

Chapter Title: Last Glacial Maximum to Late Holocene occupation on the Bomberai Peninsula: Preliminary results of archaeological research at Andarewa Cave, Fakfak Regency, West Papua Province

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Book Title: West New Guinea

Book Subtitle: Social, Biological, and Material Histories

Book Editor(s): Dylan Gaffney, Marlin Tolla

Published by: ANU Press. (2025)

Stable URL: <https://www.jstor.org/stable/jj.27024372.14>

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Last Glacial Maximum to Late Holocene occupation on the Bomberai Peninsula: Preliminary results of archaeological research at Andarewa Cave, Fakfak Regency, West Papua Province

Bau Mene, Adi Dian Setiawan, and Dylan Gaffney

Abstract

This chapter reports preliminary excavation and artefactual evidence from Andarewa Cave, located in Fakfak Regency, on the Bomberai Peninsula. This area would have been a key thoroughfare between the Bird's Head of New Guinea and the rest of Sahul during the Pleistocene period. From 2018 to 2021, two 2 × 2 m units were excavated on the north side of the cave mouth. Excavated material at Andarewa included pottery, shells, stone tools, bone points and jewellery, red and yellow ochre, charcoal, and other ecofacts. Radiocarbon dating of charcoal indicates the site was occupied as early as the Last Glacial Maximum (LGM), 26,327–25,900 years ago. This makes Andarewa contemporary with Toé Cave on the Bird's Head of New Guinea, and the second oldest site known from the West New Guinea mainland region. The lithic analysis demonstrates that flaking of local sedimentary stone was expedient, focused on the production of small flakes and scrapers, some of which were retouched, although an igneous stone was imported from further afield. Bone artefact analysis demonstrates that bone points, characteristic of West New Guinea and north-eastern Wallacea, are represented at the site, and pig, dog, crocodile, and fish bone jewellery all date to the Late Holocene. Archaeological excavations are ongoing at Andarewa and sterile deposits are yet to be reached: future research will shed light on the antiquity of human occupation around this part of New Guinea.

Abstrak

Pada bagian ini, pemaparan tentang penelitian yang dilakukan di situs Gua Andarewa diuraikan beserta dengan bukti artefak dari situs tersebut. Gua Andarewa adalah salah satu gua prasejarah yang secara administrasi terletak di kabupaten Fakfak, di semenanjung Bomberai. Berdasarkan keletakannya, daerah ini merupakan jalur utama yang menghubungkan Kepala Burung dan seluruh dataran pada masa pleistosen. Kegiatan ekskavasi di situs ini telah dilakukan sejak tahun 2018–2021 dimana dua unit kotak ekskavasi berhasil dibuka dengan ukuran 2 × 2 m di sisi utara mulut gua. Adapun bukti arkeologi yang didapatkan pada situs Andarewa adalah gerabah, kerang, alat batu, tulang dan perhiasan, okker merah dan kuning, arang dan ekofak. Adapun hasil pertanggalan radiokarbon pada temuan arang di situs ini mengindikasikan tentang adanya kependudukan manusia sejak masa Glasial Maksimum Terakhir (LGM) yaitu 26.327–25.900 tahun yang lalu. Hal ini menjadikan situs Andarewa sebagai situs tertua kedua yang diketahui dari wilayah Papua. Adapun hasil yang didapatkan pada analisis alat litik menunjukkan adanya pemangkasan yang sempurna dilakukan pada batu jenis sedimen lokal. Alat batu seperti alat serpih, scrapers merupakan alat litik yang paling umum ditemukan dimana beberapa diantaranya telah mengalami pengerjaan ulang. Dari hasil analisis terhadap artefak tulang seperti tulang babi, buaya, dan ikan yang ditemukan pada situs ini, maka diketahui bahwa alat tersebut memperlihatkan ciri-ciri alat tulang yang selama ini sangat umum ditemukan di wilayah Papua dan juga ditemukan di wilayah Wallacea bagian timur. Ciri-ciri alat tulang tersebut diperkirakan berkembang pada masa akhir Holosen. Penggalan arkeologi pada situs ini masih belum selesai dilakukan sehingga diharapkan pada masa yang akan datang semakin banyak fakta baru yang ditemukan pada situs ini.

Introduction

Human occupation of West New Guinea during the Last Glacial Maximum (LGM) has previously been reported at Toé Cave, with initial frequentation at that site established by radiocarbon dating of cassowary eggshells to be about 30,700–29,900 years ago (Pasveer 2004). At that time, people were hunters and gatherers, frequenting the lowland rainforests of Ayamaru Plateau in the interior of the Bird's Head Peninsula. Further afield, in the Aru Islands that were once connected to New Guinea as part of the Pleistocene continent of Sahul, occupation at Liang Lemdubu occurred approximately 28,000–25,000 years ago (O'Connor et al. 2005). However, little is known about the distribution and nature of human occupation at this time, and no recent systematic archaeology has been undertaken on the Bomberai Peninsula, which formed a thoroughfare between the Bird's Head and the rest of Sahul. The first archaeological study around Bomberai was conducted by J.J. Röder in 1937. Röder (1939, 1959) excavated Dudumunir Cave on the island of Arguni, where he recovered flakes and pottery sherds; unfortunately, the collections were lost and have not therefore been reported in detail or radiometrically dated. This chapter is the first description of Pleistocene occupation around the Bomberai Peninsula of West New Guinea, presenting the preliminary results of excavations, radiocarbon dating, and lithic and bone artefact analyses at Andarewa Cave, about 25 km south-east of Dudumunir Cave (Figure 9.1). The aim of the analyses is to determine the timing of occupation, the type of stone tool and bone technology, and the nature of human societies that occupied the site.

