

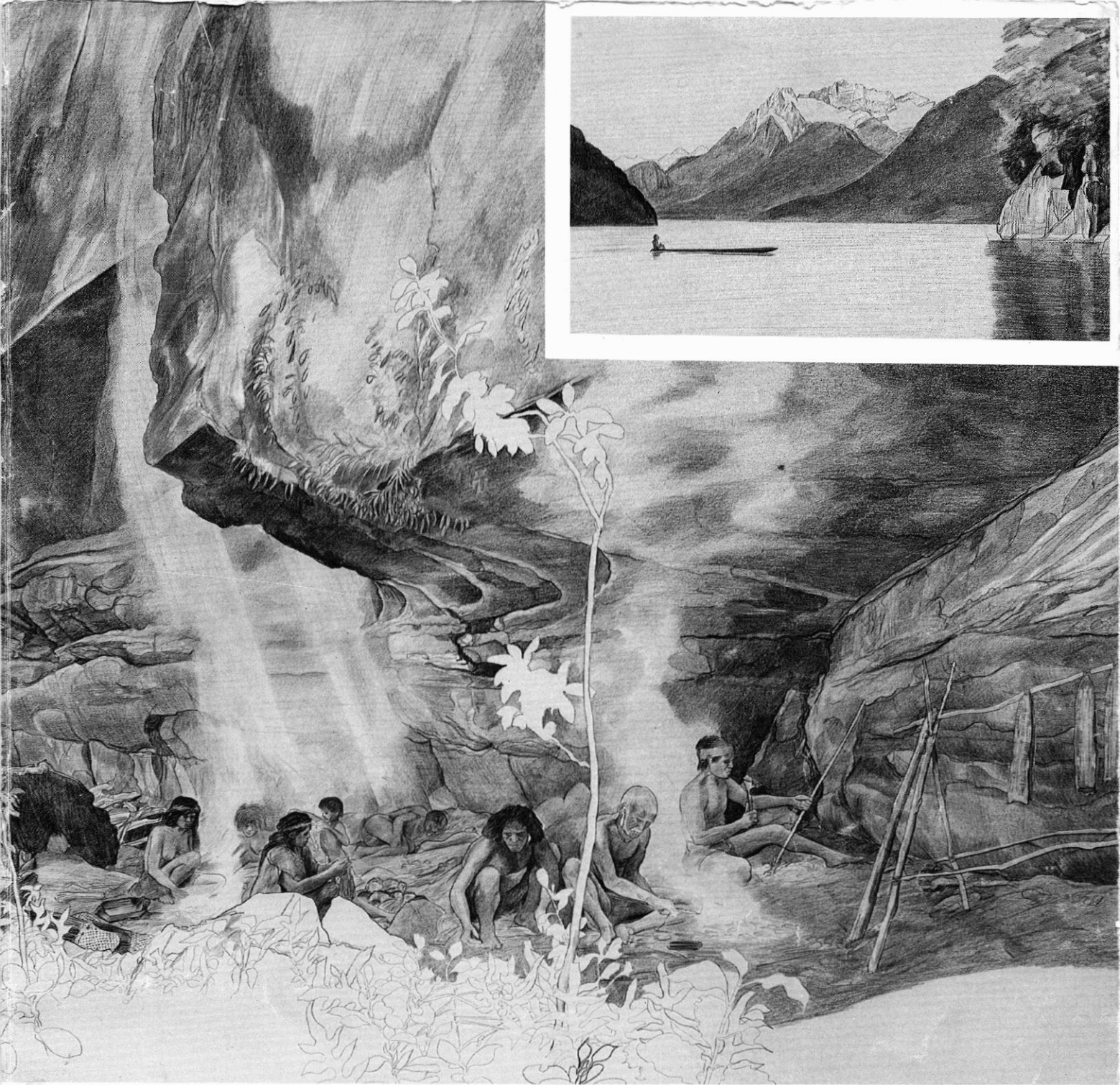


**NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION MONOGRAPH 18:
Atholl Anderson and Richard McGovern-Wilson (eds), *Beech Forest
Hunters***



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Beech Forest Hunters

Edited by
Atholl Anderson and Richard McGovern-Wilson

New Zealand Archaeological Association Monograph 18

MAORI SETTLEMENT ON LEE ISLAND

Atholl Anderson and Richard McGovern-Wilson

The nature of the activities carried out prehistorically at Lee Island, and how they were related to pre-European Maori lifeways in southern New Zealand as a whole are the matters addressed here. They are questions which depend, in the first instance, on whether all four of the rockshelters were occupied at the same time. If it is concluded that they were, then variations in content amongst them may be explained in different ways, for instance by deliberate division of settlement functions, than might otherwise be the case.

