3

Archaeology of the coastal sites on Rapa Island

Atholl Anderson

Department of Archaeology and Natural History, Research School of Pacific and Asian Studies, The Australian National University, Canberra, Australia, atholl.anderson@anu.edu.au

Introduction

Archaeological research on the coastal landscape of Rapa was confined to remains of habitation and associated resource exploitation, leaving aside various kinds of structural remains (below). The objectives were to define the Rapan archaeological sequence, but primarily its beginnings (Kennett et al. 2006), to describe the use of coastal resources, and to characterise broad variation in coastal settlement patterns. On the basis of Pacific archaeological experience generally, and according to previous archaeological and ethnographic data from Rapa, it was assumed that pertinent evidence most probably would be found close to the shore. We focused on an approximately 300 m wide coastal strip, searching for open and rockshelter locations of habitation.

It should be conceded that this strategy leaves out some coastal sites that might eventually prove significant to an understanding of the Rapan archaeological sequence. The most immediately obvious are the valley systems of taro gardens. A few are currently under cultivation, but substantial areas of them are historical and archaeological. Several particular aspects of these features were examined in the palaeoenvironmental research (Chapters 3, 10), and considered in relation to palaeodemography (Chapter 13), but there was no systematic research on the archaeology of Rapan agriculture in our project. Associated with some former gardens are sets of putative house terraces that can be ascribed to historical villages, as at Tokoroa, near Aurei, and other more enigmatic structural remains, such as pit and terrace features, stone alignments and standing stones. There are also stone-built fish traps along the shoreline. Some of these diverse coastal remains, which are particularly abundant around Ha'urei Harbour, have been surveyed and investigated (Smith 1965; Walczak 2001, 2003), but the thorough research that they deserve will require a substantial archaeological project.

Our research began in the coastal margins of Ha'urei Harbour, then expanded into each of the external bays, with the exception of Mai'i' (inspected by the Norwegian Expedition) and Takao, both of which are cut off by high cliffs and have very little coastal land. We observed these

southwest bays and the larger offshore islands (Karapoo and Tauturoo) from the sea, but were unable to land. The fieldwork consisted of searching all caves, shelters and exposed stream and wave-cut sections for early cultural deposits, using an auger and spade as needed. We also cored back-beach deposits, especially dunes and loam flats behind them, spade-tested terraces, and engaged in limited test-pitting by excavation. Forty-seven sites were recorded and in the 31 that were tested (Figure 3.1), we sampled for available radiocarbon dating materials, these generally

Figure 3.1. Map of Rapa Island showing location of bays and sites mentioned in this chapter.

1=R2002-30 south entrance shelter, 2=R2002-31 Anatakuri shelters, 3=R2002-33 Anakere shelter, 4=R2002-29 Tangarutu Cave, 5=R2002-34 Angairao shelter C, 6=R2002-36 Angairao shelter E, 7=R2002-38 Noogoriki shelter, 8=R2002-47 Taugatu shelter, 9=R2002-46 Autea shelter, 10=R2002-28 Akatanui Shelter 3, 11=R2002-27 Akatanui Shelter 2, 12=R2002-26 Akatanui Shelter 1, 13=R2002-44 Taga shelters, 14=R2002-20 Aitoke Oven 4, 15=R2002-25 Aitoke buried soil, 16=R2002-18 Aitoke Site 2 terrace, 17=R2002-17 Aitoke Oven 1, 18=R2002-19 Aitoke Oven 3, 19=R2002-45 Probable R16 terrace, 20=R2002-23 Tukou shelter, 21=R2002-24 Tukou Site 8 garden soil, 22=R2002-16 Tukou Site 7 terraces and walls, 23=R2002-13 Tukou Oven 4, 24=R2002-14 Tukou Oven 5, 25=R2002-15 Tukou Oven 6, 26=R2002-11 Tukou Oven 2, 27=R2002-12 Tukou Oven 3, 28=R2002-10 Tukou Oven 1, 29=R2002-7 Maraia Oven, 30=R2002-3,4,5 Tokoroa ovens, 31=R2002-8,9 Tokoroa ovens.

being restricted to charcoal because of the poor survivability of shell and bone in the damp volcanic soils of Rapa. We gave each site that we recorded a code number of R2002-n. Most of the sites recorded were small and evidently of single-phase usage, nearly all of them small earth ovens, but more complex sites exhibiting deep stratigraphy were also found, and excavated. The notes on archaeological sites collected by Stokes (n.d.) provided a valuable starting point.

Observations by Stokes

Stokes (n.d.:356) observed that flat land suitable for habitation was scarce on Rapa. The valleys are swampy and there is very little dry land at the bay heads; that which does exist is often stony. Nevertheless, he recorded a number of coastal habitation sites. He thought there might be older occupational remains under the 2.5 ha site of the modern village of Aurei. Other possible village sites mentioned by Stokes (n.d.:357–358) were at Angairao, Pairirao, Iri and Anarua. The last of these was the most promising. There are relatively extensive shore flats and low dunes, among which some patches of cobbles had the appearance of being arranged by hand and were possibly indicative of house floors. In addition, Stokes (n.d.:359) refers to,

many shelter caves... along the shore and some are very large. They are now used for camping in mild weather, either by fishing parties or by field workers [i.e. people working on the taro plantations etc], and from native accounts they were also occupied in earlier days.

