



## A Community Bioarchaeology Project in the Flinders Group, Queensland, Australia

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### ABSTRACT

Bioarchaeological research in Australia has lagged behind that in other regions due to understandable concerns arising from the disregard of Indigenous Australians rights over their ancestors' remains. To improve this situation, bioarchaeologists working in Australia need to employ more community-oriented approaches to research. This paper reports a project in which we employed such an approach. The project focused on burials in the Flinders Group, Queensland. Traditional Owners played a key role in the excavations and helped devise analyses that would deliver both scientific contributions and socially relevant outcomes. The fieldwork and laboratory analyses yielded a number of interesting results. Most significantly, they revealed that the pattern of mortuary practices recorded by ethnographers in the region in the early

20th century—complex burial of powerful people and simple interment of less important individuals—has a time depth of several hundred years or more. More generally, the project shows that there can be fruitful collaboration between archaeologists and Indigenous communities in relation to the excavation and scientific analysis of Aboriginal ancestral remains.

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Resumen: La investigación bioarqueológica en Australia se ha quedado a la zaga de la de otras regiones debido a preocupaciones comprensibles que surgen del desprecio a los derechos de los indígenas australianos sobre los restos de sus antepasados. Para mejorar esta situación, los bioarqueólogos que trabajan en Australia deben emplear enfoques de investigación más orientados a la comunidad. Este documento informa sobre un proyecto en el que empleamos este enfoque. El proyecto se centró en los entierros en Flinders Group, Queensland. Los propietarios tradicionales jugaron un papel clave en las excavaciones y ayudaron a diseñar análisis que entregarían contribuciones científicas y resultados socialmente relevantes. El trabajo de campo y los análisis de laboratorio arrojaron una serie de resultados interesantes. Más significativamente, revelaron que el patrón de prácticas mortuorias registradas por etnógrafos en la región a principios del siglo XX —entierro complejo de personas poderosas y simple entierro de individuos menos importantes— tiene una profundidad temporal de varios cientos de años o más. En términos más generales, el proyecto muestra que puede haber una fructífera colaboración entre arqueólogos y comunidades indígenas en relación con la excavación y el análisis científico de restos ancestrales aborígenes.

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Résumé: La recherche bioarchéologique en Australie a pris du retard par rapport aux autres régions en raison d'inquiétudes compréhensibles ayant découlé du peu d'égards accordées aux droits des indigènes australiens sur les restes de leurs ancêtres. Les bioarchéologues qui travaillent en Australie ont besoin pour améliorer cette situation d'adopter des approches de recherche qui soient plus centrées sur la communauté. Cet article présente un projet pour lequel nous avons recouru à une telle approche. Le projet s'est consacré aux tombes se trouvant dans le Flinders Group, Queensland. Les propriétaires traditionnels ont joué un rôle essentiel dans les fouilles et ils ont apporté une aide pour la conception d'analyses ayant résulté en des contributions scientifiques mais ayant aussi eu des conséquences socialement pertinentes. Le travail de terrain et les analyses en laboratoire ont produit plusieurs résultats intéressants. Ils ont révélé plus particulièrement que le modèle des pratiques mortuaires consigné par les ethnographes dans la région au début du 20<sup>ème</sup> siècle, à savoir enterrement complexe des personnes de pouvoir et simple enterrement pour les individus moins importants, a une profondeur temporelle de plusieurs centaines d'années sinon plus. De manière plus générale, le projet

démontre qu'il peut exister une collaboration fructueuse entre les archéologues et les communautés indigènes pour ce qui relève des fouilles et de l'analyse scientifique des restes ancestraux aborigènes.

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#### KEY WORDS

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Community archaeology, Bioarchaeology, Indigenous archaeology, Mortuary archaeology, Aboriginal Australians, Burial

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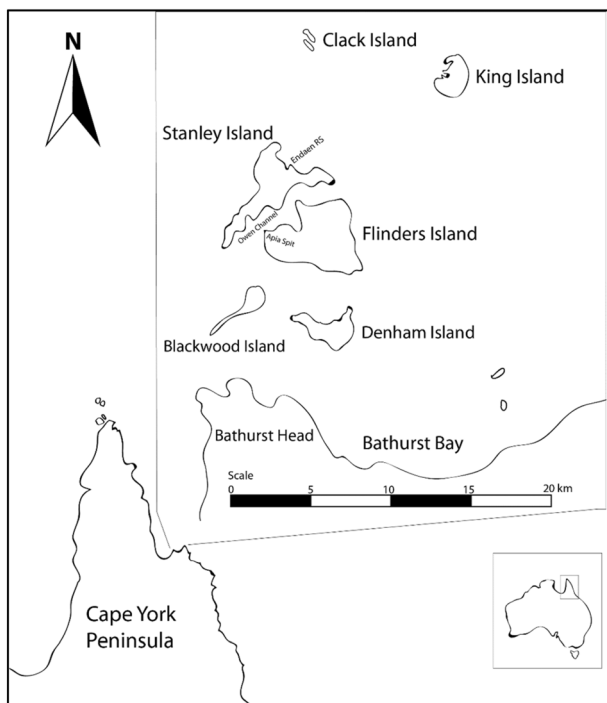
In 2015 we invited Griffith University to come with us to Flinders Island to help conserve a burial we found eroding from the beach. The islands are jointly managed with Queensland National Parks who provided all the resources to get to the islands and helped complete the work. This was the beginning of a partnership with Griffith and we have since completed fieldwork documenting and conserving other burials discussed in this paper. Fieldwork has meant we can take the younger generation back to the islands and get them involved in this important work. The scientific work on the burials shows how long we cared for the cave burials and I hope that by including images of the bundles it might gather interest in conserving them and lead to the return of some of the many that have been stolen. I am happy that this research has taken place and hopefully it will continue into the future.