CONTEMPORANEITY OF OCCUPATION

There are no data from S131/3 or S131/5 which bear upon the matter of relative chronology but the remaining two sites can be compared across a range of potential evidence. The argument here is that while it is possible that a difference in site contents might reflect only a division of site functions within a contemporary occupation, we would still expect to find some similarities, particularly in artefact types or materials, if the same people were moving back and forward between two parts of the same settlement.

Looking first at the adze assemblages, there are clearly some significant differences. In S131/4, there were several large, tanged adzes (and a possible ulu) of shapes which appear to reflect regional development of early or 'Archaic phase' types. In S131/6, however, small untanged adzes, most of them in nephrite, were predominant. These are generally associated with sites of the later prehistoric era (the so-called 'Classic phase') in southern New Zealand. Only one large blank may have been intended for an adze of the southern New Zealand styles found in S131/4. Between the two sites there is, in addition, very little overlap of stone types: none of the adzes are of the same material between the sites and porcellanite, silcrete, chert and chalcedony occur only in S131/4, while nephrite is confined to S131/6.

Secondly, amongst other artefact classes there are, likewise, no obvious similarities, except that totara bark was used in both sites. There was a distinctive form of knot found only in S131/6 together with the brushwood and netting artefact, while wooden artefacts (other than the racks) and woodchips were confined to S131/4. Some distinctive differences also occurred in the faunal remains. Kakapo are found only in S131/4, and weka and diving petrel only in S131/6. Differences in the representation of bones and feathers were also discerned. For example, kaka were returned to S131/4 with the lower legs intact,

unlike at S131/3 or S131/6. (On the other hand, a piece of worked dogskin in S131/6 could have been part of the cloak remains recovered from S131/4: it was about the same width as the skin strip folded along the top of the cloak).

Thirdly, the single radiocarbon date from S131/6 is younger than the three from S131/4 and while this might be either a random effect or the result of differences in the lifespan composition of the samples, it could also suggest that the sites are not contemporary. It may be, as suggested in Chapter 3, that the important point is not a chronological difference as such - that might be insignificant in calendrical terms - but rather that the two sites could bracket a significant change in the material culture assemblage. This, in turn, might reflect the displacement of an older-established tribe such as Waitaha by recently-arrived people from the north; of the Ngatimamoe tribe or perhaps from clans which later became known collectively as Ngaitahu (Anderson 1982a), although it should be stated that no such proposition can be validated by current archaeological evidence.

Irrespective of whether this proposition is true, the general indication is of a material culture in transition towards a Classic phase assemblage during the 16th century, and this is consistent with evidence from other sites in the southern South Island. At Dart Bridge, for instance, the nephrite-working area (area D) of the site is dated to the 16th century (Anderson and Ritchie 1986), and in coastal east Otago, sites containing early Classic phase assemblages are dated to the 17th and 18th centuries (Leach and Hamel 1978).

FOREST FOWLING AND SETTLEMENT SEASONALITY

The basic function represented at all four sites was forest fowling, and to it was tied, in all probability, the settlement seasonality. There are no direct archaeological indications of the latter, nor many of the fowling techniques which were used, but some light may be thrown on these matters by reviewing ethnographic evidence of the methods commonly used to take the main species represented at Lee Island.

Kakapo were generally hunted in the late summer at night with the aid of dogs and torches (Best 1908:262; Buller 1877:202), especially during the 'booming' season which usually occurred every two years. At that time the male birds exhibited lek behaviour by building systems of bowls and tracks to which females were attracted by booming calls. Up to 50 such systems might be found in an