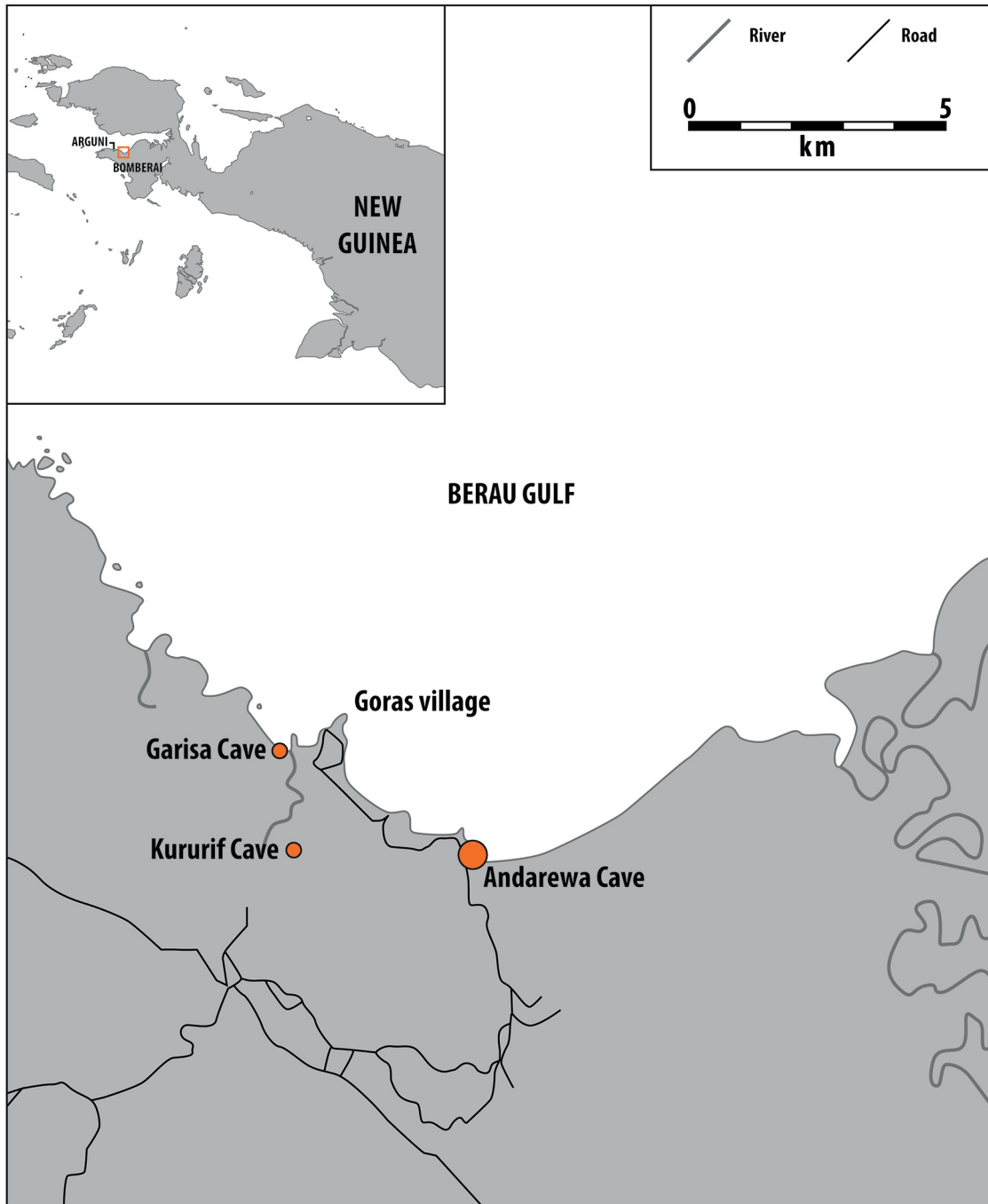


Figure 9.1: The location of Andarewa Cave, Fakfak Regency.

Source: Dylan Gaffney.

The Berau Gulf prehistoric archaeology project

Archaeological research relating to the prehistoric human occupation of the Berau Gulf was undertaken by Balai Arkeologi Papua¹ (Papua Centre of Archaeology) in 2018 in several areas of Fakfak Regency, including around the districts of Arguni, Goras, and Mbahamdandara. Renewed excavation was carried out in Dudumunir Cave, which successfully unearthed pig mandibles and other bones, fish bones, crab claws, marsupial bones, and human remains. Artefacts encountered during excavation included bone tools, stone flakes, possible stone points, ochre, stone axes, shell rings, shell jewellery, and pottery fragments. The Dudumunir material will be the focus of future analysis and reporting.



Figure 9.2: Andarewa Cave.

Notes: a) entrance route to cave; b) cave exterior; c) excavation; d) deep excavation with shoring.

