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EXCAVATIONS AT THE HAWKSBURN MOA-HUNTING SITE : AN INTERIM REPORT

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Introduction

The Hawksburn moa-hunting site lies beside the eastern tributary of the Hawksburn stream at an altitude of 660m in the Carrick Mountains of Central Otago. At this location, some 140 km in a direct line from Dunedin, Invercargill or Milford Sound, it is almost precisely in the centre of the southern South Island and probably, therefore, further from the sea than any other site in New Zealand. It is an unusually large site for one so far from the coast. Cultural evidence - mainly flakes of porcellanite and silcrete - extends over approximately 6000m^2 and a blackened soil, which marks the main occupational area, covers some 400m^2 near the stream.

Hawksburn was first brought to archaeological notice with excavations by an Otago Museum party in 1954 and 1955, but apart from brief summaries (Lockerbie, 1955, 1959) the results of these expeditions have never been published. More recently, Hamel (1978) has collated what little information was available and made some suggestions about the significance of the location of Hawksburn and other Archaic sites in Central Otago.

This report outlines the initial results from the fieldwork undertaken at Hawksburn in January and February 1979.

Why Hawksburn?

Archaeology in the southern South Island has been concentrated upon coastal sites and the paucity of the material recovered from the few excavations in the interior has served only to reinforce a certain pessimism about the attraction of this area for prehistoric occupation in general. In some measure this is a realistic point of view, since both archaeological and ethnographical information reveal the superior attractions of the coast for Maori settlement. At the same time, it is worth recalling that early reports of Central Otago mention not only the odd rock shelter, oven or patch of stone flakes, but also some sites of more impressive dimensions and contents (Murison, 1871; Hector, 1871; George, 1937; Hamilton, 1894; Gilkison, 1978).

There seems in fact to have been a group of about 6-10 sites comparable in size to the Archaic coastal sites, scattered across Central

Otago. Typically they were noticed as stream-side groups of oven pits surrounded by abundant moa-bone and stone debris. In their size and density of remains they stand out as potentially representing the apex of the settlement pattern structure in the interior, so that no reasonable assessment of the role of the inland regions in the prehistory of the southern South Island could be attempted in the absence of a comprehensive excavation of at least one of them. Unfortunately most of these sites have been severely damaged by mining or farming (e.g., Puketoitoi, Nevis (Schoolhouse Creek), Clyde, Cromwell, German Jack's) or had not been reported again since their discovery (e.g., the Old Man Range sites). Only one remained almost intact, and that was Hawksburn.

Research objectives and fieldwork

Given the almost complete lack of published details about the larger Central Otago sites, it was necessary to approach the investigation of Hawksburn with a broadly defined set of questions in mind. These were:

(1) When was the site occupied, how often and at what time of the year?
(2) What were the activities represented at it and what do they imply about subsistence and settlement patterns in the interior?
(3) What artefacts had been brought to or made at the site and what do these imply about technology and cultural affiliations?
(4) What might Hawksburn have in common with the other large sites of the interior?

In order to examine these various problems the fieldwork was organised at a number of levels. At the broadest, the level of the site in its surroundings, the basic techniques of locational analysis were employed in an attempt to establish, in practical terms, just how Hawksburn was situated in terms of access to main elements of the local landscape, and also to search for further sites which might have been connected to the Hawksburn settlement. At the next level, the site as a whole, systematic test pits (a total of $6m^2$) were excavated at 10m intervals over the whole site area, excluding excavated areas and the soil characteristics and cultural material from them was used to formulate a broad plan of the total site structure. The contents of various activity areas within the site and the stratigraphic and spatial relationships between them were examined by opening up a single excavation of $147m^2$ in the area where cultural evidence appeared most dense and varied. This excavation was divided into 5m x 5m squares and excavated and recorded by metre square and layer (or spit where the layer exceeded 10cm). Lastly, at the level of specific site components, a further total of $79.5m^2$ were excavated elsewhere in the site. These excavations included