Stokes (n.d.:360–365) describes caves at Togorutu [Tangarutu], Tikaioe [Akatanui] and, in Agairao Bay, at Noogoriki. Two tiny shelters in Angairao, suitable only for sleeping in, occurred at Pukumauatoku and Gapitau. In addition, there is the highland shelter at Taga and the tunnel caves in Mai'i Bay, the latter inspected by the Norwegian Expedition (Smith 1965).

In following up Stokes' observations by augering at Ha'urei village, we found no evidence of former sites, nor indeed at Area village, nor were there collections of artefacts from domestic gardens to be seen. However, the village areas are relatively substantial and small or discontinuous sites might have been missed. At Anarua, there are stone-built walls, terrace revetments of stone and piles of cobbles, but nothing immediately indicative of houses. Patches of cobbles on the shoreline showed some arrangement, possibly as fishing structures, but other patches of cobbles and gravel lacked any cultural form or content that could be observed. Augering through the dunes that lie about 100 m behind the beach produced no charcoal or any other evidence of habitation.

In the bays of Pariati, Akatamiro, Tupuaki, Akananue, Angairao, Akatanui, Angatakuri and Iri, coastal flats were augered in several places, and all existing stratigraphic exposures faced and inspected. Occasional pieces of charcoal and basalt flakes were produced, but no evidence found that was indicative of more than fleeting occupation. More intensive augering and digging of test pits over large areas of the bay headlands might locate remains of villages that eluded our initial investigation. In their apparent absence, attention concentrated on the cave sites recorded by Stokes.

Anarua Bay: Tangarutu Cave

There are two large caves on the south side of Anarua Bay. One near the point is probably 'Ogo Cave' referred to by Stokes (n.d.). It is 40 m wide, 10 m high at the entrance and extends 12 m back. However, the entrance is almost at sea level and the cave floor is piled with water-rolled cobbles and boulders. It is unlikely to contain any cultural deposits. About 300 m northeast is Tangarutu Cave (R2002-29). This is a very large shelter, opening to the north and facing across Anarua Bay and north-northwest out to sea (Figure 3.2). Reached by sea, the landing is feasible

Figure 3.2. Tangarutu Cave from the sea (top) and from the east (left). Photographs A. Anderson.

Figure 3.3. Plan of Tangarutu Cave in 2002.

in light winds from the southeast through northeast, but it is exposed to the north and west. By land, there is a steep climb from the inner bay around a bluff above cliffs. The cave is 80 m across at the dripline and it extends up to 29 m south to the back wall (Figure 3.3). The dripline is approximately 30 m from the water's edge. Within the cave is about 1450 m² of floor area to the dripline, and about 1700 m² to the maximum overhang.

In front of the cave are the remains of a sand dune, rising at the eastern edge to 5.3 m high, which sloped down seaward on to a boulder beach, and landward into the cave where, by recent times, a surface existed at up to about 4 m above mean sea level in the middle of the cave (Figure 3.4). Most of the dune is of light yellow-grey sand, which has been quarried away, leaving a sand 'buttress' at each side of the cave entrance. Sand also covers most of the floor of the cave, to a depth of 1–2 m from the original surface, the latter being mostly quarried away inside the cave but remaining around the inner sides and back (Figure 3.5). Within the remains of the dune at the mouth of the cave can be seen substantial layers of roof-fall basalt and, in the sand, some humus-stained layers, incorporating pebbles and clay, which are more strongly defined towards the top of the dune (Figure 3.6).

Excavation in 1997

The first archaeological investigations in this site were by Walczak in 1997. He dug five test pits, each 50 cm x 50 cm, in the back of the cave along a 12 m section near the southwestern wall of the cave (Walczak 2001:Figure 57). The intact face has retreated south by 2–5 m since 1997 as the result of continuing sand mining in the cave. Walczak's excavations produced a total of 36 basalt flakes, and 930 g of fish bone. The general site stratigraphy was described as three levels (Walczak 2001:298–299, Figure 56). Level 1, about 90–50 cm below the surface, contained negligible cultural material near the top of an indurated brown-black sand. This overlay a unit of brown, indurated sand finely lensed with loose white sand above a basal unit of white dune

Figure 3.4. Cross-section of Tangarutu Cave, and stratigraphy of section NS1.

Figure 3.5. (above) Looking into the interior of Tangarutu Cave, showing the quarried cave floor and marginal remnants. Photograph A. Anderson.

Figure 3.6. Section at the eastern buttress of Tangarutu Cave.

sand that lay on the basalt floor of the cave. Level 2, at 50–20 cm, consisted of loose sand in which occurred shell, fish bones, bird bone, charcoal, oven stones and flakes of basalt. Level 3, at 20–0 cm, was a layer of very indurated brown sand on a base of very coarse sand or pebbles, up to 2 mm in diameter. The brown sand occurred as plates or lenses often showing whitish lines indicative of carbonate precipitation.