Source: Photographs by Bau Mene.

Andarewa Cave (S 02° 48' 11.7" E 132° 43' 32.8") is located in the Goras Village area, Mbahamdandara District, Fakfak Regency, at 35 m above sea level (Figure 9.2). This site can be reached by using a boat to access the cave entrance, about 20 minutes from Goras. The cave looks over Berau Gulf to the north, mangrove forests in the east, and karst hills in the south, while to the west is Ugar Village. This cave was first identified in 2009 by a research team from the Papua Centre of Archaeology during a survey around the Goras area. In 2018, 1 × 1 m test pits were excavated in the cave, followed by more substantial excavation in 2019 on the north side of the cave mouth. Two different 2 × 2 m excavations were opened, ADR/FF/KT1 and ADR/FF/KT2, following 10 cm spits and using dry sieves. In 2021, the excavations were continued, and further survey was carried out in the area surrounding Andarewa Cave, where rock paintings were found on the cave walls in the form of

¹ Bahasa Indonesia words are underlined at first mention.

black pigment suns, abstract designs, geometrics, lizards, and fish. These paintings are located on the north side of the cave site, facing the beach. The images are arranged from the left to the right with a distance of 2–3 m between one another, while the average height from the ground to the images varies between 1 and 3 m from the ground. Excavated material at Andarewa included pottery, shells, stone tools, bone jewellery, ochre (red and yellow), charcoal, and other ecofacts.

Excavation results 2018–2021

The two 2 × 2 m excavations (ADR/FF/KT1 and ADR/FF/KT2) opened during the 2018–2021 seasons at Andarewa will be described briefly (Figure 9.3). The chronology of the Andarewa site will also be reported, having been established with radiocarbon dating of charcoal samples from multiple sediment contexts. All radiocarbon dates were pretreated with standard acid/base/acid at Beta Analytic. The broad archaeological findings will then be described before examining the lithic and bone artefact material.

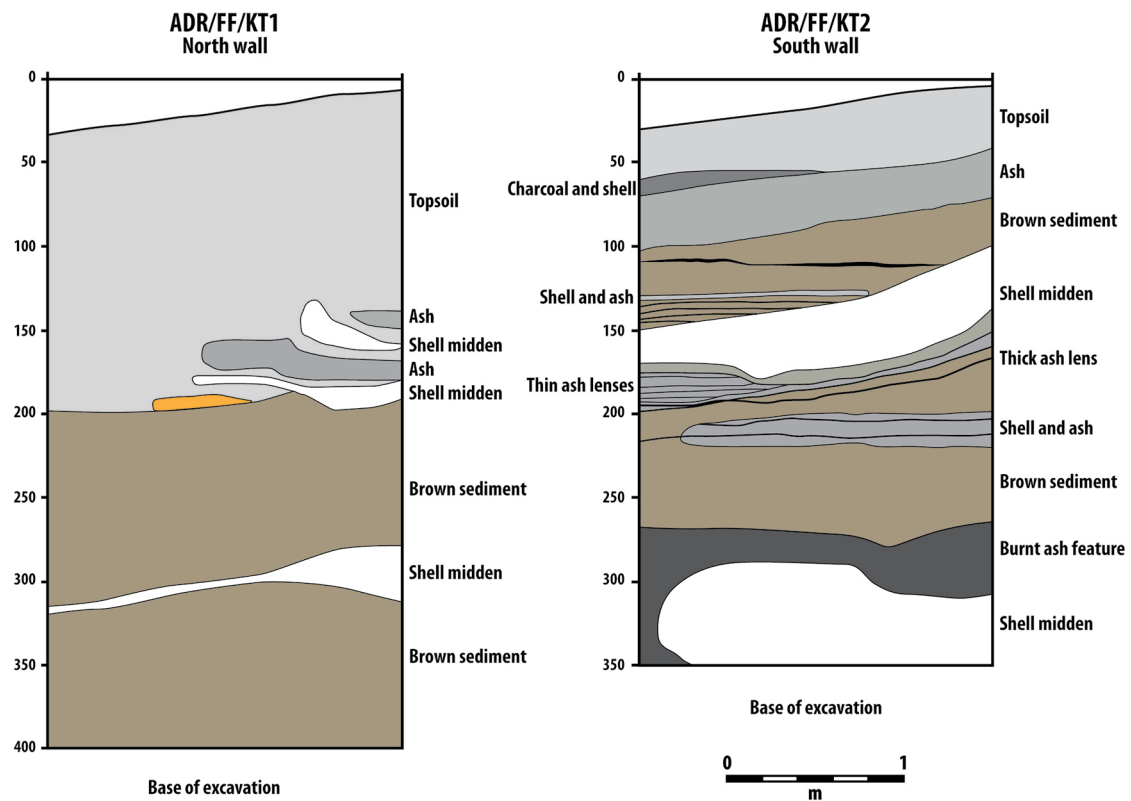


Figure 9.3: Stratigraphy of ADR/FF/KT1 and ADR/FF/KT2, incomplete and not yet at bedrock.

Source: Image by Dylan Gaffney, adapted from illustration by Bau Mene.

