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– RESEARCH REPORT –

Sago Oven Pottery Production in the Raja Ampat Islands of the Far Western Pacific

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ABSTRACT

This paper is the first ethnographic description of ceramic sago oven production in the Raja Ampat Islands of West Papua. These rectilinear ovens are widespread throughout eastern Indonesia, used to bake sago flour into small 'cakes,' which can be stored during times of food shortage or used in exchange. Little is known about the emergence of this technology in the past and so this modern baseline serves as an important link to understand production sequences in the archaeological record. This record will be central to understanding sago processing in the deeper past, a key part of a wider system of forest exploitation in the far western Pacific Islands.

Keywords: Sago; pottery ethnography; New Guinea

INTRODUCTION

Sago palm (*Metroxylon sagu*) is the core subsistence crop for many of the islands of Southeast Asia and Near Oceania, and the history of its cultivation in the circum-New Guinea region is essential for understanding the long-term processes of human behavioural adaptation within these equatorial rainforest zones (Barker *et al*. 2007; Barton and Denham 2018). This paper documents sago oven production on Arefi Island, off the north coast of Batanta, representing the first ethnographic description of pottery manufacture in the Raja Ampat Islands. The Raja Ampat group is situated at the very interface of Wallacea and the Pacific, a transitional zone between Malesian and Papuasian floras, where sago is the key economic plant species. Pottery is today made at three locations in Raja Ampat: Arefi and Yensawai around north Batanta, and at Kabilol in Waigeo's Mayalibit Bay (Fig. 1). Sago ovens are the only objects still produced but in the past this was likely to have been more varied and more widespread (see Petrequin and Petrequin 2006). As we know almost nothing about pottery manufacture in the area (both ethnographic and archaeological), this study forms a crucial present-day link to archaeological artefacts found in the island group. These ceramics present a unique proxy to describe the emergence of sago flour processing in the Asia–Pacific region. Because sago flour products can be stored for long periods, this has several important implications, including the production of surplus for exchange, risk reduction throughout the annual cropping cycle, as well as the ability to provision groups for long-range sailing trips.

SAGO OVENS IN EASTERN INDONESIA AND WESTERN NEW GUINEA

Sago 'ovens' or 'moulds' are common in eastern Indonesia. These are known as *forno* in Raja Ampat or *forma* in Maluku, from the Dutch *vorm* and Portuguese *forna*. Their production is documented ethnographically on Mere Island near Halmahera (Petrequin and Petrequin 2006:354), Seram (Ellen and Latinis 2012), Saparua (Ellen and Glover 1974; Petrequin and Petrequin 2006:366), and Ambon (Spriggs and Miller 1979) in central Maluku, south in the Kai Islands (Petrequin and Petrequin 2006:379), and the Aru Islands (Veth *et al*. 2005), and in Cenderawasih Bay at Serui, off the northwest coast of New Guinea (Petrequin and Petrequin 2006:398). As noted by Ellen and Latinis (2012), they were recorded in coastal Seram as early as the mid-nineteenth century by Alfred Wallace (1869:291), the mid-eighteenth century on the Bird's Head by Thomas Forrest (1779), and the sixteenth century by Antonio Galvao (1544). Similar ovens are also reported from nineteenth century museum collections deriving from Sulawesi to western New Guinea, although they are notably absent from eastern New Guinea even in sago production areas (see Ellen and Glover 1974).

Sago oven fragments are represented in archaeological assemblages from Hatusua on Seram (Latinis 2002), Wangil midden in the Aru Islands (Veth *et al*. 2005), and at

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Figure 1. The northern Raja Ampat Islands. The locations of sago oven manufacturing villages are marked in red triangles. Major towns are marked as black circles.

Yembakaki on Batanta (Galis and Kamma 1958) and their identification in archaeological sites is a useful proxy for sago flour processing and sago cake production in the past. The first sago ovens in central Maluku, found on Seram, date to *c.* 1200–1000 years ago, prior to extensive European contact, and are perhaps a pre-colonial Maluku innovation (Ellen and Latinis 2012), which spread east into New Guinea through established trade networks. Conversely, in the Aru Islands, sago oven fragments only date to within the last 650–300 years, suggesting a colonial introduction from central Maluku (Veth *et al.* 2005). Because the forming process is relatively simple, production techniques may have dispersed quickly between connected villages, especially to other potting groups already familiar with clay extraction and processing.