Walczak (2001:299–302) interpreted the stratigraphy as indicating the influence of climatic changes. His hypothesis is that as the sand dune in front of the cave increased, its back slope steepened and spilled sand into the cave. During dry periods, the transported sediment remained as loose sand, but during wetter periods, the sediments underwent some soil-forming processes which formed layers indurated by the precipitation of iron pans (*alios*);

... les litages de sables bruns noirs qui nous font penser à des *alios*, c'est-à-dire à des concentrations gréseuses, indiquent que des phases un peu plus humides sont régulièrement venues ponctuées ces périodes 'sèches'. L'*alios* correspond à une dégradation superficielle du sable qui a tendance à s'oxyder sous l'impulsion d'une activité végétale ou animale. Le présence de carbonates et la consistance argileuse de ces niveaux indurés résulte vraisemblablement de ces processus érosifs. Le niveau archéologique correspond à l'unité 2: il interviendrait donc durant une période plus sèche, qui aurait laissé plus de possibilités aux vents d'apporter du sable. (Walczak 2001:301–202)

From two of the test pits, samples of charcoal were dated, to two sigma, as follows: from Tangarutu I, 495 ± 40 bp (Ly-8577), and from Tangarutu II, 330 ± 45 bp (Ly-8578). Together with the earlier date of 370 ± 60 bp (Chapter 1), these data suggested to Walczak that the site had been occupied relatively late. He was inclined, nonetheless, to think that there must have been earlier occupation on Rapa, perhaps extending to the 12th century.

Excavation in 2002

Bad weather and rough seas caused by southeasterly gales prevented access to Tangarutu until July 18 and the field team of three people landed there had to leave after six days' work when supplies ran out. Conditions prevented returning until August 7 when a team of six began work again, but left after two days in deteriorating weather. Nevertheless, nine days on site enabled us to investigate it quite thoroughly and to obtain large samples for analysis. The cave floor and entry were mapped by tape, line-level and measuring staff, and all sections keyed for relative depth to E1 and V1 (Figure 3.7). There was no opportunity to get back to the site and survey it by total station, so our levels have an estimated error of ± 15 cm over 25 m distance.

The archaeological sections were chosen to disclose variation in the stratigraphy and each was cut down to a vertical surface 50 cm wide and generally 5–10 cm into the exposure. Augering beneath each exposed section determined whether there was lower cultural stratigraphy and defined the depth to rock. In most cases, a spade hole showed that this was the cave floor, but where rock could be reached only by auger it was uncertain whether it was *in situ* cave floor or simply rockfall. The broadly consistent level of the rock surface, however, suggested that it was indeed the floor of the cave, and the fact that in nearly all cases the rock was covered with clean sand indicates that the current basal layers of archaeological remains represent the earliest habitation in the site (Figure 3.7). Transects of auger holes and spade holes, east-west and north-south, across the disturbed central part of the site, showed a similar pattern, but disturbance by sand quarrying was evident well down in the sand, as indicated by a fresh wooden stake at 35 cm depth, among midden, in Test pit NS1. Nevertheless, there, and elsewhere in the transects, clean yellow-brown sand generally overlay rock at 1.1–1.3 m below the surface.

Inspection of the exposed stratigraphy in sections around the site margins showed that

while there might have been some intermittent and incipient soil formation occurring in the sand, the overriding source of the stiff, brown, silty clays and clay-enriched sands, both often containing numerous pebble-sized and larger clasts of basalt, lies outside the cave. The thickest surface silty-clay layer, and the most frequent evidence of silty-clay lenses at depth, occurred in the western half of the cave where a continuous talus slope extends westward out of the cave and into the adjacent hill slope (see Figure 3.2). The slope into the cave was marked by water channels, recent clay flows and gravel spreads. In the eastern half of the cave, silty clay was relatively infrequent, especially along the eastern margin of the cave.

The density distribution of archaeological materials was generally the inverse of the silt-clay distribution, suggesting sand was preferred as a habitation surface by the cave occupants. Consequently, the deepest surviving stratigraphy, with the most continuous and densest archaeological remains, occurred along the northeast margin of the site (Figure 3.7). Section T1 illustrates the stratigraphy of this area (Figure 3.8). It shows a cleaned-down west-facing section in sand, extending to bedrock at 2 m; cultural remains reached 1.6 m. In this northeastern quadrant of the cave, the observable sequence, confirmed by three auger holes and excavation E:1–3 (below), consisted of sterile yellow-brown sand and basalt shatter up to boulder size, deeper towards the cave entrance (e.g. in T1), overlying an upper unit of yellow-grey to grey dune sand in which there were conspicuous bands of desiccated leaf and fibre, especially higher in the section, with intermixed gravel, midden, lenses of charcoal, and burnt and broken basalt. A lower unit, below 100–110 cm in T1, had much less fibre in darker grey-brown sand, and charcoal, midden and burnt stone were sparse in the lower unit. The lower levels of the section were mostly sterile yellow sand, laminated with lenses of gravel and lines of light-brown or grey sand in which some silty clay was apparent.

In the southeastern quadrant of the site, very little of the archaeological stratigraphy remains. Section T3 (Figure 3.9) is within the distribution range of the last phase of silty-clay deposition, which preceded a terminal drift of grey-brown dune sand in which some cobbles had been

Figure 3.7. Investigated sections in Tangarutu Cave set out in order and by approximate height above sea level.

Figure 3.8. Stratigraphy at Section T1, Tangarutu Cave.

Figure 3.9. Stratigraphy at Section T3, Tangarutu Cave.

deposited. Beneath the silty clay, grey-brown sand contained abundant midden, especially of fish bone, and in the lower part of the grey-brown sand, 55–100 cm, cobbles, burnt and broken stone, charcoal and wood ash indicated the margin of an oven. Below 100 cm was clean, yellow sand. Section T2 was similar (Figure 3.10), except that the upper-silt and clay was divided into a number of fine bands separated by yellow sand, or, below 18 cm depth, by bands of fine gravel. Midden was sparse below, and near the base of the grey-brown sand were remains of a fire, with beach-rolled boulders alongside it. Section V1 (Figure 3.11) showed the same upper stratigraphy as T2, but it was thicker, at 70 cm. The grey-brown sand beneath was relatively thin, about 20 cm, but it contained abundant fish bone and lenses of charcoal.

