,000 and 40,000 years ago (Sutikna et al. 2016). Mike Morwood, who instigated the scientific investigation of an archaic hominin presence on Flores, promoted Sulawesi as a likely source for the Pleistocene colonisation of Flores (Morwood and van Oosterzee 2007), which directed attention back to Sulawesi in archaeologists' hunt for evidence of archaic hominins in Wallacea.

A self-evident location for investigation was the Walennae river terraces, which had lapsed into obscurity as a result of Barstra's recensions noted above. At the site of Talepu, a predominantly Australian–Indonesian team identified a stratified sequence of 4.2 metres depth with *in situ* stone artefacts and vertebrate fossils, and which could be dated through optical luminescence dating of the deposits and uranium-series dating of the fossils. One of the excavation pits (T2) produced the majority of the stone artefacts — comparable to those described by van Heekeren (1972) — in deposits dated to around 126,000 years ago (in association with an Anoa-like fossil) and later. The other excavation pit (T4) produced a small number (four) of stratigraphically older stone artefacts bracketed between an overlying stegodon fossil and eight underlying *Celebochoerus* fossils. The latter have a minimum age of 200,000 years ago but are younger than 780,000 years ago (from palaeomagnetism evidence). The results accordingly date the colonisation of Sulawesi by *Homo* to at least 126,000 years ago and perhaps as early as 200,000 years ago, an antiquity indicative of an archaic hominin, even if it is not as early as in Flores (van den Bergh et al. 2016).

Fossil skulls in Africa assigned to very early representatives of modern humans have been dated to between c. 200,000 and 300,000 years ago (Gibbons 2017), but the earliest evidence for Island Southeast Asia (ISEA) relies on isolated teeth, assigned on morphological and metrical grounds to *Homo sapiens*, recovered as a minor component of Late Pleistocene rainforest faunal assemblages. Storm et al. (2005) identified a modern human premolar in the Punung fauna of East Java, which they dated to between 81,000 and 126,000 years ago based on consideration of the time period when East Java would have supported tropical rainforest. Westaway et al. (2017) demonstrate the modern human affinity of a molar and an incisor from Lida Ajer, West Sumatra,

associated with a rich tropical rainforest faunal assemblage, which is firmly dated to between 63,000 and 73,000 years ago from luminescence dates on the deposit, uranium-series dates on speleothems and electron spin resonance dating on the mammalian fossils.

For evidence of substantive occupation by anatomically modern humans in ISEA, we need to refer to a later interval from about 45,000 years ago. A spectacular example is the uranium-series dating of 14 of the Maros cave paintings to the Late Pleistocene. Expressed in terms of rounded two standard-error age intervals, the minimum ages include 38,000–50,000 years ago for an undetermined animal figure, as well as 35,500–38,500 years ago for a *Babyroussa* figure, and 38,500–43,000 to 17,500–18,100 for hand stencils (Aubert et al. 2014). The older of these artworks are approximately contemporary with early habitation records from countries neighbouring Indonesia, including the deepest deposits at the Niah Caves in Sarawak, dated to between 35,000 and 50,000 years ago, and the basal deposits at Jerimalai and Laili Cave in East Timor, 40,000–45,000 years ago. The deep Niah deposits include a *H. sapiens* cranium and femur, generally considered to be of ‘Australo-Melanesid’ racial affinity, along with food refuse and more than 50 specimens of stone tools (identified from use wear and residues) and flaking debitage (Krigbaum and Datan 2005; Reynolds et al. 2013). The early East Timor deposits include marine and terrestrial fauna debris associated with flaked stone artefacts (Marwick et al. 2016; Hawkins et al. 2017).

Recent work has also extended the outreach of archaeological research in Sulawesi. Excavations at Gua Talimbue in Southeast Sulawesi, undertaken as part of ‘The archaeology of Sulawesi: A strategic island for understanding modern human colonization and interactions across our region’ project, have obtained the first Late Pleistocene dates for human habitation on the Sulawesi mainland outside of South Sulawesi (Suryatman et al. 2016). And a program of survey and excavation in the Bontocani area in Bone, along the Walennae valley downstream from Lamoncong where the Sarasins undertook their foundational research, has recovered evidence of rock art, haematite in a stratified context and local Toalean habitation (Sardi 2016).