Within Raja Ampat, earthenware pottery making is only practiced by women in three villages, although in no place is it a large-scale or full-time endeavour. At Kabilol in Mayalibit Bay, Ambel speakers produce occasional *forno* and sell them in Waisai and Sorong or use them locally. At Yensawai on the north coast of Batanta at least five women still make ovens but they are not aware of the potters in Mayalibit Bay. At Arefi only a handful of older potters still produce ovens in very limited numbers (Fig. 2).

THE HISTORY AND SOCIAL ORGANISATION OF POTTING AT AREFI

Maryone (2010) recounts the oral traditions of the Biak speaking people at Arefi, showing that they probably migrated westward from Numfoor Island in New Guinea's Cenderawasih Bay sometime in the recent past. This may have been prior to, or at the time of, the Koreri cargo cult being brought to the area with Manarmakeri, who is believed to one day return bringing a state of prosperity. Continuing west from Batanta, Biak people came into contact with Tidore, near Halmahera, becoming tributaries of their sultan under Sawai in the fifteenth century. In exchange for gifts to the sultan the Biak received cloth and elevated privileges within Raja Ampat. It is possible that a number of technologies prominent in Maluku entered the westernmost Pacific through these new networks; this includes simple ironworking (Kamma and Kooijman 1973), and perhaps sago oven manufacture, from pottery makers such as the Mare Islanders, 4 km south of Tidore (see Petrequin and Patrequin 2006:349). It is possible that in the past the Arefi potters also produced globular pots with everted rims, which are typical of Biak pots further east (Fairyo 2009).

The Arefi potters do not know the ancestral origins of sago ovens, but a local story states that one woman found

Figure 2. The north Batanta area showing location of Arefi village, nearby Yensawai village, and two clay deposits (BAT2 and BAT3) (Source: Digitalglobe 2018).

the clay source and realised it was good for making ceramics. She then told the leader of Arefi and the whole village followed her to see the exact location, where they then hosted a large celebration with many offerings. The woman then trained others to make the pots. It is unclear how long ago this was (although it is more than three generations) and if the woman was from Arefi or derived from another area. Similar stories abound amongst Austronesian speaking potting groups, whereby one woman visits or marries in to an area and teaches her new village how to pot.

Out of fifteen clans at Arefi, only four women from a single clan still make *forno.* Pottery making has been passed down vertically from mothers to daughters, with children helping to collect clays and adolescent girls beginning to learn forming methods, although today young women are no longer learning. Unlike in some areas of New Guinea, there do not appear to be strict social prohibitions preventing Arefi women making sago ovens when they leave the village. This is probably because these groups have never relied on pottery for subsistence trading. However, the lack of suitable clay in most parts of Raja Ampat is cited as the main reason women do not make pots outside of these restricted areas.

Within Arefi village, a single pottery making area is located behind one potter's house, overlooking a swamp and the forest/gardens to the east (Fig. 3). The pottery shed is situated amongst a number of other activity areas such as woodworking, laundry/washing, and storage, and so is not a workshop in the sense of specialised manufacture. Dry clay and fresh water are stored in metal drums next to the potting shed for easy access. The firing location is close by and not exclusively used for pots, while the drying area is predominantly used as a kitchen abutting the house.

THE *CHAÎNE OPÉRATOIRE* AT AREFI VILLAGE

The manufacturing sequence at Arefi village was recorded with three potters. This process is known as *fararur saprop* (clay working), and involves the procurement of local clays, the minor processing of the paste, slab construction using a variety of paddles, boards, templates, and knives, and drying and open firing, followed by distribution around Raja Ampat, use in cooking sago cakes, reuse as cooking lids, and discard (Fig. 4).