Moving round to the western margins of the cave, it was apparent that fairly recent fluvial erosion has cut down, in a stepped fashion, through the mainly silt and clay sediments, removing the upper stratigraphy from some sections (S1, S2 and excavation R1), while retaining the upper levels at S3 and S4. There was enough overlap exposed, or dug out, to fit S4 and S3 to R1, and the latter to S1 and S2. Section S4 (Figure 3.12) was an exposure, entirely of more-or-less horizontally banded sand, gravel, silt and clay, forming the bank of a deeply incised watercourse (100 cm deep), which had run through the silty clay and associated sand into the middle of the site. The watercourse appeared quite fresh and it was very probably a consequence of sand quarrying; the removal of sediments in the centre of the site rejuvenating the erosive capability of temporary watercourses which would otherwise have dispersed across the silt-clay

Figure 3.10. Stratigraphy at Section T2, Tangarutu Cave.

Figure 3.11. Stratigraphy at Section V1, Tangarutu Cave.

Figure 3.12. Stratigraphy at Section S4, Tangarutu Cave.

Figure 3.13. Stratigraphy at Section S3, Tangarutu Cave.

floor of the western part of the cave. The upper 80 cm of Section S3 (Figure 3.13) comprised a complexly lensed unit of brown silt-clay, finely laminated yellow sand and lenses of fine gravel, in which there were a few charcoal flecks. Grey-brown sand, 80–120 cm, was laminated with thin lenses of yellow sand and contained abundant charcoal and broken oven stones, intermixed with midden and basalt flakes.

Section S1 (Figure 3.14) begins stratigraphically at the 100 cm point in the S4 sequence. It contained similar units of sand and silty clay, but at 30 cm (1.3 m below the top of S4), there was a 10 cm band of yellow sand containing part of an adze preform and some bone midden and charcoal. Section S2 (Figure 3.15) begins stratigraphically at the 121 cm point in the Section S4 sequence. It had an upper layer of indurated grey-brown sand, silt and clay in which there was abundant charcoal and sparse midden. Beneath it was an oven with burnt, cracked stone and very abundant charcoal. A lens of brown sand through it seemed to divide successive episodes of use. The sand beneath the oven had the pinkish-brown aspect of having been burnt. The S4-S1 and S2-S4 sequences show that in the western part of the site the sediments were about as deep as in the east, 1.8 m and 2.1 m respectively to bedrock, but composed more largely of sterile sand, silt and clay. Along the south wall of the cave, the sand was shallower and bedrock was reached at 1.1 m to 1.2 m depth. The original shape of the site surface when it had been abandoned would, therefore, have been a shallow hollow, higher at each side and lower in the middle.

Figure 3.14. Stratigraphy at Section S1, Tangarutu Cave.

Figure 3.15. Stratigraphy at Section S2, Tangarutu Cave.

Excavation E1-3

Two small excavations were carried out at Tangarutu in 2002. In the eastern area, a 3 m x 1 m excavation area was laid out, although in the event, the excavation was so time-consuming, because of the depth and abundance of material and the time required for field sorting, that only the first two squares (E1 and E2) were excavated, a total of 1.5 m².

Square E1 was completed down to natural. In Square E2, only the adjoining or west half of the square was excavated. When the 1 m x 0.5 m excavation had reached Spit 5, bad weather was forecast, and with the boat due early the next day, the excavation was narrowed to a column 50 cm x 25 cm (Figure 3.18). It had the same stratigraphy as E1 and was excavated in 5 cm spits with 3 mm sieving down to 90 cm. With the arrival of the boat, the remaining Spits 19–25 of cultural material were taken out as whole samples. In addition to whole samples by spit, we also took out two large 'slices' in an attempt to preserve the microstratigraphy, especially the structure of the fibres, which was breaking up in sieving. These were at 10–18 cm and 45–58 cm (i.e. 8 cm and 13 cm thick respectively), each being 25 cm x 35 cm in area. They were packed into plastic boxes.

The location of Tangarutu is such that only a relatively small quantity of material could be taken out by backpack and the capacity of a small open boat was not much more, considering the persistently heavy seas. In the absence of convincing layer boundaries, excavation was by 5 cm spits in the main. The material was sieved through a 3 mm screen, except at a few points where the amount of gravel required a 4 mm screen; at those times, the residue was also sorted in a 3 mm screen. Below 70 cm, there was an abundance of broken oven stone, gravel and charcoal, but only sparse midden, mostly of large fish, and sieving switched to a 4 mm screen and 10 cm spits. A 30 cm x 18 cm plastic bag of whole sample (about 1.5 litres) was taken from each 5 cm spit and two from each 10 cm spit, for later sorting at the ANU through a 2 mm sieve. The residues were retained for future analysis.