ADR/FF/KT1

The upper spits, Spits 1 to 24 (10 cm to 250 cm from datum level; see Figure 9.3), were dominated by midden shells, associated with pottery fragments (both decorated and plain), stone axe fragments, bone tools, bone, and bone jewellery in the form of rings and necklace pendants. Some shell and bone fragments were burned, indicating fires were used at the site. Charcoal was also found mixed with the burned shell. Radiocarbon dating indicates that the pottery postdates 5286–4970 years old

(Table 9.1). By Spit 29, the deposits were dominated by shells, alongside lithics, bones, and charcoal. By Spit 36, which dates to 9124–8784 years ago, stone flakes were more commonly encountered than above, alongside shell, mammal and fish bones, and charcoal. By Spit 39, which similarly dates to the Early Holocene, shells were less common but flakes were still abundant, alongside ochre, animal bones, and charcoal. By Spit 45, dating to the Terminal Pleistocene 12,024–11,818 years ago, archaeological material was less dense, including animal bones, lithics, and charcoal. In Spit 53, dating to the LGM at 26,302–25,926 years ago, animal bone was dense, alongside abundant ochre (red and yellow), scattered charcoal, and less frequent lithics. Bedrock was not reached and further excavation is required to reach culturally sterile layers.

Table 9.1: Radiocarbon results from Andarewa ADR/FF/KT1.

Lab code	Spit	Depth cm	Material	Radiocarbon age	d13C	Calibrated date (95.4%)
Beta-562599	29	290–300	Charcoal	4460±30 BP	-29.1	5286–4970 cal. BP
Beta-562600	36	360–370	Charcoal	8080±30 BP	-31.8	9124–8784 cal. BP
Beta-543746	39	390–400	Charcoal	8890±30 BP	-26.5	10,175–9900 cal. BP
Beta-543747	45	450–460	Charcoal	10,240±30 BP	-24.5	12,024–11,818 cal. BP
Beta-609186	53	530–540	Charcoal	21,870±80 BP	-24.5	26,302–25,926 cal. BP

Source: Authors' summary, calibrated using OxCal 4.1 with IntCal20.

ADR/FF/KT2

The archaeological material in this excavation was very similar to that in ADR/FF/KT1. In the upper spits, Spits 1–23 (10 cm to 230 cm from datum level; see Figure 9.3), pottery fragments, bone fragments, jewellery made from fish bones in the form of rings and pendants, shells, lithics, and charcoal were present. Pottery fragments in Spit 23 were particularly dense. The radiocarbon dating results indicate items in this spit are 1520–1358 years old (Table 9.2). In Spit 26, the findings included shells and charcoal, while pottery fragments were few in number. At this depth, three stone axes were found. In Spit 29, shells, shell artefacts, bone tools, and charcoal were present, and pottery was infrequent. Dates from this spit indicate pottery in the region is at least 2096–1182 years old. By Spit 39, pottery was not present, but shells, bone points, shell artefacts, crabs, mammal and fish bones, and stone artefacts were present. This spit dates to the Early Holocene, 7922–7700 years old. As at ADR/FF/KT1, bedrock was not reached, and further excavation is planned.

Table 9.2: Radiocarbon results from Andarewa ADR/FF/KT2.

Lab code	Spit	Depth cm	Material	Radiocarbon age	d13C	Calibrated date (95.4%)
Beta-562596	23	230–240	Charcoal	1580±30 BP	-25.0	1530–1394 cal. BP
Beta-562597	26	260–270	Charcoal	2030±30 BP	-24.7	2096–1182 cal. BP
Beta-562598	29	290–300	Charcoal	2030±30 BP	-26.6	2096–1182 cal. BP
Beta-609185	39	390–400	Charcoal	6970±30 BP	-27.1	7922–7700 cal. BP

Source: Authors' summary, calibrated using OxCal 4.1 with IntCal20.

Lithic technology at Andarewa Cave

Overall, 3697 stone artefacts were recovered from the two excavations. In both excavations, lithics were discovered in almost every spit. Several types of artefacts were present in the assemblages: flakes, cores, and stone axes. About 14 per cent of the lithics have so far been analysed ($n = 530$), having been randomly selected to provide a summary and qualitative description of the technology; the sample described here includes 516 flakes, seven cores, and seven axes.

Flakes

In the flake assemblage, 382 are complete, 77 are broken, and 57 have been designated as scrapers. Most flakes were made from a fine-grained sedimentary stone (reddish-brown, light brown, brown, grey, light grey, black, and white), although a small number were created from limestone and igneous rock. Most are regular in shape (Figure 9.4): the smallest intact flake measures 18.74 mm long, 30.47 mm wide, and 5.34 mm thick, and weighs 2.53 grams; the largest flake is 76.97 mm long, 23.85 mm wide, and 10.01 mm thick, and weighs 12.62 grams.