Procurement and clay processing

Both the Arefi and the Yensawai potters use the same clay source within a small bay on the west coast of Birie Island, only 1.8 km from Arefi village (Fig. 2). This is recorded as

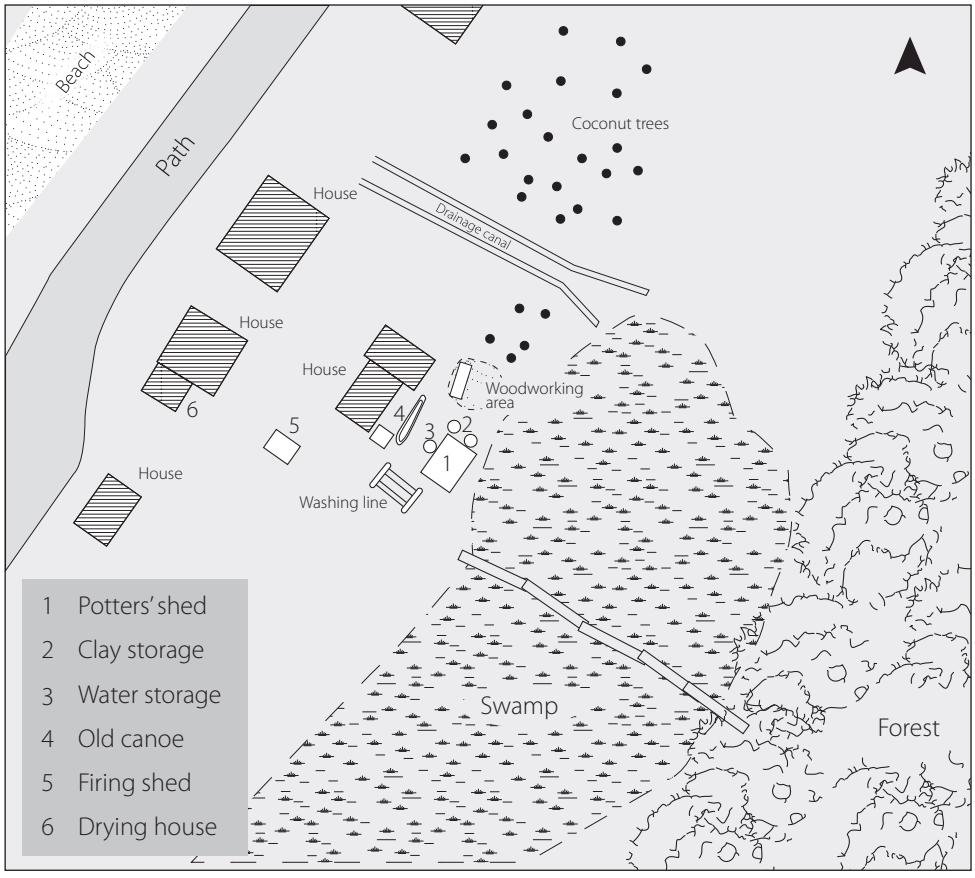

Figure 3. Pottery manufacturing area on Arefi. Sketch map is not to scale.

BAT2 in the Raja Ampat site survey database and is known locally as *Sapor Ides* (*sapor* = cliff; *ides* = white-brownish colour of the clay). This consists of a single active clay pit (2 m × 2 m) just behind a sandy beach and lies within a larger area (~10 m × 5 m) of now defunct clay pits. It is evident from the area's spatial extent that procurement was either much more frequent in the past, or that the same source has been in use for a considerable time.

At the time of recording, the potters removed overhanging branches and leaf litter and bailed out ground water that had collected in the pit. One of the potters then used a metal digging stick to quarry horizontally into the pit and collect clay in plastic buckets (Fig. 5a), that were then passed to the others for inspection and the removal of large twigs and inclusions (Fig. 5b). The potters are cautious during this work due to the risk of the tunnel collapsing. Previously, men were involved with procurement by paddling the canoes and digging for clay. It formerly took a whole day to paddle to the clay source and back, but outboard motor boats reduce the time.