Clarence Flinders, Traditional Owner and Elder of the Flinders Island Group, 2016.

## Introduction

This paper reports a study that focused on traditional burials in the Flinders Group, which is located just off the east coast of Cape York, tropical north Queensland, Australia (Figure 1). The study was part of an Australian Research Council-funded project that aimed to shed light on the Indigenous history of Cape York and sought to improve methods for repatriating unprovenanced remains of Indigenous Australians (Collard et al. 2020).

As the epigraph explains, in 2015 members of the project team assisted with the rescue excavation of two eroding beach burials. Excavation and reburial was undertaken by Traditional Owners with archaeologists recording the burials, analysing the remains, and taking samples for dating, ancient DNA (aDNA) extraction, and isotope analysis (Figure 2). During the fieldwork, the problem of the theft of traditional burials from local rockshelters came to light and it was decided that further fieldwork on



**Figure 1.** Location of the Flinders Group, Queensland, Australia

Flinders Island and Stanley Island should be carried out to record the remaining burials and create a baseline for monitoring purposes. The results of this additional fieldwork, which occurred in 2016, are also reported here.

Because both field visits were carried out under tight time constraints, they had some important limitations. Nevertheless, the data they yielded are important, especially with regard to understanding mortuary practices in Cape York prior to European colonisation. In addition, we think the project represents a potentially useful model for future research on ancient human remains in Australia, with its combination of close collaboration between scientists and Traditional Owners, Traditional Owner-led excavation, in-field osteoarchaeological analyses, and minimally destructive sampling for laboratory analysis.

Bioarchaeological research in Australia has lagged behind that in other countries due to understandable concerns arising from the disregard of Indigenous Australians' rights over their ancestors' remains for over 200 years. The lag concerns not only analytical techniques, but also the manner in which research is conducted. With regard to the latter, over the



**Figure 2.** Photographs of the fieldwork. Left: traditional owners re-excavating burial FI1. Right: traditional Owners carrying out the reburial of SI1

last 20 years researchers in other countries have begun to explore new ways of engaging with descendant communities and other stakeholders in relation to the excavation and analysis of ancestral remains (e.g. Blakey 2010; O'Donnabhain and Lozada 2014, 2018; Lambert and Walker 2018). Australian bioarchaeologists, in contrast, have generally continued to operate in the traditional manner. It is our hope that the project reported here will prompt discussion about new ways in which research on ancient human remains in Australia can be done.

The present paper is structured as follows. We begin with a background section in which we outline the environment and history of the Flinders Group and summarise what is known about Aboriginal mortuary practices in the region in the historic period. Next, we describe the burials. Thereafter, we report our osteoarchaeological analyses of the skeletons and the radiocarbon dates we obtained for them. In the final section, we compare the data for the burials to each other and to what is known about mortuary practices in the historic period. We also compare our palaeopathological data to those that have been recorded for other skeletal samples from tropical Australia. Lastly, we outline some actions that we think would help protect the Flinders Group's mortuary record.

## Background

### Brief Overview of the Environment and History of the Flinders Group

Seven islands form the Flinders Group—Flinders (Wurriima), Stanley (Muyu Mali), Blackwood (Wakayi), Maclear, Denham (Inggal Odul), King, and Clack (Ngurromo). The islands are located in Princess Charlotte Bay, which is approximately 340 km northwest of the city of Cairns. They are



**Figure 3.** APA spit on flinders island

part of the Great Barrier Reef Marine Park and lie on the western side of the Coral Sea.

The Flinders Group are continental in origin and consist of Jurassic–Cretaceous Dalrymple Sandstone and Gilbert River Formation Sandstone. They feature rugged escarpments and sand dunes which are covered by mixed heath woodland, grassland, and vine thickets (Figure 3). While the only terrestrial animals are monitor lizards and snakes, the islands are home to many bird species. Fringing reef surrounds the islands and supports a wide range of fish species, as well as dugong and turtles. The climate of the islands is tropical, with monsoonal rains from November to April and frequent cyclones.