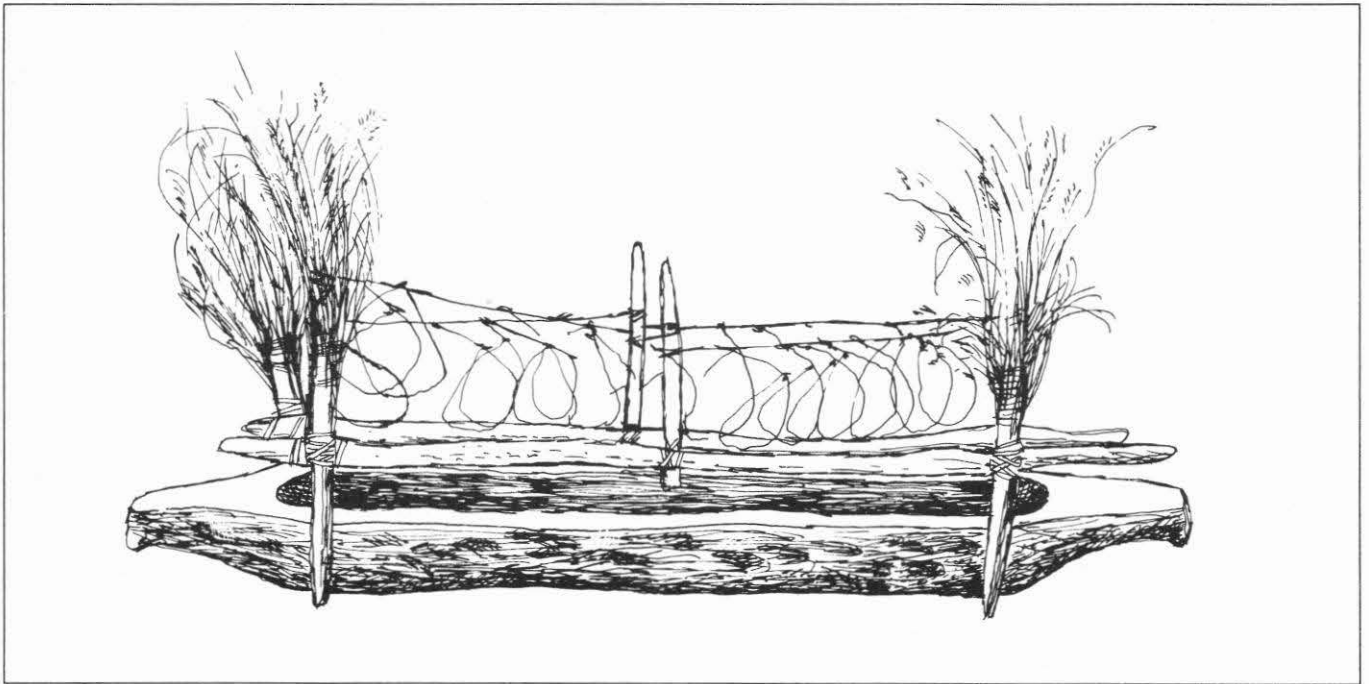


Figure 9.1. Waka keruru (Best 1977:Fig. 18).

area of several square kilometres (Robertson 1985:243), thus concentrating the birds in a way which facilitated active hunting (Best 1908:262; Buller 1895: 347). Kakapo were also taken with the aid of spring snares set in a square enclosure known as a puaka (Best 1942:170, 173). The predominance of probable male kakapo tail feathers in S131/4 is consistent with a catch during a summer booming season.

Native pigeons were caught often in large numbers (e.g. Robertson 1985:238), generally while feeding on the fruits of the miro but also while eating kahikatea, matai and rimu berries. Three devices were used. The first was the water trough, or waka keruru (Fig. 9.1), which was usually made of totara, ringed with snares, and set in miro trees (Best 1909:463-464; 1942:245-248; Downes 1928:1-9; Ranapiri 1895). It was an effective method, but whether it was used during the prehistoric period is unclear since it seems to have been introduced into some areas only in the later post-European era (Best 1942: 245-246; Downes 1928:10). Secondly, snares were also set separately in miro, maire, kahikatea and matai but not rata or rimu trees, sometimes using a cord to which were attached large numbers of running nooses strung through the branches (Best 1909:446, 463, 480). Thirdly, the long bird spear (kaihua or taoroa, 25-30 feet long = 7.6-9.1 m), was used in large trees to catch pigeons, kaka and tui when they were flocking to the rata blossom in the late summer (Best 1909:459; 1942:156; Ranapiri 1895:144).

Kaka were caught also while feeding on the fruits of maire, kahikatea, miro, hinau and rimu (Best 1942:207-208; Downes 1928:22; Ranapiri 1895:145). Perch snares or mutu-kaka

(Fig. 9.2) were often used (Best 1942:207-208). They were devices which combined perches and running nooses (Best 1909:465; Firth 1959:166). Kaka were enticed to the perches by decoy birds that were fastened by means of a bone ring (poria) and flax cord, to a small platform (or sometimes a bivouac, as in southern New Zealand; Beattie 1920:69; Travers 1871:210) above the fowler's head (Fig. 9.3). When a bird settled on a perch the fowler pulled the snare (Best 1909:465-467; Buller 1877:192; Firth 1959: 154-158; Ranapiri 1895:146). Early morning and evening were the best times for snaring kaka (Downes 1928:26).