In the past, the potters' grandmothers also used another, now defunct, clay source (BAT3) on Yu Island. This provided *saprop ipbaesem* (black clay), but the technical properties are said to be inferior. Both clay sources lie on the Lower-Mid Miocene Yarifi Formation, comprising tuffaceous sandstone, siltstone, mudstone, agglomerate, minor lava, conglomerate, and limestone (Amri *et al*. 1990), and the clay deposits are restricted to the beach flats, deriving from alluvial runoff from the limestone cliffs immediately behind.

In processing the clay, no sand temper is added but large stones and sticks are removed because they produce cracks during drying. At Yensawai and Kabilol the potters strain and sieve the clay in an old canoe after collection, but at Arefi this technique is no longer used. The Arefi potters minimally mix the clay with fresh water when available and leave it in a large metal barrel to soak.

Forming

Two emic oven types are identified by the potters: *saprop inepes*, in rectangular cross-section, and *saprop isewer*, in trapezoid cross section. Two sizes are also distinguished: *saprop iba* (large clay) and *saprop mgun* or *saprop mkun* (small clay). Despite this variation, the forming method and function are broadly identical.

The forming stages follow a series of simple steps. Firstly the clay is thrown onto a flat *kambafen* (board) and large inclusions are removed with a metal knife (Fig. 5c). There are three different *kambafen* for different stages