Oral history indicates that the islands were first occupied by groups known collectively as the *Aba Wurriya*—“*Aba*” means “people”, while “*Wurri-ya*” is the Indigenous name for the islands (Peter Sutton pers. comm 2018). Ethnographic reports indicate that the *Aba Wurriya* moved seasonally between the islands and the mainland, subsisting on marine resources, macropods, lizards, birds, and frogs, as well as vegetable foods like yam and pandanus nut (Hale and Tindale 1934). The islands were regularly visited by groups from over 50 km to the west and south of the islands (Sutton et al. 1993).

Beaton’s (1985) excavations at the *Yindaen* (previously “*Endean*”) Rockshelter on Stanley Island led him to conclude that the Flinders Group were first occupied around 2200 years ago. This hypothesis is widely accepted, but recent fieldwork at the same site indicates that the islands have actually been occupied since at least 6280 calBP (Collard et al. 2020).

McNiven (2006) have argued that over the last 3000 years the Coral Sea has been an “interaction sphere” involving cultural diffusion and gene flow between Indigenous Australians and Melanésians from the Torres Strait Islands and New Guinea. One of the lines of evidence that supports this hypothesis is the use of outrigger canoes by some Indigenous groups in Cape York in the historic period. The Aba Wurriya were one of these groups (Moore 1978). Thus, there is reason to think that they have been part of a social network extending to New Guinea, for several 1000 years.

The islands were an early point of contact between Indigenous Australians and Europeans. The first recorded meeting of the Aba Wurriya and the British took place in 1821, during Captain Philip King’s survey of Australia’s east coast (King 1827). Subsequently, the islands became an important anchorage for ships travelling between Sydney and Asia, before becoming a centre for the pearling trade. These developments impacted the Aba Wurriya’s way of life. In the late 1890s, the first Northern Protector of Aborigines, Walter Roth, photographed 84 of the islands’ Indigenous inhabitants (Roth 1898). By 1935, the number of Aba Wurriya on the islands had dropped to nine (Sutton 2005). In the 1930s and 1940s, the last Aba Wurriya were removed to Hopevale and Palm Island, where their descendants still live (Sutton 2005).

### **Aboriginal Mortuary Practices in the Flinders Group in the Ethnohistoric Period**

Prior to European contact the mortuary practices of Indigenous Australians were highly variable. They included burial, desiccation, cremation, crushing, dismemberment, placement in trees, and disposal in water (Meehan 1971). Meehan (1971) divided the practices into three categories—simple, compound, and pseudo-compound. Simple practices involved only a few steps. The corpse was disposed of intact, shortly after death, with little ceremony. Compound burials involved multiple procedures that were carried out at different times. Pseudo-compound burials also involved several procedures, but they were conducted at the time of disposal rather than at different times.

Compound mortuary practices feature prominently in the ethnographic record of Cape York. Roth (1907) noted that when certain people died, the community excavated a grave over which a platform of logs was raised. The deceased was buried, and the community camped around the grave. After several days, the bones were exhumed, defleshed and placed in a bark coffin. Similarly, Hale and Tindale (1934) recorded defleshing via burial or exposure before transferal of the skeletal remains to a bark coffin. The coffins were typically made from termite and fire-resistant bark rolled into a

cylinder ca. 0.8–1.4 m long (Hale and Tindale 1934). The bones were placed on a pad of grass, and the cylinder was tied at the ends with string made from human hair, animal fur, sinew, skin, or plant fibre (Hale and Tindale 1934).

Roth (1907) reported that the people of Cape York believed that the spirits of the dead could harm the living, and that an individual's character governed their actions in the afterlife. These beliefs affected mortuary practices. The death of a powerful person was often avenged, and their remains were carried for some time before being secreted or used to promote earthly success (hunting for example). In contrast, “[t]he spirits of women, children, infirm and invalid old men, whom during life, the survivors had no reason to fear, need not be bothered about in the way of ceremonial to the same extent as is considered necessary with the more virile of the men” (Roth 1907: 366). That mortuary practices varied depending on the perceived threat of the deceased's spirit was confirmed by Hale and Tindale (1934).

## The Burials

During our field visits, we excavated two beach burials and surveyed five rockshelters. Two of the rockshelters contained human remains and bark coffin fragments. The other three had been looted of all visible surface remains. In total, we recorded five burials, which we will refer to as FI1, FI2, SI1, B2, and B3 (Table 1). FI1 and FI2 were beach burials, while SI1, B2, and B3 are rockshelter interments.

FI1 was located in the part of Flinders Island known as Apa Spit or Wathirrana (Figure 2; Sutton et al. 1993). The spit consists of coarse silica sands with abundant midden, artefacts, and charcoal. FI1 was originally excavated in 2015 by Traditional Owners and the Queensland police, who decided that it was a traditional burial. Upon re-excavation, the individual was found at a depth of 1.2 m in a loose, beige, shell-grit/sand foredune matrix with abundant charcoal. Based on the bones' placement, we concluded that the grave was oval (ca. 0.2–1.5 m long and 0.8 m wide) with a concave base. The individual was orientated north-east with their face directed to the east. The individual was interred on their back with their legs partially flexed, hands placed palm down on their thighs, and their feet crossed (Figure 4). In the initial excavation, a large (ca. 40 cm diameter) rock was found on FI1's chest. No other grave goods were recovered.