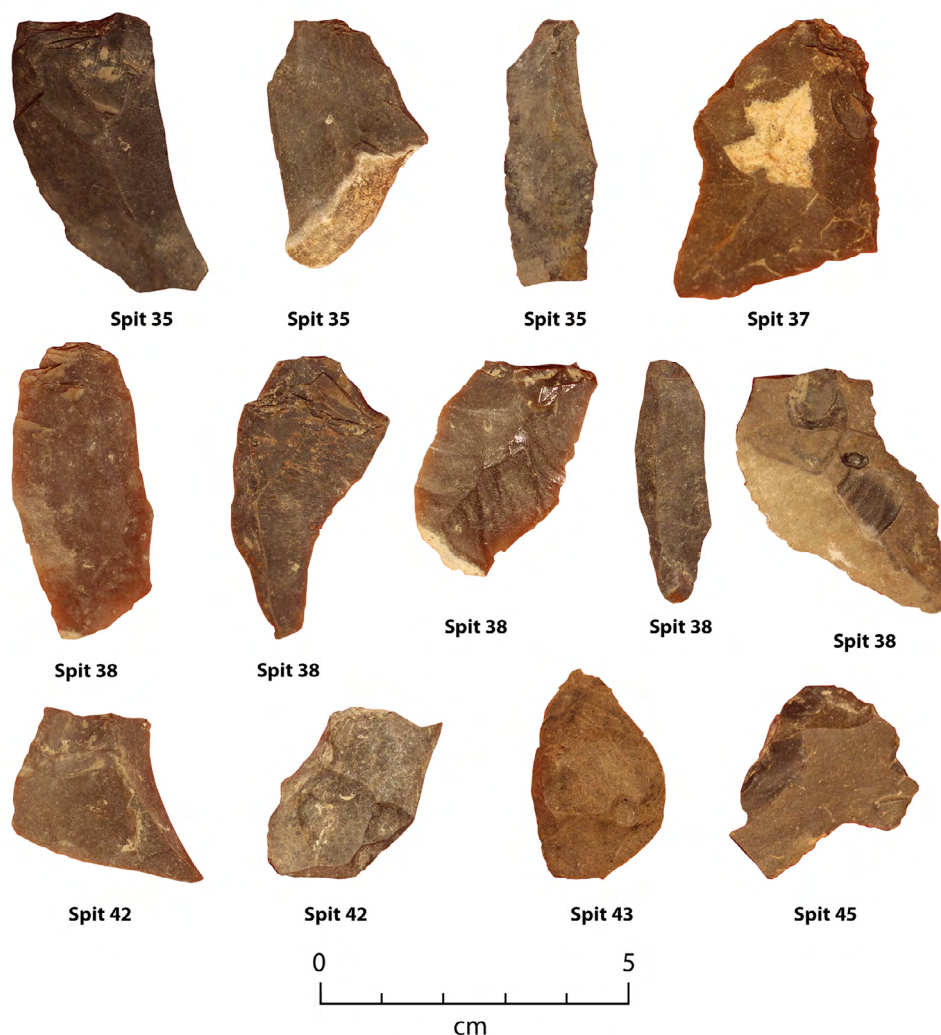


Figure 9.4: Flakes excavated from ADR/FF/KT1, Andarewa Cave.

Source: Image by Bau Mene and Dylan Gaffney.

Generally, flakes were made from cores using free-hand direct percussion. Flakes frequently have scars on the dorsal surface, indicating former flake removal in a unidirectional manner, or occasional platform preparation for future flaking. A small number of flakes retain scars initiated from various directions indicating multidirectional flake removals and core rotation. Of the complete flakes, 46 per cent have plain platforms, 17 per cent have faceted platforms, 34 per cent have crushed platforms, and 3 per cent are cortical. Many flakes are crushed at the proximal end indicating repeated attempts at flake removal from small cores. Discolouration and pottlidding on some artefacts indicate they were exposed to fire, whether as part of the flaking process, or after discard and mixing with hearths at the site.

Blades were uncommon and not systematically produced. Eighteen flakes were retouched or shaped on the lateral and distal edges of the flake. Twenty-eight expanding flakes with retouched and utilised edges were designated scrapers and all of these are made of sedimentary stone. Scraper size from Andarewa varied: the smallest is 25.25 mm long, 29.55 mm wide, 5.02 mm thick, and 2.41 grams; the largest is 85.58 mm long, 38.45 mm wide, 9.41 mm thick, and 26.86 grams.

Cores

All seven cores were made on sedimentary stone and recovered from ADR/FF/KT2, Spit 26, at a depth of 270 cm (Figure 9.5). The average size is 58.14 mm by 39.43 mm and 48.38 grams in weight. The cores have both single and multiple striking platforms, with many cores having been rotated. The platform size is variable, with an average width of 25.88 mm.

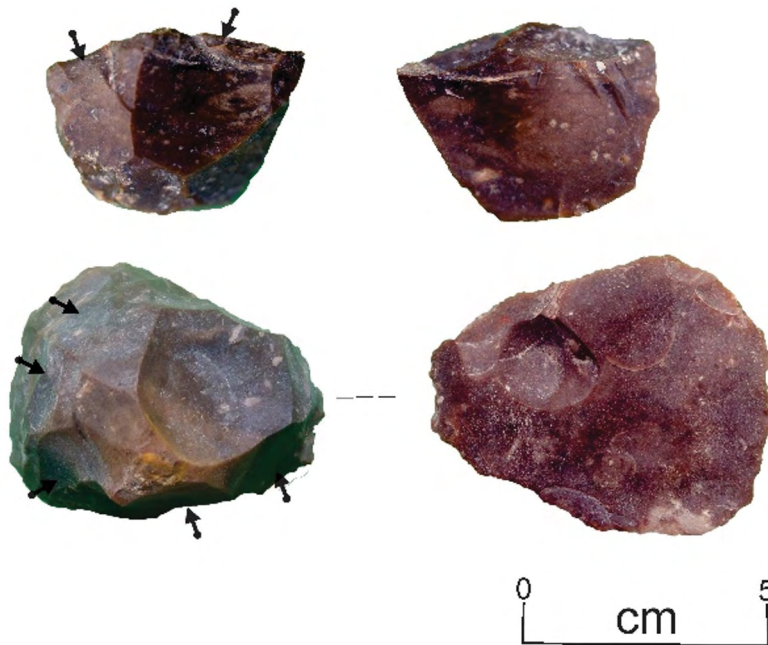


Figure 9.5: Flake cores from Andarewa Cave.