Kaka were also taken by the pae, or taki, method which involved tying one pole horizontally between two trees with a slanting pole attached that ran down to the ground. At the foot of the latter the fowler waited in a small thatched hut, in front of which there was a decoy bird, which attracted kaka down the sloping pole (Best 1909:468; 1942:198; Ranapiri 1895:147). Kaka were speared as well, generally while feeding on the fruits of maire, kahikatea, rata, hinau, miro and the nectar of the flax flower (Best 1942:198), and could also be taken by the drinking trough method (Beattie 1920:62).

The other main species present in the Lee Island sites (especially S131/4) is the parakeet. This was taken with the aid of a puaka, a koputa (shed) or by the pae method (Best 1908:246; 1942:319). The koputa was a small shed, inside which decoy birds were secured to perches (Best 1908:263; 1942:319-320). Parakeets attracted to the koputa were snared by a running noose on the end of a pole. The pae, or tanga kakariki, method used a rod between two upright poles which acted as a

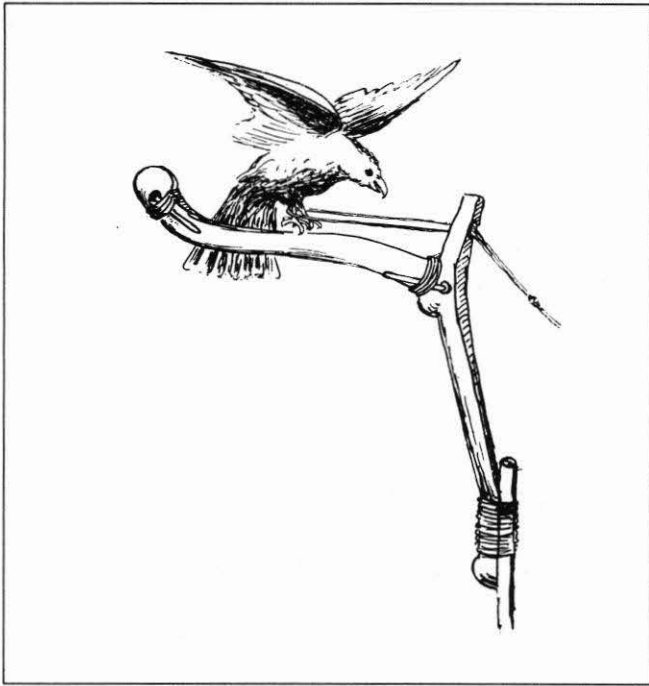


Figure 9.2. Mutu-kaka, showing the method of capture (Downes 1928:Fig. 18).

perch. Below the rod was stretched a cord to which decoy birds were attached. Their struggles attracted other birds to the perch, which were then clubbed (Best 1908:263-264; 1942:320-321; Ranapiri

1895:151).

So far as fowling techniques are concerned there was no evidence of mutu kaka or waka kereru at Lee Island, and not much evidence of possible snares. Only two or three of the knotted-fibre pieces could have acted as slip-knots, and they may have been used to tie bundles. It is possible, as well, that some of the knotted pieces are remains of the standing ends of snares from which the slip-knots were cut and burnt with the feathers of the captured birds. It is not clear from the literature whether we should expect snares to be present in camp sites if they were being used. They may have been made in the field as occasion demanded and discarded there when the birds were caught. However, there is evidence of the use of bird spears in the form of two bone points from S131/4.

Turning to seasonality, the nearest to direct evidence is the large number of probable male feathers of kakapo, indicative of a summer hunt. Since rata flowers spectacularly in mid-summer to autumn and the berries of miro (summer through winter), rata, kahikatea, hinau, rimu and matai (all summer to autumn) were also available in the vicinity of Lee Island (Fig. 9.4), and since all the common fowling methods were employed when the birds were flocking on these foods (above), it is highly likely that all the sites were occupied between December and April.