SI1 was discovered eroding from foredune sands on Stanley Island in 2015 by a group of fishermen and was then investigated by police. Located in a flat, sandy cove surrounded by boulders and scrub, the burial was dug into coarse beige silica sands. Wind and tidal action had eroded the mar-



**Table 1** Summary of burials

Burial	Type	Ethnicity	Sex	Age	Pathologies
F11	Beach interment	Indigenous Australian	Male (confirmed with aDNA by Wasef et al. 2020)	Middle adult	Periodontal disease; periapical lesion; anthesopathy on right humerus
S11	Beach interment	Indigenous Australian	Female (confirmed with aDNA by Wright et al. 2018; Wasef et al. 2020)	Young adult	Dental enamel hypoplasia; periodontal disease; osteoarthritis in neck and shoulder
F12	Bundle burial in rockshelter	Indigenous Australian	Male (confirmed with aDNA by Wright et al. 2018; Wasef et al. 2020)	Young adult	Periosteal lesion on left femora
B2	Bundle burial in rockshelter	Indigenous Australian	Male (confirmed with aDNA by Wasef et al. 2020)	Young adult	Cribriform orbitalia; calculus; periodontal disease
B3	Bundle burial in rockshelter	Indigenous Australian	Female (confirmed with aDNA by Wasef et al. 2020)	Young adult	Dental enamel hypoplasia; periodontal disease with alveolar resorption; possible evidence of sepsis on ilium

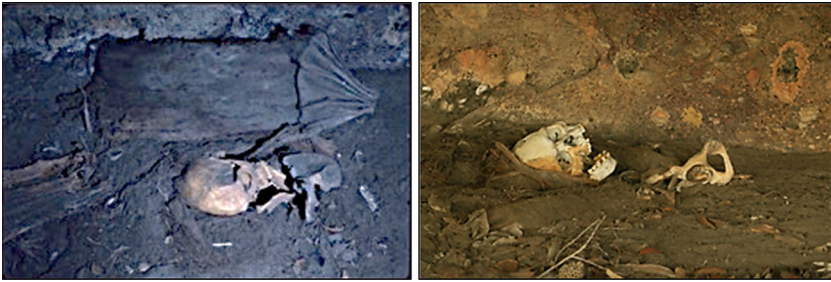
See text for details of standards used to establish ethnicity, sex, age, and pathologies



**Figure 4.** Beach burial F11 in situ

gins of the area in which the burial was located. Pitting on the cranium was consistent with prolonged exposure, and the lower portions of the skeleton had been removed by tidal activity. The alignment of the remaining elements suggested that the body had been oriented towards the south-east when buried. No grave goods were recovered.

The rockshelter in which F12 was found is located close to the beach on the east coast of Flinders Island. It faces east and is ca. 10 m wide and 2 m deep. The floor slopes towards the entrance, which is ca. 1 m high. A survey in the 1980s recorded two sets of remains; photographs indicate they were bound in bark (Walsh 1985). Only one set of remains was found during our inspection, which was partially covered due to roof fall. The individual's cranium was exposed, but other skeletal elements were partially buried and we did not disturb them. No grave goods were identified.



**Figure 5.** Photographs of rockshelter interment B2. Left: 1980s (Walsh 1985). Right: 2016



**Figure 6.** Photographs of rockshelter interment B3. Left: 1980s (Walsh 1985). Right: 2016

The rockshelter containing B2 and B3 is also on Flinders Island. It faces north-west and is ca. 30 m long, 6 m deep, and 1.5 m high. The rockshelter was previously surveyed by Walsh (1985), who recorded six bundle burials. Horsfall (1991) later reported that four of the burials had been removed. Subsequently, a steel-mesh barrier was constructed along the drip line to stop further disturbance. We confirmed that only two burials remained; these corresponded to Walsh's (1985) Burial 2 and Burial 3—hence the codes B2 and B3. B2's bark cylinder had been stolen or decayed in the 30 years since Walsh's (1985) survey (Figure 5). B3 had been opened but retained fine twine that likely bound the postcranial skeletal elements (Figure 6). The bark from the other burials recorded by Walsh (1985) remained in situ or nearby, with the exception of Burial 6 which was not represented by bones or bark. Two isolated femora and a calcaneus were found three metres from the rockshelter's back wall. We suspected these were associated with Walsh's (1985) Burial 4 but could not be certain and therefore did not analyse them. No grave goods were located.

## Osteoarchaeological Analyses

The osteoarchaeological analyses were completed in the field to facilitate rapid reburial of the remains. Because we were operating under strict time constraints, we concentrated on assessing the sex, age, ancestry, and pathologies of the remains using qualitative observations; we did not record any measurements. We used the standards outlined by Phenice (1969), Larnach and Macintosh (1970), Brothwell (1981), Madewell et al. (1981), White and Folkens (1991), Buikstra and Ubelaker (1994), Moore-Jansen et al. (1994), and Donlon et al. (2002). When ageing the specimens, we employed the broad categories recommended by Buikstra and Ubelaker (1994): young adult (20–35 years), middle adult (35–50), and old adult (50+). All the assessments were carried out by a single investigator (MCW). The results of osteoarchaeological analyses are summarised in Table 1.