Note: Top: shows core with unidirectional flake detachments from platform. Bottom: shows core with bifacial shaping around margin producing scars on dorsal surface.

Source: Image by Bau Mene.

Axes

Seven flaked stone axe preforms were found in Late Holocene contexts at the Andarewa excavations (Figure 9.6; Table 9.3). These include one limestone artefact recorded in ADR/FF/KT1, Spit 13. This limestone is a 3 on the Mohs Hardness Scale. Fine-grained sedimentary pieces were recorded in ADR/FF/KT2, from Spits 8, 26, and 27. This rock has a hardness of 5. These artefacts were associated with marine shells and earthenware pottery fragments. Those recorded in ADR/FF/KT2, Spit 26, were also associated with animal bones and bone jewellery. In general, stone axe production was carried out with longitudinal flaking, with primary flakes detached lengthways, followed by unifacial and bifacial shaping.



Figure 9.6: Axe preform from Andarewa Cave, ADR/FF/KT1, Spit 13.

Source: Image by Bau Mene and Dylan Gaffney.

Table 9.3: Stone axes recorded at Andarewa Cave.

XU	Spit	Length (mm)	Width (mm)	Thickness (mm)	Raw material	Associated archaeological material
ADR/FF/KT1	13	110	38	25	Limestone	Pottery, shell
ADR/FF/KT2	8	95	31	26	Sedimentary	Pottery, shell, bone jewellery
ADR/FF/KT2	26	60	30	14	Sedimentary	Pottery, shell, bone jewellery
ADR/FF/KT2	26	78	23	20	Sedimentary	Pottery, shell, bone jewellery
ADR/FF/KT2	26	70	33	16	Sedimentary	Pottery, shell, bone jewellery
ADR/FF/KT2	27	75	43	30	Sedimentary	Pottery, shell, bones
ADR/FF/KT2	27	94	31	21	Sedimentary	Pottery, shell, bones

Source: Authors' summary.

Bone artefacts at Andarewa Cave

Microscopic analysis was performed on bone artefacts to examine marks left by forming, working, and finishing techniques. This also allowed for a provisional taxonomic analysis of the kinds of animals used as raw materials. Each artefact was classified based on its shape and interpretations made about intended functions.

Pig tusks



Figure 9.7: Pig tusk artefact from Andarewa, ADR/FF/KT2, Spit 7.

Source: Image by Adi Dian Setiawan.

The *Sus* sp. tusk in Figure 9.7 measures 10.5 cm by 1 cm and was recovered from ADR/FF/KT2, Spit 7, dating to sometime after 1530–1394 years ago. One hole is present at the distal end of the tusk, made by perforation. It has also undergone grinding and sharpening at the distal and proximal ends to make it smoother, sharper, and shinier. Pig tusks are commonly used as septum ornaments around the interior of New Guinea, often denoting prestige or personal preferences, sometimes used in ceremonies or other events. However, the perforation at one end of the tusk may indicate it was tied to other objects as a pendant, necklace, or string bag decoration.

Dog teeth

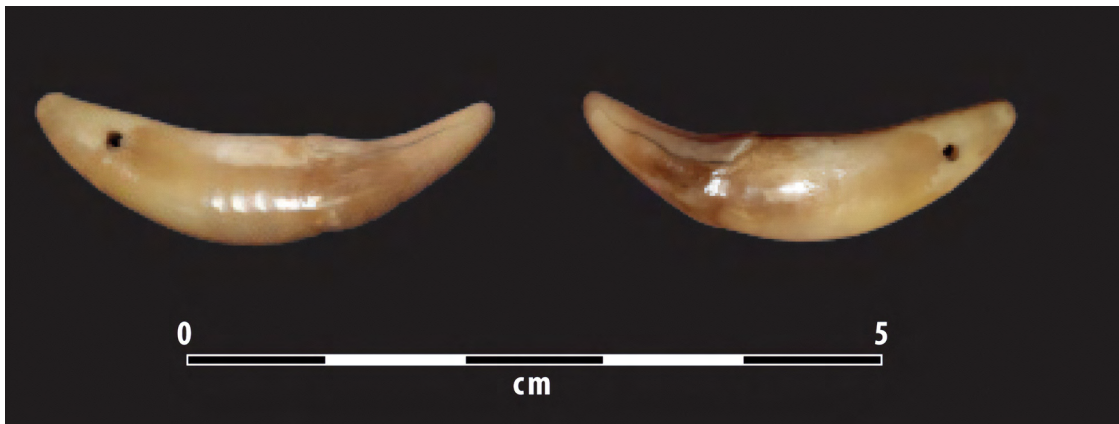


Figure 9.8: Dog canine tooth artefact from Andarewa, ADR/FF/KT2, Spit 6.