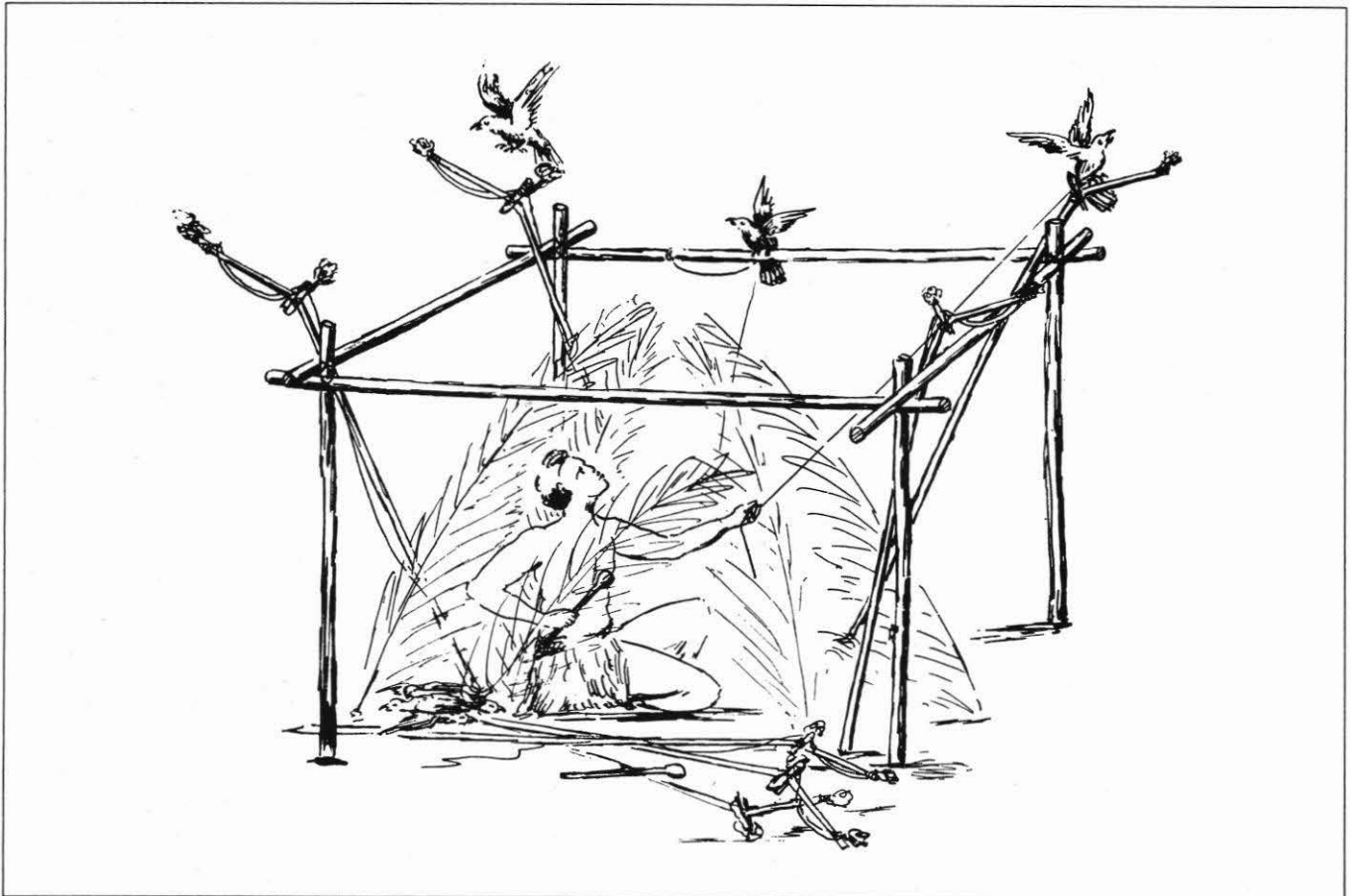


Figure 9. 3. Use of mutu-kaka and decoy birds with a hide (Downes 1928:Fig. 18).