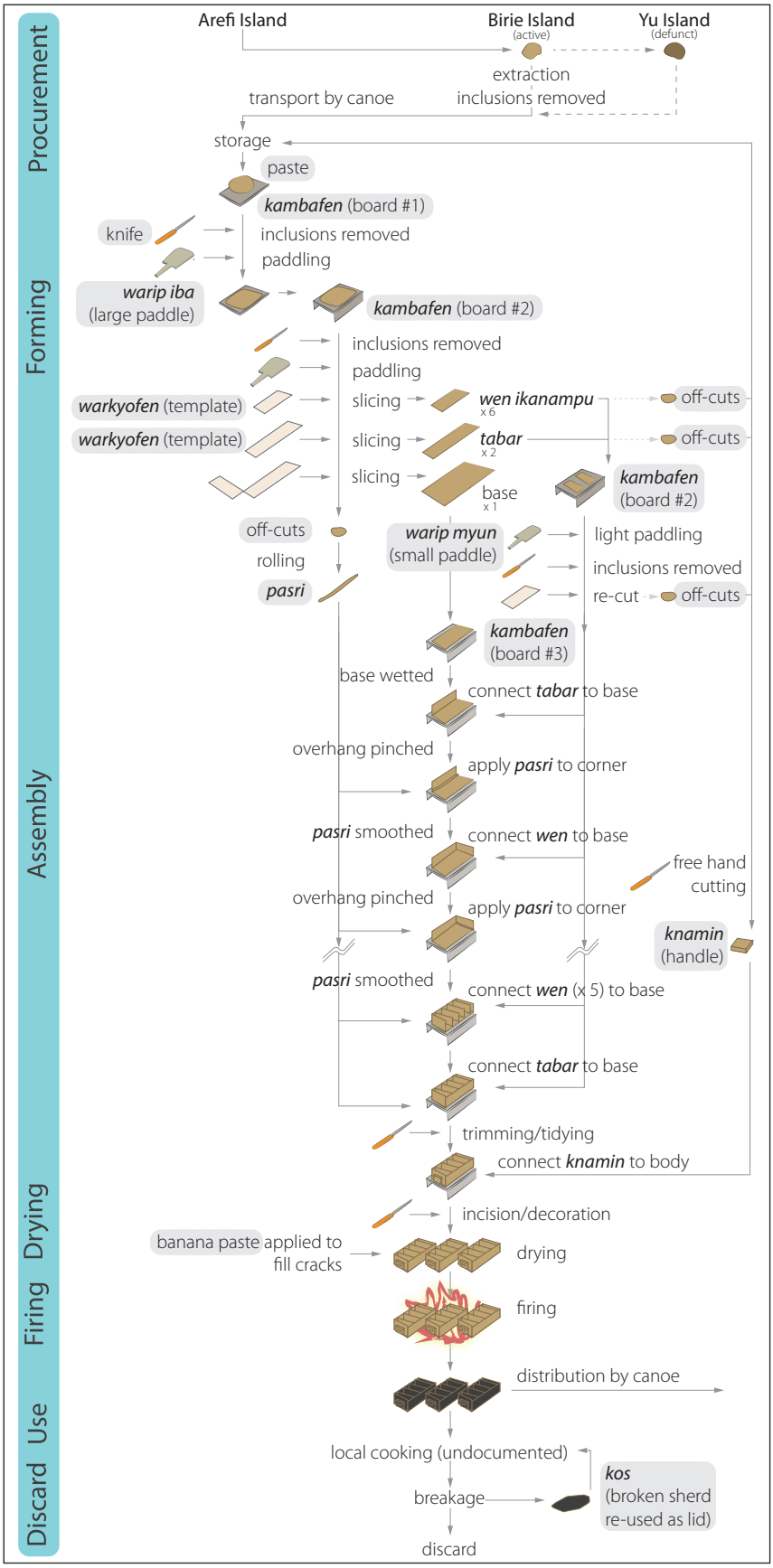

Figure 4. A *chaîne opératoire* of *forno* production at Arefi village

of production. The first is a large (570 × 410 × 30 mm) wooden board suitable for heavy-duty paddling. A *warip* (paddle) is then used to flatten and thin the clay into a slab, at the same time allowing large stones and grit to be further removed with a knife. This is a large paddle (*warip iba*), which is 450 mm long and 150 mm wide, and the potters use both the paddle edges to direct the maximum force into pounding (Fig 5d), and the broad paddle faces to flatten the clay. The paddle is dipped in fresh water to moisten then clay. The slab is peeled and flipped over a number of times as this stage is repeated.

When the slab is an appropriate thickness, it is shifted to a second large (420 × 330 × 10 mm) *kambafen*, with a stand raising it *c.* 10 cm off the ground. The potter continues to paddle (now more lightly) and flip the slab while removing large inclusions. The knife is held in a precision grip close to the blade's tip and the aim is to carefully remove the inclusions without scarring the slab with large potholes.

Then, the slab is cut to shape using a small *warkyofen* (a wooden template, 115 × 65 × 2 mm) and metal knife (Fig. 5e), and rectilinear clay pieces (*wen*) are placed to one side. These *wen ikanampu* (small slabs) will go on to form the oven's end and interior walls. Later the slab is cut again using a longer *warkyofen* (255 × 65 × 2 mm) producing *tabar* (foundation slabs) that will form the two long sides of the *forno*. The base of the *forno* is then estimated and cut with a metal knife (Fig. 5f). Two edges are cut freehand and then the rough size is calculated by lining the small and large *warkyofen* templates up together to form one corner (Fig. 5g).

The walls and base are now roughly cut and ready for further preparation. The *wen* and *tabar* are wetted and smoothed on both sides by the potter's hands. They are then tapped with a smaller paddle (*warip myun,* 410 mm long and 100 m wide) against the flat *kambafen,* to thin out the structure but not distort the overall form. Stones continue to be removed and the pieces are re-cut to the intended size using the *warkyofen*. The edges are smoothed with the fingers and they are laid aside. *Pasri* are prepared at the same time. These are thin rolls of clay used to glue together the *wen* and *tabar*, forming the structure of the oven. The base is laid on a third small *kambafen* (380 × 230 × 30 mm), with a stand raising it *c.* 10 cm off the ground, which forms the platform for assembling the *wen* and *tabar.*