Source: Image by Adi Dian Setiawan.

The *Canis* sp. canine tooth in Figure 9.8 measures 3.3 cm long and 1 cm wide, and was excavated in ADR/FF/KT2, Spit 6, again dating to after 1530–1394 years ago. The tooth was also perforated in the proximal end and appears to belong to a dog-tooth necklace, common in some parts of coastal New Guinea.

Crocodile teeth

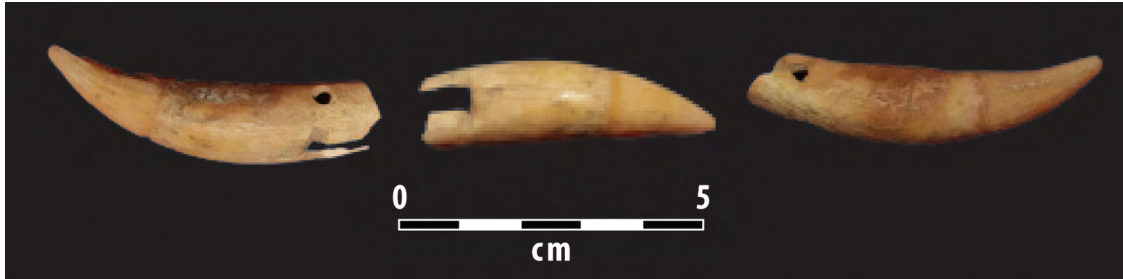


Figure 9.9: Crocodile tooth artefact from Andarewa, surface of ADR/FF/KT1.

Source: Image by Adi Dian Setiawan.

The crocodile (*Crocodylidae*) tooth in Figure 9.9 was found on the surface of ADR/FF/KT1, and measures 5 cm long and 1.3 cm wide, again with a perforation at the proximal end.

Fish bone



Figure 9.10: Three links in a fish vertebra chain necklace from Andarewa, ADR/FF/KT/1, Spit 8.

Source: Image by Adi Dian Setiawan.

Figure 9.10 shows three links in a necklace excavated as a series of objects from ADR/FF/KT1, Spit 8, and dating sometime after 5286–4970 years ago (Mene 2019, 26). The three chain links are 4.5 cm long, and each link is 2.2 cm wide and 2 mm thick. The object is made from large fish vertebrae that were widened manually to enlarge the foramina, and later polished.

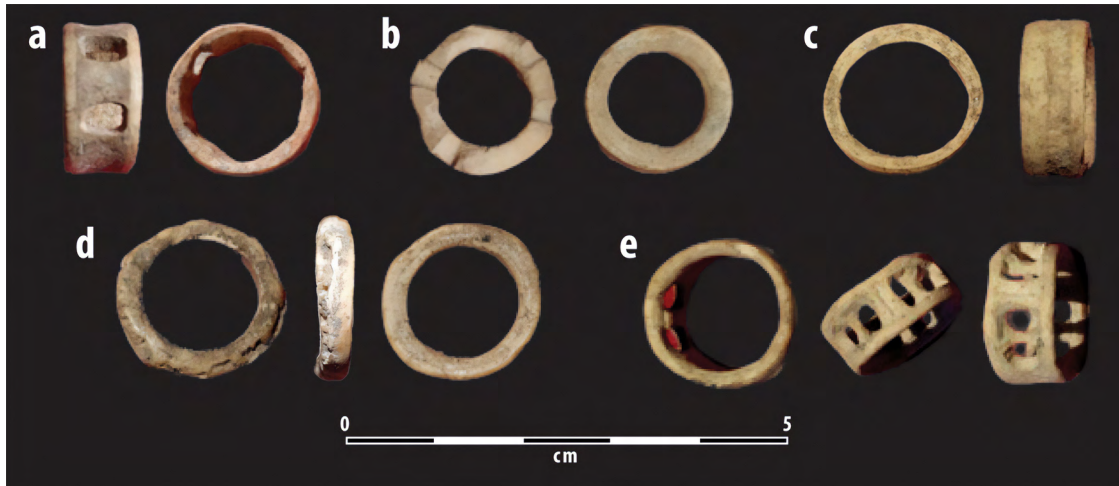


Figure 9.11: Fish vertebrae artefacts from Andarewa.

Source: Image by Adi Dian Setiawan.

The artefact in Figure 9.11a is made of a shark or ray (*Chondrichthyes*) vertebra. It was perforated in two parts to form the decoration, with scraping and polish on the outside. Abrasion marks on the inner surface are irregular indicating partial polishing or usewear. The fish vertebra jewellery in Figure 9.11b was found in ADR/FF/KT2, Spit 23, dating by association to 1530–1394 years old. It is 1.4 cm long, and 0.2 cm wide. It has four concave-shaped perforations on one side and it has subsequently been polished to flatten both the interior and exterior sides. The fish vertebra artefact in Figure 9.11c was excavated in ADR/FF/KT2, Spit 11, and has a length of 1.4 cm and a width of 0.5 cm. The object has a decorative V shape on the outside, formed by perforation followed by grinding and polishing techniques. The object may have been used as a ring or as part of a necklace or pendant.