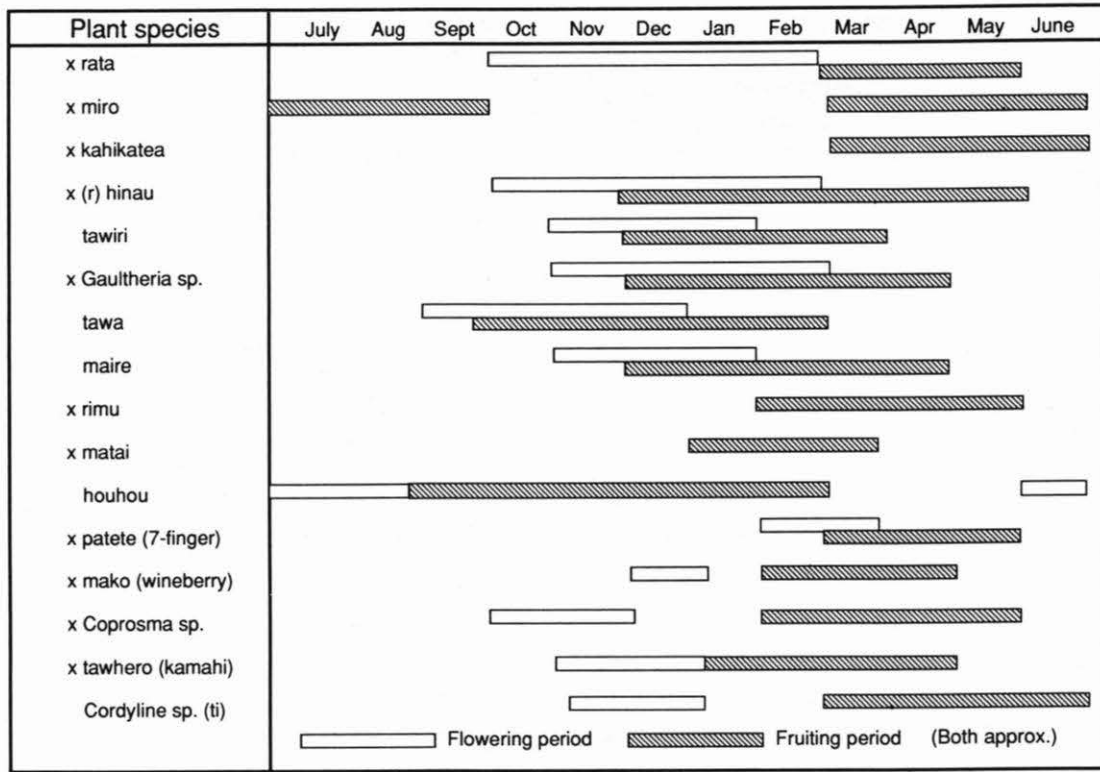


Figure 9.4. Recorded plant foods of forest bird species showing flowering and fruiting periods. x = the species found in the Lee Island, Safe Cove area, (r) = a related species found on Lee Island. Data from Allan (1961), Crowe (1981) and Wilson (1982).

PROCESSING THE CATCH

It is important now to consider whether the main intention of the fowling was to furnish food for immediate consumption, in which case the sites were probably occupied primarily for some reason other than forest fowling (e.g. transit camp for groups travelling to and from the Milford Sound bowenite sources or the south Westland or Wakatipu nephrite sources), or were largely intended as stations in which to preserve locally-caught birds for later consumption. These alternatives cannot be clearly separated, but the evidence is strongly in favour of the latter.

There is quite detailed historical evidence about the processes commonly employed to preserve larger forest birds such as kakapo, kaka, pigeon and tui (Best 1942:275; Downes 1928:9, 14, 26). The relevant points here are that the wing and leg extremities were often removed and buried while the fowler was still in the forest and feathers were burnt except for the tail feathers which were used to decorate containers in which the preserved birds were stored. At the camp the carcasses were spitted on long poles which were then attached horizontally to wooden frames standing before fires. The lines of spitted birds overlapped so that any fat extruded while they were cooking would run down and drip into a wooden trough below the bottom line of birds. From the trough, the fat was collected in a wooden bowl which was partly sunk into the ground (Best 1942:276; Firth 1959:164).

Once cooked, the birds were packed in containers, into which the melted fat was poured.

The finished products were known as huahua manu and would keep the flesh sound for several years (Firth 1959:164). Container types varied around the country from calabashes in parts of the North Island (Best 1942:278-282; Downes 1928:16-19) to kelp bags, or poha, in Murihiku. The latter were protected by a layer of bark strips and were sat in flax kits (Anderson 1983:21-22; Best 1942:285-286). Totara bark containers, known as patua, were also widely used (Best 1942:283-284; Downes 1928:10-12; Firth 1959: 153-154). The size of these varied from 300-450 mm² for silvereyes up to one m² for pigeon and kaka (Downes 1928:13). They usually had a tuft of feathers attached to indicate the species of bird preserved inside (Best 1942:282; Downes 1928:14).

Archaeological remains consistent with parts of this process were uncovered in all four sites. In S131/3 there was the rack and fired areas in front of it, suggesting a drying and, or, smoking function. Tussock and bracken fern in the site may have been used to produce smoke. The rack could have been used, also, to hang carcasses prior to their preservation. Best (1942:274-5) recorded that each day's take of birds was set aside until enough had been accumulated to fill several vessels. Hanging for several days also facilitated boning. Since the rack in S131/3 occupies most of the fairly flat part of the floor, and since other kinds of occupational debris were virtually absent, it is probable that the site served primarily as a place to dry or store birds or fish for the occupants of one of the other shelters, notably S131/4.

In the latter site, there was evidence of a small rack on the top terrace. In addition there were numerous bark strips, mostly of totara, many pieces of knotted flax and some cordage, a piece of a possible wooden bowl which might have been made on the site, and several bundles of feathers; all remains consistent with the preservation process. In S131/5 was the totara bark basket and further strips of bark, while in S131/6 were remains of a probable rack and a possible indication of food packaging in the form of manuka foliage inside netting.