The stratigraphy of E:1-3 (Figure 3.16) consisted of an upper unit (Level III, 0–40 cm) of slightly compact grey-brown sand and fine gravel packed with desiccated leaves, probably *Pandanus* or *Cordyline*. These often appeared as if strewn or blown into the cave, and some had become ‘felted’, but some also had been plaited. The leaves were very fragile and occurred as patches rather than as continuous features. Among them was abundant midden of shell, crayfish and crab exoskeleton, bone from small fish, occasional bird bone, pieces of gourd and candlenut, *Pandanus* keys and chewed fibres that were thought to be from *Cyathea* tree fern pith, along with flattened coprolites, pieces of cordage, charcoal, some basalt flakes and small fish hooks of candlenut and shell. Similar material, but much sparser, occurred at 40–70 cm (Level II), and below that (Level I, 70–150 cm) were oven remains of charcoal, oven stones and ash going down through faint grey lenses into clean yellow sand (Figure 3.17).

The material retained for analysis in this and other coastal excavations consisted of: all identifiable shell (whole shell and apertures, spires, columns etc, plus pieces of sea urchin, and crab and crayfish exoskeleton); all fish bone except for ribs and spines; fish scales; all bird, reptile and mammal bone; all wood and charcoal of >20 mm largest dimension and any pieces with potentially identifiable features; all other plant tissue (much of it candlenut, but also *Pandanus* keys and chewed pieces of possible *Cyathea* pith) and natural fibre; all woven, plaited or otherwise modified fibre; all stone flakes; and all artefacts of any other kind. In various places, samples of sand and silt were taken to enable a search for phytoliths, pollen and other microscopic components.

Figure 3.16. Excavated Square E1, Tangarutu Cave.
Photograph A. Anderson.

Figure 3.17. (above) Stratigraphy at Section E1, East bulk, Tangarutu Cave.

Figure 3.18. Excavation in progress at Square E2, Tangarutu Cave. Photograph A. Anderson.

Excavation R-1

A 1.0 m x 1.0 m excavation was placed in this area to sample the cultural materials in the western half of the cave (Figure 3.19). This excavation occurred at the same time as excavation of Square E2, and was constrained by the same problems with weather and transport. Excavation using the same protocols of 5 cm spits, 3 mm sieving and retention of whole samples and cultural material proceeded at R1 down to 80 cm, at which time it switched to 10 cm spits and 4 mm sieving, with two large whole samples (each about 20 litres) taken.

The cultural material, predominantly fish bone midden with scarce bird bone or shell, but abundant charcoal, was found mainly in the top 30–40 cm (designated Level III), where two units of grey sand were separated by thin lenses of yellow sand. The upper grey-sand unit was finely laminated, indicating that it had been deposited without disturbance and the sparse midden and charcoal that occurred in it had been presumably blown in. The lower grey-sand unit (ca. 20–35 cm) had abundant charcoal but very sparse midden. Similar material in brown-grey sand from 40 cm to 80 cm (Level II) contained patches of midden and charcoal. The lowest material (80–105 cm, Level I) was essentially an oven full of broken oven stone, charcoal and very sparse midden (Figure 3.20).

Figure 3.19. Excavated Square R1 at Tangarutu Cave. Photograph A. Anderson.

Figure 3.20. Stratigraphy at Section R1, Tangarutu Cave.

Akatanui shelters

The Akatanui shelters consist of a main site (Shelter 3) and several small shelters at the west end. Shelter 3 is a large, narrow, southeast-facing rockshelter, known ethnographically as Tikaioe (Figure 3.21). It is 102 m long and up to 12 m across to the dripline, but mostly less than 5 m wide, and it is divided by rock buttresses into five alcoves containing archaeological deposits (Figure 5.22). Most of the site is 2–2.5 m above sea level, and the shelter ceiling is 20 m high at the dripline, so the site is exposed to wind-driven rain and spray. Two small shelters are <10 m long and only one (Akatanui 1) has a cultural deposit.

Akatanui 1

A 10 cm thick deposit of midden was found over an area of 8 m² in this site (R2002-26). A 1 m x 1 m excavation showed the midden to contain mainly broken gastropod shell, with some fish bone, crayfish and crab shell. Among it were two shell buttons, an iron nail and a lens from a pair of spectacles, all of early 20th century form. Akatanui 2 (R2002-27) was a smaller shelter 150 m to the east. It had a very thin scatter of midden similar to that in Akatanui 1.

Akatanui 3

A series of test pits along this large shelter (R2002-28), which begins 120 m east of Akatanui 2, showed that most archaeological deposits were thin and sparse. Test-pit A1 (50 cm x 100 cm) had a 15–20 cm deep deposit of ash and charcoal, within which were some fragments of wood and fibre, and a few pieces of candlenut and gastropod shell. Test-pit B1 (50 cm x 80 cm) revealed a 4 cm thick deposit of charcoal-stained, but otherwise sterile, sand. Test-pit E1 (50 cm x 100 cm) was a sand deposit 33 cm deep, from which a very small quantity of charcoal, fish bone and gastropod shell was recovered, and Test-pit F1 (50 cm x 50 cm) was a 47 cm deep deposit of sand, gravel and basalt shatter with no archaeological material (Figure 3.22).

The main excavation was of 2 m² at C1 (Figure 3.23, 3.24). This part of the shelter is

Figure 3.21. Akatanui shelters looking northeast across Alcove B. Photograph A. Anderson.

lower than elsewhere, about 1.2 m above sea level, but Akatanui Bay is relatively sheltered. A broad coral reef breaks the swell offshore and a band of mangroves shelters the shoreline. The stratigraphy (Figure 3.24) disclosed by excavation comprised a single 5–15 cm thick layer of cultural deposit, which was overlain by yellow-brown carbonate sand and basalt shatter, plus some beach-rolled cobbles (Unit 1 in Figure 3.24), and underlain by gravel and sand, going down on to beach-rolled cobbles and boulders (Units 3 and 4). The cultural layer (Unit 2) was of coarse sand and gravel containing beach-rolled cobbles and boulders, abundant oven-stone fragments and charcoal, lenses of wood ash, some molluscan and crab shell, fish bone and several patches of fibre, including of *Pandanus*.