F11 was complete, articulated, and in a good state of preservation (Figure 6). Based on the dolichocephalic nature of the cranial vault, vault gabling, pronounced supraciliary ridge, square orbits, mid-facial prognathism, and pronounced cheekbones, the individual was deemed to be an Indigenous Australian. Pelvic traits indicated that the individual was male, while the degree of occlusal wear, epiphyseal fusion, and suture closure suggested that he was middle adult at the time of death. F11's right I<sup>1</sup> was removed earlier in life, and extreme occlusal wear was observed on all remaining teeth. In addition, the roots of the lower molars were no longer supported by the mandibular alveolar bone, indicating that he suffered from advanced periodontal disease. On the left femur, we identified an unhealed periapical lesion that met the criteria for an abscess. An enthesopathy was present on the right humerus, suggesting that F11 had engaged in heavy use of his right arm.

SI1 preserved the cranium and mandible, left humerus, left and right clavicles, left and right scapulae, nine individual ribs from either side of the body, and 14 cervical and thoracic vertebrae, and the proximal portions of both femora. Lightly built supraciliary ridges, relatively high frontal, small mastoid processes, and weakly developed nuchal crest all suggested that SI1 was a female Indigenous Australian. This assessment was subsequently confirmed by aDNA analysis (Wright et al. 2018; Wasef et al. 2020). We estimated her to be a young adult based on epiphyseal fusion, cranial suture closure, and degree of occlusal wear, particularly the absence of wear on the M3s. SI1 had a generally gracile skeleton, but there were indications of robust musculature in the shoulder girdle. Dental enamel hypoplasia (DEH) was identified on some teeth, and it was clear that she

suffered from periodontal disease. Despite S1's youth, osteoarthritis was apparent in her cervical vertebrae and glenoid fossae.

FI2 comprised a cranium and what seemed to be a largely intact postcranial skeleton. The postcranial elements we were able to inspect were the pelvis, left femur and tibia, left humerus and radius, three ribs, phalanges, and four lumbar vertebrae. Cranial traits such as elongated overall shape, gabled vault, strong phenozygy, mid-facial prognathism, and prominent cheek bones suggested that the individual was an Indigenous Australian. The pelvis had a narrow greater sciatic notch, a subpubic concavity with a convex inferior border, and a ventral arc with a slight ridge, all of which suggested he was male. A well-developed superciliary ridge, large mastoid processes, and well-developed muscle attachment areas on the occipital also suggested that FI2 was male. That FI2 was Aboriginal and male was subsequently confirmed by aDNA analysis (Wright et al. 2018). The degree of epiphyseal fusion, suture closure, and occlusal wear indicated that he was a young adult. There was an absence of dental or periodontal disease, but we did identify periosteal lesions in the form of woven bone on the medial left femur, suggesting that FI2 may have suffered from a chronic infection.

Analysis of B2 was limited to the cranium because the postcranial elements were buried and disturbing them was not within the remit of the fieldwork (Figure 5). B2 was determined to be an Aboriginal male based on several characters, including elongated skull shape, gabled vault, strong



**Figure 7.** Cribra orbitalia in B2

phenozygy, mid-facial prognathism, and prominent cheek bones. Despite having diminutive dimensions, the pelvis displayed strong muscle attachments, which is consistent with B2 being a male. B2 was estimated to be a young adult on the basis of epiphyseal fusion, suture closure, and occlusal wear. B2 exhibited bilateral cribra orbitalia (Figure 9), a lesion that is thought to be indicative of anaemia, infection, or stress. B2's left I<sup>1</sup> was avulsed and the associated bone fully resorbed. Calculus accumulations and evidence for periodontal disease were present, particularly in the posterior dentition (Figure 7).

B3 was not excavated, but consisted of a largely intact skeleton; just the hands and feet appeared to be missing (Figure 6). The elongated cranial vault, square orbits, pronounced cheek bones, and projecting zygomatic arches indicated that the individual was likely an Indigenous Australian. B3 was identified as female based on cranial and pelvic traits. In view of the limited amount of occlusal wear on the M3s, B3 was determined to be a young adult. This assessment was supported by the degree of epiphyseal fusion, the extent of closure of the cranial sutures, the incomplete fusion of S1–S2, and the recent ossification of the spheno-occipital synchondrosis. DEH was present on B3's anterior teeth and upper second molars. She also exhibited periodontal disease, with alveolar resorption associated with the left I<sup>1</sup>. In addition, the ilia had pitting that is consistent with sepsis.