Setting aside for the moment the argument about relative chronology, the disposition of evidence associated with the fowling process amongst the four shelters would fit an ethnographic model of domestic settlement patterns in southern New Zealand, as described by Anderson (1986a). At the muttonbirding camps it was usual to build a main hut for living in and smaller huts to each side, one for storage of gear and supplies, and another for the storage of the catch. It would be hardly surprising if the inhabitants of Lee Island, who were on another fowling trip, chose to use the set of shelters in a similar way, with S131/4 as the main domestic area, S131/3 as the place to accumulate and dry birds, and S131/5 and S131/6 as places to store containers and other gear, including valued nephrite articles. At present, however, there is no way of determining whether this proposition provides a better hypothesis than the argument that the two main sites, S131/4 and S131/6, were occupied at different times.

OTHER ACTIVITIES

Compared to that for fowling and associated preservation of birds, the evidence of other activities in the Lee Island shelters is relatively minor. Subsistence resources also included one or two dogs, some shellfish and a few fish. The lack of fishing implements (eel baskets, netting (the piece in S131/6 has a mesh too wide to take eels), fine lines, hooks) indicates that the scarcity of fish remains is a fair reflection of the relative unimportance of this activity. In S131/4 there were frayed pieces of fern root which might have been chewed, but no other indications of fern root gathering or preparation such as bundles of roots, or beaters, and there was no evidence of the consumption of any other plant foods.

The evidence of woodworking suggests two kinds of activities; rudimentary chopping to length and shaping of stakes (the stake end, chopped stem), probably for racks or similar artefacts, and carving of totara (most of the woodchips, the core, drilled piece, and possible bowl fragment). The firesticks were almost certainly brought into the site. There were no drill points or files which means that the bone artefacts were probably brought to the sites in a finished form as well, and the paucity of flake implements also suggests that intricate wood and

bone working was not a significant activity. Similarly, there was very little evidence of stoneworking. Adzes were mostly brought to the site in a finished, if sometimes damaged, state. Tools of manufacture or refurbishment - a hammerstone and grinding stone - were found in S131/6, along with a large roughout, but there was little evidence that they had been used.

Bark and fibres, mainly flax, were certainly worked at Lee Island, although it is impossible to be sure that the basket was actually made on site. There are no remains of artefacts in these materials which can be associated with activities other than fowling and ancillary tasks, except for the cloak. That, however, was clearly well-worn and had been brought into the site. How it came to be largely burnt is not clear, but several other partly burnt articles nearby, including the chopped stake, suggest that a fire got out of control in S131/4, possibly after the occupants left. There were pieces of a light, vesicular, charred material, amongst partly burnt feathers around the margin of the fireplace on the middle terrace, and we think that this represents masses of fully-burnt feathers - which might, in turn, suggest how the fire spread to nearby wood and a discarded cloak (or possibly only part of a cloak, since there did not seem to be enough remains to represent the complete article).

DURATION OF OCCUPATION

The limited range of activities and the emphasis on one, fowling, suggest that the Lee Island shelters were occupied for only short periods of time. One way of broadly estimating the duration is by calculating the total food value of the resources used in the sites and comparing it with the requirements of a hypothetical group of occupants. Multiplying the MNI of the bird species in S131/4 by the following mean adult liveweights: kakapo = 2500 g, pigeon = 750 g, kaka = 600 g, ducks = 600 g, petrels = 200 g, and parakeets = 60 g (and assuming 27 kakapo), produces 111.93 kg of these birds. To them we can add one dog (10.0 kg), two fish (2.0 kg) and five additional birds (2.0 kg), for a total of about 126 kg liveweight. We can assume that 70% of this was edible, i.e. 88 kg.

Calculating the food value of 100 g of flesh as 176 kcal for birds, 126 kcal for dog and 100 kcal for fish produces 150,582 kcal of edible flesh (species weight and food value data from Smith 1985:Appendix 8, and references in Chapter 6). For a family comprising an adult male and female, an older child and an infant the mean daily requirement is 2050 kcal per person, under light work load conditions (National Academy of Sciences 1980:23). The food represented in S131/4 would provide, at these rates, 73 man-days subsistence.

How this translates into actual subsistence duration depends upon further assumptions about how much of the food was eaten on site and by how many people. A reasonable range might be regarded

as: one small family (say five people) eating all the food represented = about 15 days occupancy, to the same number of people eating about half the food and taking the remainder away = about one week of occupancy. The variables can be juggled about in several ways, but the result, clearly, is a very short period of occupation. The same basis of calculation produces about nine person-days of subsistence at S131/6 and seven person-days at S131/3, which, for a small family and assuming that some food was taken away, would mean that they were virtually single overnight camp sites.