## Origins and early history of Sulawesi’s major ethnolinguistic groups

Austronesian languages, and more specifically Malayo-Polynesian languages, are spoken universally as the indigenous languages throughout Sulawesi as they are across Indonesia west of the Moluccas. Simanjuntak (2006) emphasises the importance of the dispersal of Malayo-Polynesian speakers from the Philippines, associated with a Neolithic material culture (marked by polished adzes and pottery) for understanding the deep history of the indigenous ethnolinguistic societies of Sulawesi and Indonesia’s other islands. The Karama River of West Sulawesi is particularly relevant for this topic of research, notably the open-air hamlet sites of Kamassi and Minanga Sipakko. These sites were initially excavated by Dutch colonial archaeologists (van Heekeren 1972), but their significance for understanding the early Neolithic of Sulawesi was not apparent until Carbon-14 dating could be applied. It is now clear that Neolithic occupation at these sites commenced at some point between 3500 and 3000 years ago, and that the diet included domestic pigs (*Sus scrofa*) introduced from overseas as well as the endemic suids hunted by local foragers from time immemorial, and that rice (wild or domesticated) was probably harvested (Anggraeni et al. 2012).

Statistical analysis of the lexicons of Malayo-Polynesian languages (Gray et al. 2009) has arrived at the following scenario. A lengthy period intervened between the initial rapid dispersal of proto-Malayo-Polynesian from the Philippines to western Indonesia and to Melanesia, between approximately 4000 and 3500 years ago, and the diversification of languages into the main

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Malayo-Polynesian language groups that are recognisable today. In Sulawesi, for instance, the groups of languages in the Sangihe-Talaud Islands and in Central/Southeast Sulawesi can be traced back to ancestral languages dated to around 2500 years ago, and to 2000 years ago in the case of the languages of South and West Sulawesi, while the ancestor of the present-day languages of Sulawesi's northern arm may be no older than 1500 years ago. As a further complication, the Sulawesi northern arm languages are more closely related to Philippine languages than to other Sulawesi languages, suggestive of a Philippine-to-Sulawesi language dispersal much later in time than the one associated with the Neolithic colonisation of the Karama River. In summary, the reconstructible origins and history of Sulawesi's present-day Malayo-Polynesian speakers may date to the Early Metal Phase (Bellwood 2017) rather than the Neolithic.

In western Indonesia, the Early Metal Phase is associated with early Hindu/Buddhist influences from India, leading into the period of classic archaeology, but the situation for Sulawesi is far less clear. The most tantalising hint is a bronze Amaravati Buddha statue found in 1921 at Sikendeng near the mouth of the Karama River and dated by Bosch (1933) to between the 2nd and 7th centuries AD. This discovery prompted the excavation by A.A. Cense of Neolithic habitation traces at Sikendeng and the subsequent excavations further upstream at Kamassi and Minanga Sipakko, noted above, but no traces of Hindu/Buddhist influence (van Heekeren 1972). The classic period in Java continued through to the Majapahit empire dating to around the 14th century AD, by which time Java and South Sulawesi had maintained regular contact for several centuries, but with little indication of a Hindu/Buddhist influence on ideological systems in Sulawesi (Caldwell and Bougas 2004).

An alternative approach towards understanding early history is available for the Bugis of South Sulawesi, with their rich traditional literature that includes the La Galigo epic cycle as well as *lontaraq* texts on the origins and early history of the Bugis kingdoms. From his study of these sources as well as Bugis ethnography, Christian Pelras (1996), who first came to South Sulawesi in 1967, developed a scenario whereby their ethnic character changed over time from a focus on maritime travel to intensive farming (along with the trade of surplus produce as far east as Papua). Pelras (1996) also drew upon local traditions that ships formerly sailed from the Strait of Makassar through Lake Tempe to the mouth of the Walennae—effectively, that South Sulawesi south of Lake Tempe was geographically an island—partially supported by evidence that a continuous network of channels, rivers and lakes may have connected the west and east coasts of South Sulawesi during the elevated sea levels of Neolithic and Early Metal Phase times (Caldwell and Lillie 2004).

To conclude these introductory remarks, I would like to emphasise the importance of the public use of research and scholarship. The results of novel research should be presented in a social arena, starting with publication, which can greatly help our community. Schmidt (2004) observed that the integrity of a nation can be weakened in three ways: first, through submergence of its history; second, through fragmentation of the evidence of its history until it can no longer be detected and demonstrated; and third, through sundering the nation's relations with its ancestral antecedents. Archaeological research can help to overcome these setbacks and accordingly illuminate and celebrate the history of the Indonesian people and Indonesian society over the long term. This observation applies not just to scholarly research on topics that would be broadly familiar to members of the lay public—topics such as Islamic archaeology and the early development of the Bugis-Makasar kingdoms—but also to research on much earlier times when the material culture and belief systems of Sulawesi's inhabitants were very different from today's. In all, it is important that a volume of the nature presented here covers a wide-ranging chronological and geographic sweep.

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