## Radiocarbon Dating

Direct AMS radiocarbon dating of bone collagen was carried out at the Research School of Earth Sciences, Australian National University. Phalanges from FI1, FI2, B2, and B3, and a rib from SI1 were sampled. Collagen was extracted using ultrafiltration, and then acid and alkali were used to remove exogenous carbonates and humics. The samples were gelatinised before being filtered. Ultrafiltration specific background was subtracted, based on measurements of samples of <sup>14</sup>C-free CO<sub>2</sub>.

We calibrated the dates with OxCal 4.2 (Bronk Ramsey 2009). Because a portion of the individuals' diets was likely of marine origin, we used a marine reservoir correction. The amount of marine input was difficult to estimate due to the abundance of C4 vegetation in the region, which has resulted in overlapping  $\delta^{13}\text{C}$  values for terrestrial animal species and near-shore marine food resources (compare, e.g. Murphy and Bowman 2007; Herrscher et al. 2018). Given this, a conservative value of  $20 \pm 5\%$  was assumed for the marine input. We used the Southern Hemisphere calibration curve SHCal13 (Hogg et al. 2013) and combined it with the Marine13 curve (Reimer et al. 2013) utilising a  $\Delta R$  offset of 52 with an SD of 63,



**Table 2** Radiocarbon dates for the burials

Burial	Lab ID	Uncalibrated 14C age (BP)	Marine-corrected calibrated range (cal BP)	Calibrated range of year of death (CE)
FI1	15,127	325 ± 25	316–148	1589–1802
FI2	16,861	435 ± 22	460–310	1490–1640
SI1	15,128	375 ± 25	445–276	1505–1674
B2	16,862	308 ± 20	303–147	1647–1804
B3	16,863	449 ± 20	473–317	1477–1633

See text for calibration details

based on a weighted mean from the nearest five reservoirs in the CHRONO Marine Reservoir Database (Rhodes et al. 1980).

Based on the calibrated dates, the oldest individual, B3, died between 1477 and 1633 CE, while the youngest, B2, died between 1647 and 1804 CE (Table 2). The calibrated dates for the other three individuals overlap one or both of these ranges. As we explained earlier, the first recorded meeting of the *Aba Wurriya* and the British occurred in 1821. Thus, the radiocarbon dates indicate that all five individuals died prior to the European colonisation of Australia.

## Discussion

### Mortuary Practice Variability

As we explained earlier, in the historic period burial practices in Cape York varied according to the perceived level of threat posed by the spirit of the deceased. Powerful people usually received what Meehan (1971) called a compound burial. Their remains were carried from camp to camp and defleshed before being placed in a bark coffin and interred. In contrast, less esteemed individuals were typically given a simple burial. They were interred with little ceremony, close to the site of death.

Both of these mortuary treatments are represented among the five burials reported here. B2, B3, and FI2 were afforded compound mortuary treatment. Their skeletons were defleshed, wrapped in bark, and then deposited in bark bundles in painted rockshelters. The mortuary treatment of FI1 and SI1, on the other hand, was simple. They were buried intact in shallow graves dug into beach sand within a short time of death.

It is interesting to compare B3 and SI1. They were both young females but were treated differently after death. B3 was given a compound burial, while SI1 received a simple one. Both exhibited periodontal disease and

DEH, but there is a difference with regard to osteoarthritis, which is thought to be caused by repetitive labour. SI1 exhibited a substantial amount of osteoarthritis, while B3 did not. This may indicate that SI1 was a less influential individual than B3. Another possibility is that their differing mortuary treatments and pathologies indicate that they came from separate communities, with B3 perhaps having been a resident of the islands and SI1 a visitor.

Staying with B3, it is worth noting that the fact that she was accorded a compound burial is inconsistent with Roth's (1907) ethnography. To reiterate, he reported that "[t]he spirits of women, children, infirm and invalid old men, whom during life, the survivors had no reason to fear, need not be bothered about in the way of ceremonial to the same extent as is considered necessary with the more virile of the men" (Roth 1907: 366). Presumably what this indicates is that Roth's informants neglected to mention to him that some women were perceived to be powerful and therefore feared in death.

The other burials consist of two males in the young adult age range, FI2 and B2, and an older male, FI1. The younger males were both given a compound burial and secreted in a rockshelter, which suggests that they were considered to be powerful people in life. The burial of FI1 was strikingly different. He was buried in beach sands shortly after death and had a large rock placed on his torso. The fact that FI1 was buried quickly on the beach is consistent with him having been viewed as unimportant, but the rock on his torso complicates the picture. This is a rare funerary practice in Australia (Meehan 1971), so it is difficult to be confident about its meaning. However, an interesting hypothesis was proposed by Traditional Owner Danny Gordon at the time of re-excavation. He suggested that FI1 may have been an "un-liked man" and that the rock meant that the community did not want him to come back. This raises a question—if FI1 was feared, why was he not given a compound burial? Was he perhaps a visitor to the islands?