The fish vertebra in Figure 9.11d was found in ADR/FF/KT2, Spit 13, and is 2.2 cm in diameter and 2 mm thick. It has been finished with a polishing technique on one side only. Based on the shape and size it is possible that this ring was part of a necklace in the same design as the three-link chain necklace (see Figure 9.10). The object in Figure 9.11e was recovered from the same spit in ADR/FF/KT2. This fish vertebra has a diameter of 2.2 cm with a thickness of 0.6 cm and several holes perforating the surface, likely made for decoration. The vertebra was subsequently polished.

Discussion

The 2018–2021 excavations at Andarewa provide a provisional sequence of cave use from the LGM through to the Late Holocene. From the small sample of lithics analysed in this chapter, the technology (the type of raw material and flaking process) was generally consistent across the spits. However, more intensive lithic analyses and statistical tests of the whole assemblage are required to verify this assertion.

The raw material of the stone tools from the Andarewa site is dominated by a fine-grained sedimentary, and the cortex material seems to derive from cobbles. The site sits on the edge of two geological zones: the Ogar Limestone to the west with reef limestone, minor chalk, and thin shale, and a Quaternary alluvium to the east. About 2 km to the south-west are outcrops of the Onin Limestone, which contains fine-grained limestone and minor argillaceous limestones and marlstones. The Waya River about 10 km to the south of the site flows through the Onin Limestone zone and, upon

reconnaissance survey, was found to contain secondary deposits of flakable marlstone and limestone. It is likely that the sedimentary stone at Andarewa is the same marlstone, which can appear similar to chert but is derived from carbonate rather than siliceous mineral grains. Given the wide range of sedimentary stone colours recorded in the lithic assemblage, it is possible that other varieties of marl/chert were also imported into the site from a wider area. Igneous rock and limestone were also used as raw materials; the former would need to be imported from much further afield such as on the Bird's Neck or northern Bird's Head, while the latter may be local to Andarewa Cave or the underlying geological zone.

The high flake-to-core ratio (74:1), the general lack of cortex on the platforms and dorsal surface, and the high frequency of faceted and crushed platforms suggest the stone was in middle–late stages of reduction. Most cortical pieces had been removed offsite before cores were transported to the site for reduction. The cores at the site were nearing the point of exhaustion, which further supports the idea that raw material was obtained outside of the immediate area.

The association of stone axes with pottery, alongside Late Holocene radiocarbon dates ranging sometime between 2000 and 1000 years old, indicate that axe manufacture marked a recent shift in technology. This is despite the presence of stone axes from Wallacea and New Guinea in Early Holocene contexts (Gaffney et al. 2015; Shipton et al. 2020). Whether the change at Andarewa marks the influx of new communities bringing distinct stone tool-making practices (such as ancestors of what are now North Bomberai Austronesian speakers, or the West Bomberai non-Austronesian speakers; see Usher and Schapper 2021) or a shift in site use towards more intensive forest clearance and maintenance, needs to be resolved with further research. The preferential use of sedimentary stone (probably marlstone but possibly imported chert) rather than limestone for axes likely relates to the greater hardness and durability of the raw material.

Personal bone and tooth ornaments have been used around New Guinea since the Late Pleistocene (Langley et al. 2019; Leavesly 2007); however, no evidence for such objects have yet been recorded in Pleistocene layers at Andarewa. The bone artefacts at Andarewa all date to the Late Holocene, probably 1530–1394 years ago and thereafter. They are diverse in raw materials, form, and production techniques. The pig tusk may have been used as a male nose ornament perforating the septum, as practised ethnographically, or as part of a multicomponent object or body decoration. The dog and crocodile teeth seem to have been used as pendants, given the placement of the perforation at the proximal end, perhaps arranged along with many others to form a necklace like those known ethnographically from around the New Guinea coast. Some of the fish vertebrae appear to have formed a long necklace with multiple rings. It is also possible these vertebrae were hung individually as pendants, or used as finger rings, although no ethnographic examples for the latter are known from New Guinea (Tolla 2016, 9).

Conclusion

So far, the research conducted at Andarewa Cave on the Bomberai Peninsula between 2018 and 2021 has produced thousands of artefacts consisting of flaked stone tools, ochre, earthenware pottery fragments, bone tools and jewellery, and shell tools, alongside ecofacts like animal bone fragments, plant remains, shell midden, and charcoal, attesting to the hunting and gathering activities of the cave occupants. Much of this material is under current analysis and awaits publication. Provisional radiocarbon dating presented here demonstrates that human occupation recurred from the LGM, about 26,000 years ago, through to the Late Holocene, about 1400 years ago. Further excavation is planned to extend these sequences to bedrock and determine the initial timing of frequentation.

Based on the analysis of stone artefacts from Andarewa, tools are dominated by (probably local) fine-grained sedimentary flakes and cores, scrapers, and stone axes made by unifacial and bifacial hard-hammer percussion. Unlike some other sites in eastern Indonesia and in New Guinea, stone axes at Andarewa are associated only with pottery-bearing contexts dating to the last two millennia before the present. Bone jewellery was also produced in the Late Holocene, made from animals deriving from the marine and estuarine environments that characterise the site today, as well as from domestic animals.

Acknowledgments

We thank the communities of Goras and the Andarewa area for their support during fieldwork.

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