Assembly

All of the structural pieces are now ready for assembly. The base is rubbed with water to moisten it and one *tabar* is aligned along the long edge. This is placed so that there is some overhang on the base, which can then be pinched upwards with one finger, gluing it to the base (Fig. 6a). Next, a roll of *pasri* is inserted along the interior corner point, between the *tabar* and base, and smoothed to further glue the two pieces together (Fig. 6b). The *wen* is then attached in the same method. The *wen* and *tabar* are pinched together on the outside, and *pasri* are inserted on the inside (Fig. 6c). Internal *wen* are then inserted, one by one, and glued down along each edge using *pasri*, forming the *swaef* (gridded spacing in between each slab). Lastly, the final *tabar* is aligned forming the second long side (Fig. 6d), excess material is cut away, and it is glued down using the pinching and *pasri* method. The edges are tidied up with a metal knife and smoothed with the hands. While it is still wet, *knamin* (handles, lit. ears) are often added to the short end of the vessel (Fig. 6e), but these are not essential. The ovens are left undecorated except for occasional crosshatch incisions on the handles.

Drying and firing

After forming, ovens are usually dried between one to three days (Fig. 6f). The vessels are left outside in the sun or in a drying shed to dry the interior, which provides structural support before they are flipped over to dry the base. If cracks form, the glue from banana trees will be used as putty to cover the clay. If they need to be dried further due to periods of high humidity, or stored before firing due to the potter's other scheduling commitments, they will be left above the kitchen fireplace in a house.

Next the vessels are fired. The vessel is balanced on three coral blocks or a metal stand, over a small open fire, using hardwood as fuel (Fig. 6g). The firing observed was very low temperature, resulting in some ovens being friable, but in the past, given more frequent production, it is likely that larger numbers of *forno* were fired at one time and at higher temperatures.

Distribution

At Arefi women can make about five small or four large *forno* per day. The potters only produce on an *ad hoc* basis, when clay is present in the village and these are made sporadically in high-intensity bursts. When they have transport, the potters will also take their products further afield for sale. Each potter sells to different villages in the Raja Ampat group, reflecting slightly different social networks. They sell primarily to Salawati Island at Kapatlap, Samate, Kalobo, Mariat, and Yeflio. In the past, they were taken by canoe as far as Misool Island (Kapacol, Geinta, Biga, Fafanlap, and Lilinta villages) in the south, and Seget near Sorong on New Guinea. Up to fifty *forno* could be stacked in each canoe due to substantial demand.

Use, reuse, and discard

The finished vessels are used to bake sago cakes. An *ambar* (bamboo cut in half with a small opening running parallel to the length) is used to funnel sago flour into the oven and about five litres of flour will fill one large *forno*. Then, banana leaves are placed over the oven to form a seal, and

Figure 5. Sago oven clay procurement and initial forming stages at Arefi.

kos (re-used broken *forno* sherds) are placed on top as a lid, before putting it on the fire. There are a substantial number of ways in which the flour can be produced, mixed, and processed (Ellen and Goward 1984), however an in depth study of cooking techniques was not completed at Arefi (but see Arnold 2017 for a record of *forno* users on nearby Waigeo Island).

Figure 6. Assembly, drying and firing stages of sago oven production at Arefi.

Along with the reuse of broken *forno* for lids, clay from the production process is rarely wasted. Dry clay offcuts are stored in a metal barrel next to the potters' shed for re-use. This clay can be left for years and then remixed with water without noticeable technical differences. To do this, the clay lumps are wrapped in wet cloth and water is poured over them. These are left to absorb the water for one week and become a suitable paste.

DISCUSSION

The modern situation

In the past, pottery making provided an income for many more potters, but most have now ceased production due to lack of consumer demand. The recent mass introduction of rice has resulted in sago taking on secondary importance in a number of areas. As such, sago ovens are no longer as common as they were even one generation ago. However, people will still use sago flour as a back-up crop (as it was used historically in some parts of New Guinea, when supplementing the seasonal sweet potato, yam, and taro).

The fact that *forno,* now the only type of earthenware ceramic produced in Raja Ampat, have outlasted globular cooking pots relates to their function. Whereas metal and plastic containers have completely replaced ceramic cooking pots and storage vessels, *forno* continue to be the best-suited utensil for baking sago flour. Spriggs and Miller (1979) noted a similar situation while at Hutumuri on Ambon. However, as only four older potters at Arefi still occasionally make *forno*, and younger women are not interested in learning, this tradition is at risk of being forgotten in the near future, as it is in many parts of New Guinea and Island Southeast Asia.