Figure 3.22. Akatanui shelters showing the alcoves and excavations, and, below, the height of the shelter floor above sea level.

Figure 3.23. Akatanui shelters showing Alcove C, and Excavation C1 in progress. Photograph A. Anderson.

Figure 3.24. Akatanui shelters. Excavation C1 plan, above, and section, below.

Angairao shelters

On the western side of Angairao Bay, a series of rockshelters occurs along the headland running out to Point Komire, which separates Angairao from Akananue Bay (Figure 3.25). Shelters A and B proved unpromising. Shelter D (R2002-35) is 21 m long and up to 3.5 m wide and is filled with unsorted talus of clay and silt plus basalt clasts up to large boulder size. This material slopes into the shelter and, as the dripline is inside the highest point, the shelter sediments are damp. A spade pit reached 45 cm down to either bedrock or a very large boulder without disclosing any cultural material. Shelter C (R2002-34) has a silt floor behind a low piled-rock wall. A test pit (50 cm x 50 cm) disclosed an archaeological deposit of shell and bone midden with charcoal and some patches of fibre or bark near the top of it (Figure 3.25). Excavation continued down through yellow-brown silt and clay containing abundant basalt shatter to flat rocks or bedrock at about 95 cm deep.

Shelter E rock art and excavation

The main fieldwork was in Shelter E (Figure 3.26), which is an annexe to the southeastern end of Shelter D, where the talus slope falls away seaward, leaving a dry floor approximately 20 m x 5 m. On the northwest face of this shelter (R2002-36), three figures had been pecked about

Figure 3.25. Agairao Bay showing distribution of shelters and plan and section of excavation in Shelter C.

Figure 3.26. Agairao Shelter E (annexe of Shelter D). Photograph A. Anderson.

1.5 mm deep into the smooth basalt surface (Figure 3.27). These (R2002-37) were the only examples of rock art that were seen on Rapa. One figure (30 cm in height) at the bottom of the panel is rudimentary. At 33 cm above the highest incision of this begins a 61 cm tall figure representative of a bird or possibly an eel. Diagonally above that is a 25 cm human figure. The latter looked slightly fresher than the former two. Near the figures are indistinct black markings that might once have formed letters, and across them a vertical streak of red ochre. The human and the bird/fish figure are in typical prehistoric East Polynesian styles, and the possible lettering and red mark are features of rock art in New Zealand (Trotter and McCulloch 1981), and elsewhere in East Polynesia where writing partly supplanted drawing in the missionary era.

The Shelter E excavation was 1.2 m x 0.6 m and located in the back of the shelter (Figure 3.28), where the floor consisted of a 20 cm thick layer of cow dung. Beneath this the sediments were mainly of gravel and silt, plus numerous pieces of burnt stone and large pieces of basalt shatter, which were increasingly frequent with depth. Below the dung was a thin layer of fireplace remains (called 'Oven 1') overlying orange-yellow silt, probable ash and gravel. In the base of this unit was turtle bone and some fish bone midden. Below that unit was a 100 cm thick undifferentiated layer of black silt and clay with lenses of ash, abundant oven stone and charcoal. This was designated 'Oven 2'. Midden was very sparse, consisting mainly of some gastropod shell and fragments of fish bone. This unit was excavated in 10 cm spits and later divided into three levels (Level III, 60–90 cm; Level II, 90–140 cm; Level I, 140–165 cm).

Below 90 cm the deposit was damp, which probably accounts in part for the scarcity of organic remains, and below 140 cm it was wet, and charcoal was relatively scarce. At 160 cm deep there was a 3 cm thick band of grey clay without charcoal or any other cultural material. The natural layer beneath comprised red-brown, sticky clay and basalt clasts up to 40 cm in size. This was excavated for 5 cm then augered down to 186 cm below the top of the excavation, where rock was encountered all over, presumably the bedrock of the shelter.

Figure 3.27. Rock engravings on the wall of Agairao Shelter E, above, and field sketch of them, left. Photograph A. Anderson.

Figure 3.28. Agairao Shelter E excavation plan, above, and section, below.

Noogoriki shelter

On the eastern side of Angairao Bay, near Tematapu Point, is a large rockshelter, 25 m long and about 3.5 m wide in the middle (R2002-38). It is 5 m above sea level, but right on the shore (Figure 3.29) and exposed to westerly gales and high seas. Stokes (n.d.:360) reported that a burial platform was found inside it. A 40 cm x 40 cm excavation encountered a 60 cm thick cultural layer beneath 20 cm of modern organic material and silt (Figure 3.30). The cultural layer consisted of black silt and gravel with abundant basalt shatter and oven-stone fragments. The material was compact and damp and difficult to sieve even at 4 mm mesh. It contained very little fish bone and shell, but plenty of charcoal. A large bulk sample was taken from 70–80 cm depth.

Figure 3.29. Noogoriki Shelter in Agairao Bay. Photograph A. Anderson.

Figure 3.30. Plan and section of test pit in Noogoriki Shelter.