### **The Health Status of the Flinders Group Sample in Comparative Perspective**

Webb (1995) provides the only assessment of pre-contact Aboriginal health with which we can compare our sample. Both of the females reported here, SI1 and B3, had DEH, which is an indicator of stress during dental development. In contrast, none of the males exhibited DEH. This pattern of a higher incidence in females compared to males is the opposite of what Webb (1995) found in his tropical sample. An implication of this is that



we need to expand the palaeopathological dataset for Australia to better understand Aboriginal health prior to European colonisation.

We found no evidence of the Flinders Group individuals having suffered from infectious diseases. While there is some debate that there may have been yaws in Cape York prior to the arrival of Europeans (Taylor 1977), we see no indicators of this disease in the present sample. This is consistent with Webb's (1995) conclusion that treponemal disease was absent from Cape York in prehistory. It is possible that yaws entered tropical Australia via Macassan contact (Campbell 2002) and the absence of this infectious disease in Webb's (1995) sample and the present one may indicate that it failed to spread to Cape York.

We did not find any evidence of cranial trauma in either the males or the females in the sample from the Flinders Group. In contrast, Webb (2009) noted signs of cranial trauma in almost a quarter of females (24%) and a smaller but still significant percentage of males (6%) from tropical Australia. This difference also underscores the need to expand the palaeopathological dataset for pre-contact Australia.

### What Next for the Ancestral Remains of the Flinders Group?

The conversations between the scientific members of the team and the Traditional Owners of the Flinders Island Group identified a number of shared goals. By far the most prominent of these was a desire to document the remaining *in situ* burials on Flinders Island and Stanley Island to provide the basis for a preservation plan.

It is likely that the mortuary record of the Flinders Island Group was once far richer, and what remains today provides only a limited insight into the islands' mortuary landscape. Our fieldwork shows that complex mortuary receptacles that have been cared for and preserved for hundreds of years are still being stolen and/or rotting away. The fact that so many



**Figure 8.** Bark coffins opened and remains stolen in the 1980s from Interment Cave 1 (Walsh 1985)

**Figure 9.** A poster designed to provide an overview of the prehistory and history of the Flinders Group, and to explain the need to repatriate ancestral remains to the islands' Traditional Owners. The poster was created by Ms. Kate Moon

human remains have been stolen since initial archaeological survey in the 1980s is a point of great concern for the Traditional Owners (Figure 8). An obvious step to halt the further destruction of these burials is to prevent the public from accessing burial caves and rockshelters by adding metal grating to their entrances. Although this is not a favoured option, the techniques have halted the theft of the last remaining bundles since the 1990s.

While the protection of the last few surviving Flinders Island Group bundles burials is of paramount importance to the local community, they also feel that their ancestors should be returned to their home. Repatriation is an important issue for many Aboriginal communities and rests upon the ideas of appeasing the dead and the community's connection to country. As discussion grew, we decided that it would be best to open dialogue with the regional community about the theft of these remains. We also wanted the dialogue to be accessible to the wider audience and younger generation. Consequently, we commissioned the illustrator Kate Moon to prepare a community poster as a cartoon, in the hope that the story of the mortuary landscape of the Flinders Islands was disseminated widely and might lead to the return of the missing *Aba Wurriya* remains (Figure 9).

## Conclusion

This paper reports the results of a community bioarchaeology project that focused on five burials in the Flinders Group, Queensland. Specifically, it describes the burials, outlines the results of osteoarchaeological analyses of the remains, and gives details of the radiocarbon dates obtained for the burials.

The analyses indicate that all five individuals were Indigenous Australians who lived before the first recorded contact with Europeans in the region. Three of the individuals were adult males, while the other two were adult females. Two of the males and one of the females received complex mortuary treatment. They were defleshed, disarticulated, placed in bark coffins, and deposited in painted rockshelters. In contrast, the other two individuals were simply interred in beach sands shortly after death. This differential treatment of individuals is consistent with observations made in the region by early ethnographers, who noted that powerful people were

FOR MANY, MANY THOUSANDS OF YEARS, THE ABA WURRIYA PEOPLE CALLED THE LAND AROUND BATHURST HEAD AND THE FLINDERS ISLAND IN FAR NORTH QUEENSLAND THEIR HOME.

WHETHER YOU THINK IN CARBON TIME OR DREAMTIME... IT WAS A VERY, VERY LONG TIME.

THEIR ANCESTORS SAW THE GIANT BEASTS CALLED THE MEGAFALUNA DISAPPEAR FROM CAPE YORK.

THEY SAW THE SEAS RISE... AND FALL... AND RISE AGAIN.

THE LAST SEA RISE, STARTING 10,000 YEARS AGO, SAW THE DROWNING OF THE IMMENSE COASTAL PLAIN THAT ONCE SURROUNDED THE CONTINENT... AND THE CREATION OF THEIR ISLAND HOME.

THE ABA WURRIYA PAINTED THEIR STORIES, AND THE STORIES OF THE ANIMALS AND FISH LIVING ON AND AROUND THE ISLANDS, AND WHEN EUROPEAN SHIPS CAME.

IN 1927, THEY WERE VISITED BY AN ANTHROPOLOGIST FROM MELBOURNE.