At Kabilol village, pot production is beginning to be incorporated into a locally run trekking tour of Mayalibit Bay, promoting the on-going manufacture of *forno*. However, tourists visiting Batanta are not aware of pottery manufacture. Given Raja Ampat's increasing appeal as an ecotourism and diving destination, there is scope to incorporate Arefi and Yensawai pottery making into locally run tours from nearby homestays. Outside tourism has been successful in helping to maintain pottery traditions in other parts of New Guinea (Gaffney 2018), providing a new influx of demand, and bringing the economic and cultural heritage values of these living traditions to the attention of local governments.

Historical implications

The study of Arefi manufacture already has some preliminary implications for pre-colonial technology and society in western New Guinea. For instance, the use of paddles in the forming process might suggest that manufacture at Arefi was adapted into a local, pre-existing paddle and anvil industry. Some sago ovens from New Guinea around Geelvink Bay are even semi-hemispherical in shape, probably produced using paddle and anvil or coiling with the later addition of slabs forming interior walls (see Ellen and Latinis 2012).

The Arefi *forno* production method fits within one of two major technical traditions, whereby the walls are prebuilt and then assembled (see Spriggs and Miller 1979). The other tradition sees potters start with a lump of clay that is then cut away from. These two methods can be described as the 'assembly' method and the 'reductive' method (cf. Ellen's 'construction' and 'excavation' methods). Importantly, although historical connections with Tidore would imply the transfer of technology from the Halmahera area to Batanta, the Mare potters, just south of Tidore produce sago ovens by a unique reductive method followed by paddling (Petrequin and Petrequin 2006: 354), while Arefi potting has more in common with ovens from central Maluku, where similar assembly methods are used amongst the Keligah in east Seram (Ellen and Latinis 2012), and the Amahusu and Larike on Ambon (Spriggs and Miller 1979). This may indicate a route of introduction through central Maluku and Misool into the northern Raja Ampat Islands.

Spriggs and Miller (1979) originally suggested that in Maluku, these technical traditions map exactly onto religious affiliation, with Muslim communities producing the assembly method and Christian groups following the reductive method. This does not hold true in Arefi who are Christian (as most Biak speakers are), with the first bible being introduced within the last century, with people previously practicing animism and ancestor worship (Corbey 2017; van Baaren 1968). Ellen and Latinis (2012) also find no correlation with their enhanced Maluku dataset.

Nonetheless, these two methods should leave identifiable attributes on archaeological sherds, with *forno* built using the assembly method fracturing along their joins (e.g. sherds deriving from Hatusua, Seram Island, illustrated in Ellen and Latinis 2012: Fig. 14), but those of the reductive method fracturing in an irregular fashion (e.g. sherds from Tomu site, Ambon Island, in Ellen and Latinis 2012: Fig. 14). Future excavations around Raja Ampat, especially at the Yembakai hill fort close to Arefi, should reveal stratified *forno* sherds, which can be assigned to one of the two methods, implying direct technological connections with present-day manufacture, or alternatively an earlier introduction of distinct technological practices.

Future recording of production at Kabilol and Yensawai villages would also provide a more detailed ethnographic map of pottery making in Raja Ampat. As yet we know nothing about this manufacture, how it articulates with similar traditions in Maluku, and the antiquity of these technological traditions. Comparisons between Arefi and the Kabilol *forno*-making method in Mayalibit Bay (along with geochemical assignment to ethnographic clay source zones), will allow archaeological sherds to be assigned to a specific local tradition (Waigeo or Batanta). Comparisons with Maluku sherd attributes will also reveal something about the shared origin of the ceramic form, and specific manufacturing methods. This would go someway towards shedding light on the emergence of sago flour processing as part of the long-term story of forest exploitation throughout Holocene Oceania.

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References

Amri, C., Harahap, B.H., Pieters, P.E. & Bladon, G.M. 1990. *Geology of the Sorong Sheet area, Irian Jaya*. Bandung: Geological Research and Development Centre.