There is additional archaeological evidence from Lake Te Anau which indicates that transient camps, probably intended mainly for preservation of birds, were fairly common in the area and that the activity was long established. The Takahe Valley site, now thought to date to about the 12th century (Anderson 1989) was a small fowling camp at which a *Megalapteryx didirius* moa was butchered along with various small birds. A bundle of weka feathers, a fire-stick and a plaited flax sandle are items similar to those at Lee Island. On Cumbrae Island, in Middle Fiord, a small rockshelter (site S140/4) contained a large walnut-shaped wooden bowl (700 x 330 mm) with a spout at each end, while on Long Island there is a large Hall's totara (site S140/5) which has had a rectangular strip of bark measuring 1080 x 230 mm removed from it (Williams 1982). Also in Middle Fiord, a rockshelter site (S140/6) contained a perforated bark strip (probably matai), other strips of bark and a totara bark container (Williams 1982). Similar finds have been uncovered at Lake Manapouri (Anderson 1982b; Coutts 1970; McGovern-Wilson 1985). The fact that many of the sites are on islands may reflect the relative freedom of these from the heavy infestation of sandflies which, elsewhere about the lakes, makes occupation distinctly uncomfortable.

THE SETTLEMENT PATTERN CONTEXT

The question of how the Lee Island and similar sites were incorporated within a wider district or seasonal settlement pattern has two aspects which need to be addressed here: where did the people come from, and how was forest fowling at Lee Island fitted into an economic system? Traditionally, Lake Te Anau formed part of the routeway from Foveaux Strait to the bowenite sources in Milford Sound and to settlements at Martins Bay and elsewhere on the southern West Coast (see Cowan 1905; Duff 1952; Park 1922). There was also access through the Upper Eglinton and McKellar valleys to nephrite sources in the Lake Wakatipu watershed (Beck 1984). Some of the stone sources listed in Chapter 3 suggest that the people who occupied Lee Island had, indeed, been travelling parts of this routeway: there is a variety of material from Foveaux Strait and western Southland sources, and nephrites from the Wakatipu district. Central and inland North Otago sources are also quite well

represented, however, and it is possible that the immediate origin of the Lee Island people was not Foveaux Strait, but some other place along the routeway where more material from various inland sources of stone was accumulated than at the coastal settlements. Ngai Tahu traditions suggest the former existence of small villages at the foot of the main lakes, including Te Anau, and some of them were occupied for at least a year at a time into the early 19th century (Anderson 1982b; 1986b). At the mouth of the Upukerora River, near the modern township of Te Anau, a probable village site was located by White (1893). Amongst remains of seven to 12 dwellings there were some early European artefacts but the settlement could still have been an old one extending back to the period at which Lee Island was occupied.

The integration of forest fowling, as at Lee Island, with a broader economic system is another matter which cannot be clearly determined. For some southern Maori communities, forest fowling was traditionally a winter-spring activity (e.g. the Ruapuke island people, Anderson 1981), but kakapo hunting in particular, and fowling for pigeon, kaka and parakeet were generally activities of the summer half of the year (Chapter 6).

How often they took place in the *Nothofagus* forests is a matter for conjecture, but it was probably not every year. Avian biomass and diversity are low in this environment (Chapter 1), and there were few compensations. Kiore (*Rattus exulans*) were recognised as a food resource, but catching them was an intricate and time-consuming business and it can hardly have been profitable except at those times, usually three to five years apart, when there was especially prolific seeding of *Nothofagus*, and consequent irruptions of rat populations (King 1984). Plant foods, as well, were of little significance in *Nothofagus* forest, though a few species, notably the katote tree fern (*Cyathea smithii*), were recognised as emergency foods (Leach 1969; Crowe 1981).

Beech forest thus became attractive to human habitation more or less in proportion to its penetration by stands of other forest types, notably berry-bearing podocarps, attractive to birds and people alike, and nectar bearing species such as rata. Even so, it was probably only in those years when rata flowering, in particular, was especially profuse, that expeditions to the *Nothofagus* forest were thought more worthwhile than fowling exclusively in the podocarp-broadleaf forests nearer the Foveaux Strait coast. The cost of travelling so relatively far was offset, we may assume, by the high value set upon preserved birds and, in addition, upon their brightly-coloured feathers (Anderson 1988). Perhaps kakapo skins, fashioned into brilliantly-green aprons and girdles for high-born women, as Ngai Tahu tradition recounts (Stack 1898:73), were most sought-after, and good booming years thus the time when the beech forest was especially attractive to southern hunters.

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