Additional rockshelters

Ha'urei Harbour

Near the south entrance of the harbour there is a rockshelter (R2002-30) about 12 m above sea level (Figure 3.1). It has a floor area of 10 m x 3 m behind the dripline. A 40 cm x 40 cm spade hole in the centre of the floor revealed a 12 cm layer of modern organic material overlying an 18 cm thick brown loam resting on bedrock. Within the loam were small lenses of ash and charcoal containing gastropod shell and fish bone fragments. These were sampled. At the head of the harbour is a small rockshelter (R2002-23), which contained a thin deposit of midden and charcoal.

Angatakuri Bay

Five rockshelters can be seen in the middle of the north-facing part of the southern coastline in this bay, and a further three are on the east-facing shore about 250 m northwest of the point (see Figure 3.1). All the shelters are narrow and damp and most contain no suitable sediment. Shelter A (R2002-31), about 5 m above sea level, was mostly clean down to bedrock, but contained a 16 m² area of sediment which was tested by a 40 cm x 40 cm spade pit. This showed 10–12 cm of brown sticky clay and roots over a 15 cm-deep deposit of wet, dark-grey clay containing burnt stone and charcoal, plus one flaked piece of basalt. Beneath was a thin layer of brown clay and gravel going down to bedrock. Shelter B (R2002-32) is about 8 m above sea level facing north and has a floor 17 m x 3 m to the dripline. Rainwater runs back into the floor, which has a row of taro planted in it. Two auger holes and a 40 cm x 40 cm spade pit disclosed 35 cm of sticky brown clay over a wet deposit of dark-grey clay, silt and sand, containing broken rock and charcoal, which extended to bedrock at 116–120 cm depth.

Iri Bay

The Anakere shelter (2002-33) was investigated. This is beside, and 1.5–2.0 m above, a small stream about 12 m above sea level. Most of the shelter floor is enclosed within a rectangular perimeter of placed stones, which probably had something to do with the reputed mortuary function of the site (Stokes n.d.:258). Our investigations were restricted to augering in the outer margins of the shelter (Figure 3.31). Cores 1 and 3 produced stratigraphic records. They showed that the top 35 cm consisted of reddish-brown, very compact clay. Below that there was mid-

Figure 3.31. Plan of Anakere Shelter, Iri Bay, showing location of augering.

brown clay containing water-rolled pebbles and some small pieces of charcoal down to 140 cm. The deposit beneath was sloppy brown clay and gravel, with no apparent charcoal. It could not be recovered by auger below 180 cm.

Tupuaki Bay

On the west side of this bay, in coral limestone, there are clefts and small shelters. In one of these were four human skulls, placed in secondary burial, and partly stained with red ochre. These were not touched.

Autea Bay

Near the southern point of Autea Bay, opposite Tarakoi Island is a 15 m long x 3 m deep rockshelter, facing north (R2002-46). In its larger of two alcoves a 50 cm x 50 cm test pit disclosed a 10–30 cm layer of wet black clay loam, containing charcoal, resting on the bedrock. It was overlain by 25–30 cm of damp, red-brown clay loam.

Taugatu Cave

About 200 m to the south of R2002-46, on the open coast, and about 4 m above sea level is a fairly substantial rockshelter (Figure 3.32), 20 m long by up to 4 m deep (R2002-47). A 50 cm x 70 cm test pit revealed, beneath 20 cm of modern soil and gravel, a grey-black clay loam extending below 60 cm into a grey silty clay down to 85 cm. Charcoal was found sparsely throughout and a large bulk sample was taken near the base to recover datable material. Beneath 85 cm depth was brown clay and abundant basalt shatter without charcoal (Figure 3.33).

Taga shelters

It is convenient to include the Taga shelters here (R2002-44), although they are located on high ground below the Tanga fortified site. There is a lower stone shelf, 1.5–1.8 m wide, which is very

Figure 3.32. Taugatu Shelter from the sea. Photograph A. Anderson.

Figure 3.33. Plan and section of Taugatu Shelter test pit.

exposed and had no remaining cultural deposit and, about 2.8 m higher and to the south, an upper shelter about 30 m long in which an 8 m x 4 m area of cultural sediment was investigated (Figure 3.34). A 40 cm x 40 cm test pit (A) showed a 20 cm deep deposit of very friable silt and sand that was finely laminated in darker and lighter bands. That contained burnt stone, charcoal and some shell fragments. A second test pit of the same size (B) disclosed the remnants of an oven in section, containing abundant charcoal and burnt stone, and some fragments of marine shell and fish bone.

Coastal open sites

In Ha'urei Harbour, small ovens were seen in plan or section, sometimes occurring as clusters, in roading, stream and other erosion exposures, and basalt cores and flakes occur commonly around the shoreline (see Figure 3.1). Details of stratigraphy are omitted here, but they are available from the author. UTM coordinates for these sites are in Appendix D. In addition to work at the sites enumerated below, spade pitting and augering occurred at many places in which no cultural remains were disclosed. This was especially so to the east of Aurei village in the coastal flats at Pararaki, where ovens and stone tools had been reported. At one particular location, on the Faraire property, augering down to 2.25 m in several places showed only surface (modern) ovens and small flecks of charcoal in the higher sediments beneath. Charcoal flecks in coastal clays are common in Rapa, both in garden features and stream beds. These were sometimes sampled for palaeoenvironmental research, as in Pariati Bay, where a flight of taro terraces was systematically augered.

Figure 3.34. Plan, top, of Taga shelters, and plan and section, above, of Test-pit B.