Arnold, L. 2017. AM069: Making sago biscuits (video recording at Kapadiri village with Yosina Olom and Manase Gaman). In: *The Documentation of Ambel, an Austronesian Language of Eastern Indonesia*. London: SOAS University of London, Endangered Languages Archive. URL: http://elar.soas.ac.uk/deposit/0377.

Barker, G., Barton, H., Bird, M., Daly, P., Datan, I., Dykes, A., Farr, L., Gilbertson, D., Harrisson, B., Hunt, C. & Higham, T. 2007. The 'human revolution' in lowland tropical Southeast Asia: the antiquity and behavior of anatomically modern humans at Niah Cave (Sarawak, Borneo). *Journal of Human Evolution*, 52(3): 243–261.

Barton, H. & Denham, T. 2018. Vegecultures and the social–biological transformations of plants and people. *Quaternary international*, 489: 17–25.

Corbey, R. 2017. *Raja Ampat Ritual Art: Spirit priests and ancestor cults in New Guinea's far west*. Leiden: C. Zwartenkot Art Books.

Ellen, R.F. & Glover, I.C. 1974. Pottery manufacture and trade in the Central Moluccas, Indonesia: the modern situation and the historical implications. *Man*, 9(3): 353–379.

Ellen, R. & Latinis, D.K. 2012. Ceramic sago ovens and the history of regional trading patterns in eastern Indonesia and the Papuan coast. *Indonesia and the Malay World*, 40(116): 20–38.

Ellen, R.F. & Goward, N.J. 1984. Papeda dingin, papeda dingin... Notes on the culinary uses of palm sago in the central Moluccas. *Petits Propos Culinaires*, 16: 28–34.

Fairyo, K. 2009. Gerabah situs mansinam kajian etnoarkeologi. *Papua* 1(2): 93–99.

Forrest, T. 1779 [1969]. A voyage to New Guinea and the Moluccas, 1774–1776. Oxford: Oxford University Press.

Gaffney, D. 2018. Maintenance and Mutability amongst Specialist Potters on the Northeast Coast of New Guinea. *Cambridge Archaeological Journal*, 28(2): 181–204.

Galis, K.W., & Kamma, F.C. 1958. Het fort te Jembekaki. *Nieuw-Guinea Studien*, 2: 206–277.

Galvao, A. 1544 [1971]. *A treatise on the Moluccas (c.1544), probably the preliminary version of Antonio Galvao's lost Historia das Moluccas.* Rome: Jesuit Historical Institute.

Kamma, F.C. & Kooijman, S. 1973. *Romawa Forja, Child of the Fire: Iron Working and the Role of Iron in West New Guinea (West Irian).* Leiden: Brill.

Latinis, D.K. 2002. Protohistoric Archaeology and Settlement in Central Maluku, Eastern Indonesia. PhD thesis, Archaeology, National University of Singapore.

Maryone, R. 2010. Migrasi orang Biak ke Pulau Batanta, Kampung Arefi, Kabupaten Raja Ampat. *Papua*, 2(2): 75–84.

Pétrequin, A.M. & Pétrequin, P. 2006. *Objets de pouvoir en Nouvelle-Guinée*. Paris: Éditions de la Réunion des Musées Nationaux.

Spriggs, M. & Miller, D. 1979. Ambon-Lease: A study of contemporary pottery making and its archaeological relevance. In: M. Millet (ed.), Pottery and the Archaeologist. London: University College London Institute of Archaeology. pp. 25–34.

Van Baaren, T.P. 1968. *Korwars and Korwar Style*. The Hague: Mouton.

Veth, P., Spriggs, M., O'Connor, S. & Saleh, A.D. 2005. Wangil Midden: A late prehistoric site, with remarks on ethnographic pottery making. In: S. O'Connor, M. Spriggs, P. Veth (eds.), *The Archaeology of the Aru Islands, Eastern Indonesia. Terra Australis 22.* Canberra: Pandanus Books. pp. 95–124.

Wallace, Alfred R. 1869. *The Malay Archipelago*. London: MacMillan and Co.