HE CAREFULLY RECORDED THEIR STORIES AND THE IMPORTANCE OF THEIR CULTURE.

HE ALSO EXCHANGED EUROPEAN GOODS FOR CULTURAL ITEMS.

THEY PAINTED THESE TOO.

THE ANTHROPOLOGIST RECORDED HOW THEY CARED FOR THEIR DEAD. ON THE SHORE AT APA SPIT, VISITORS TO THEIR ISLANDS WHO PASSED AWAY WERE CAREFULLY AND RESPECTFULLY BURIED.

AS FOR THE ABA WURRIYA'S OWN LOVED ONES, THEY WERE CAREFULLY WRAPPED IN TWO DISTINCT LAYERS OF BARK, AND TIED TOGETHER WITH FINELY CARVED TWINE MADE FROM HISOGLU BARK.

THEY WERE RESPECTFULLY LAID TO REST IN CAVES, LOOKING OUT TO A SACRED ISLAND. THE REMAINS CONTAINED WITHIN THE BARK COFFINS WERE CARED FOR FOR OVER 5000 YEARS. IT IS PROBABLY ONE OF THE MOST BEAUTIFUL BURIAL SITES IN THE WORLD.

IN 1941 THE RAAF SET UP A HIDDEN RADAR BASE AT THE TOP OF ONE OF THE PEAKS, TO SEARCH FOR JAPANESE WARPLANE COMING TO ATTACK AUSTRALIA.

SOME YEARS LATER, AFTER THOUSANDS OF YEARS, THE LAST OF THE ABA WURRIYA LEFT THE ISLANDS TO LIVE ON THE MAINLAND.

BUT IN THE 1970S, NEW SHIPS CAME TO THE ISLANDS.

TRAWLING FLEETS USED THE SAFETY OF THE FLINDERS COVE FOR A HARBOUR, AND LARGER TENDERS MET THE FLEETS AND COLLECTED THE CATCH TO TAKE TO THE MARKETS.

EVENTUALLY, SOME OF THEM FOUND THE ANCIENT BURIAL CAVES...

AND STOLE THE BURIAL COFFINS THAT CONTAINED THE ANCESTORS OF THE ABA WURRIYA.

IT IS EVEN RUMOURED THAT ONE OF THE TRAWLER-MEN USED THE SKULL OF ONE OF THE ABA WURRIYA AS A WEIGHT ON HIS MOP TABLE.

DURING THIS TIME, MANY MEN EXPLORED THE ISLANDS.

WHEN THE ABA WURRIYA LIVING ON THE MAINLAND LEARNED OF THE THEFT OF THEIR ANCESTORS' REMAINS, THEY WERE DEVASTATED.

THEY LONGED FOR THE SAFE RETURN OF THEIR LOVED ONES, BUT HAD NO WAY OF KNOWING WHERE THEY HAD BEEN TAKEN.

...OR BY WHOM.

TODAY, ALMOST FIFTY YEARS LATER, THE ABA WURRIYA ARE WORKING CLOSELY WITH MARINE PARKS AND ARCHAEOLOGISTS TO CONSERVE THEIR ISLAND'S BEAUTIFUL CULTURE.

AND RECONNECT THEIR YOUNG PEOPLE TO THE HISTORY AND TRADITIONS OF THESE MAJESTIC ISLANDS.

THROUGH THIS COOPERATION AND COLLABORATION, THEY HOPE THAT ONE DAY THE OLD PEOPLE WHO WERE STOLEN FROM THE ISLANDS WILL BE RETURNED.

SO THEY CAN BE PUT TO REST ONCE MORE...

...AND BE AT PEACE IN THEIR RIGHTFUL HOME.

afforded complex mortuary treatment, while less powerful—the very young, old, and infirm—were interred with little ceremony. Thus, the study suggests that the ethnographically documented mortuary practices had been engaged in by the inhabitants of the region for hundreds of years, if not longer, by the time they were recorded by European scholars. The analyses reported here also suggest that the existing palaeopathological dataset for Australia for tropical Australia is inadequate for understanding the health of Indigenous Australians prior to contact and needs to be expanded.

Elsewhere in the world, bioarchaeology has been revolutionised in recent decades as a result of the development of isotope and ancient DNA analysis. These techniques have added information about the lifeways of past people that would have amazed early archaeologists. Unfortunately, bioarchaeological research in Australia has not kept pace due to understandable concerns arising from the disregard of Indigenous Australians rights over their ancestors' remains that was shown by non-Indigenous researchers, government officials, and members of the public for over 200 years. We are of the opinion that in order to change this state of affairs, bioarchaeologists working in Australia must adopt more inclusive approaches to research, and we attempted to implement one such approach in the project reported here. We believe the project can be fairly characterised as a 'win-win', with both the scientific members of the team and the Traditional Owners feeling satisfied with the outcomes of the project—as is attested by the epigraph, which was written by CF, who is one of the Flinders Group's Traditional Owners. We look forward to working together as team again to further improve understanding of the history of the islands and to conserve their cultural heritage.

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