Tokoroa

One main cluster of ovens was sampled along the south side of the harbour at Tokoroa, where a historical village had stood on terraces built down a broad spur. Ovens were sampled near the coastline (R2002-5), from a terrace section in which at least two events of oven use are represented (R2002-3, R2002-4), and from hillside exposures in the vicinity of the terraces (R2002-8, R2002-9). Another oven (R2002-7) was sampled in Maraia, the next small bay to the west. These ovens contained abundant charcoal but lacked oven stones and flaked stone. On the north side of the harbour, ovens were sampled in and near Aitoke (R2002-17, 18, 19, 20; of which 20 also contained some fish bone).

Tukou

In the Tukou area at the head of the harbour where there are various clay roads, more ovens were sampled in the banks or road beds. These were ovens containing both charcoal and oven stones (R2002-10, 11, 12, 13, 14, 15, 22, 24, 25; and at 11 and 12 also flaked basalt). Charcoal

samples were also taken from an exposed section (R2002-16), along the edge of a knoll, beneath a stone-walled structure that formed part of a complex of features on the top of the knoll that included enclosed burials marked with slab surrounds.

The terrace site designated R-16 by Smith (1965:82) was of particular interest because it had provided a radiocarbon age of AD 1337 $\pm$ 200 (M-707). It was difficult to relocate, but after close inspection of the area we are fairly confident that it is our site R2002-45, located on the right bank of the small stream in Tukou that enters the bay near the prominent terrace site of Manga Parahurahu (Smith 1965:81). The site R2002-45 is a stone-faced terrace sectioned by stream erosion. Immediately beneath the level of the stone, facing and running back into the terrace, was a layer of friable, more-or-less stone-free, silt loam containing some pieces of charcoal, which were collected (Figure 3.35).

Conclusions

Coastal research provided several sets of data pertinent to the objectives. The site recording, though limited in scope, showed that coastal settlement patterns were probably somewhat different between Ha'urei Harbour and the outer bays. This was partly a function of the distribution of cave and rockshelter sites, which are relatively more common and usually larger in the outer bays and which had been chosen, consequently, as habitation sites. It was also, probably, a function of the relatively greater area of agricultural land in Ha'urei Harbour, especially at its head. The frequent occurrence there of possible house terraces and other structural features, plus numerous dispersed ovens, contrasts with the typical pattern in the outer bays where all suitable land has been converted into agricultural terraces and there is relatively little evidence of open habitation or ovens (although it is also the case that roads and other features in which ovens are exposed are more common in Ha'urei Harbour). One point that was widely apparent is that there has been considerably greater mobilisation of sediments since the prehistoric era. This is especially evident at Tangarutu, but in the coastal sites generally there are thick layers of hill slope and other sediments deposited on the archaeological stratigraphy, and much less often within it.

Excavations and test pits at numerous sites, and collection of many radiocarbon-dating samples provides a first overview of the chronology of the Rapan sequence. This shows that coastal locations, especially in the outer bays, were used at the beginning of the Rapan sequence, and continued to be used throughout it (Chapter 11). Tangarutu Cave, in particular, discloses a long sequence that begins with the earliest archaeological radiocarbon dates from Rapa.

Figure 3.35. Section of R2002-45, which is probably R-16 of Smith (1965).

Analysis of excavated material (detailed in Chapters 4 to 9), most of it from the Tangarutu excavations, discloses little evidence of variation in resource use over time, despite the loss of a few bird species and the slightly greater use of larger fish taxa early on. To some extent, the variation is taphonomic, notably at Tangarutu where the survival of fibre and plant-food remains, in particular, is confined to upper levels. It is very likely that these resources were exploited at least as commonly earlier. That aside, the overriding impression is of an early and persisting focus on fishing for relatively small species and shellfishing for gastropods. Turtle was uncommon and there were no pigs, chickens or dogs before the historical era.

References

- Kennett, D., Anderson, A.J., Prebble, M., Conte, E. and Southon, J. 2006. Prehistoric human impacts on Rapa, French Polynesia. *Antiquity* 80:1–15.
- Smith, C.S. 1965. Report 5: Test excavations and surveys of miscellaneous sites on the island of Rapa Iti. In: Heyerdahl, T. and Ferdon, E.W. (eds), *Reports of the Norwegian Archaeological Expedition to Easter Island and the East Pacific*, Volume 2 Miscellaneous Papers. Monographs of the School of American Research and the Kon-Tiki Museum, 24 Pt. 2, pp. 77–87. Esselte AB, Stockholm.
- Stokes, J.F.G. n.d. *Ethnology of Rapa Island*. Unpublished draft of B.P. Bishop Museum Bulletin of the Bayard Dominick Expedition. Five unbound volumes with multiple pagination (page numbers used here are generally the circled numbers). B.P. Bishop Museum, Honolulu.
- Trotter, M.M. and McCulloch, B.A. 1981. *Prehistoric Rock Art in New Zealand*. Longman Paul, Auckland.
- Walczak, J. 2001. Le peuplement de la Polynésie orientale. Une tentative d'approche historique par les exemples de Tahiti et de Rapa (Polynésie française). Unpublished PhD dissertation, University of Paris I – Pantheon Sorbonne, Paris.
- Walczak, J. 2003. Presentation des données actuelles sur la préhistoire de Rapa Iti (archipel des Australes-Polynésie Française). In: Orliac, C. (ed), *Archéologie en océanie insulaire: peuplement, sociétés et paysages*, pp. 28–45. Editions Artcom, Paris.