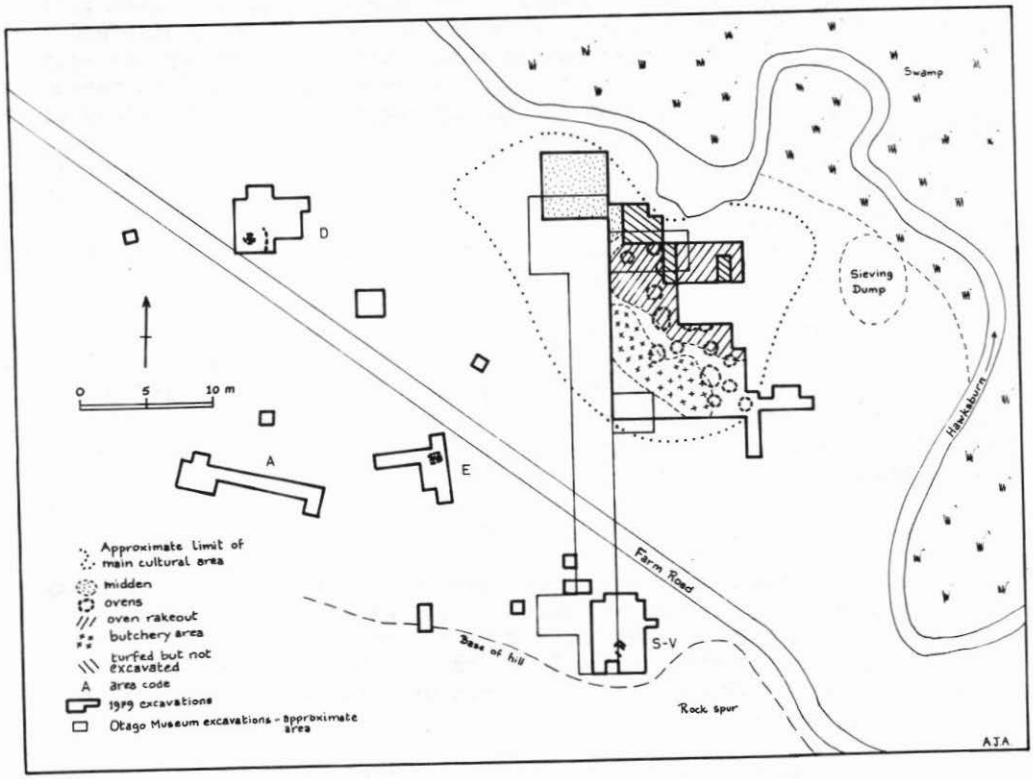

Figure 1. Plan of Hawksburn excavations showing main site components.

the testing of several conspicuously dense patches of waste flakes, an isolated black-soil area and localities where domestic structures were suspected. Including the test pits a total of 245.5m^2 was opened up of which 232.5m^2 were taken down to natural (Figure 1).

Location

The question of why Hawksburn is situated in such an apparently remote spot is one of the most intriguing problems concerning the site. On the face of it, the likely influential variables seem to be quite straightforward and may be defined, following Hamel (1978), as: access to industrial rock resources, access to food resources especially moas,

and proximity to major prehistoric routeways such as those leading to the western nephrite sources. Hamel has argued that a number of the large Central Otago sites are situated along the zone of yellow-grey earths which appear to mark the lower limits of the prehistoric forest; assumed to have been the principal moa habitat. Particular site locations within or near this zone however, may reflect an accommodation to the other variables as well (Hamel, 1978:124). Now that we have some evidence from the fieldwork at Hawksburn, how well is this hypothesis supported?

If the location of Hawksburn was significantly determined by access to rock resources, one might expect this to be reflected both in proximity to porcellanite and silcrete sources - these being the main rock types used - and in evidence of the initial stages of stone tool manufacture, such as large cores and primary trimming flakes (including flakes with cortex). In fact, cores and large flakes are extremely rare in the site, no porcellanite sources are known at present in the Carrick Range and the nearest silcrete deposits lie some distance away near the confluence of the Hawksburn and the Fraser River (Figure 2). On the other hand, the proportion of finished tools appeared to be unusually high and our general impression was that partially prepared tools rather than blocks of raw material had been brought to the site, finished, used and discarded there. In other words, access to stone sources and the opportunity for manufacture seems to have been a much less important locational factor than the purpose for which the finished tools were intended.

The question of proximity to routeways is a more subtle one for it is not immediately apparent how close a site would have to be a known or postulated route in order to conclude that such proximity could have been a significant factor of location. Hawksburn is certainly situated at about the midpoint of a possible route which traverses high saddles from the upper Fraser to the east and the upper Bannockburn to the north (Figure 2). Yet at best, this could only be considered an offshoot of the main Fraser-Bannockburn route - where there was once a coaching road - which offers an alternative to negotiating the difficult Cromwell Gorge. The fact that Hawksburn lies well back in the hills from this potential routeway suggests that some other factor was rather more influential in its location.

In terms of access to food resources the location of Hawksburn appears, in some ways, readily explicable, but in others, as elusive as ever. If moas were mainly to be found in the prehistoric forest, especially along its lower edges and if, in the more humid conditions of 600 years ago, this lower edge stood at 750 - 800m above sea level, then the altitude of the site, at about 660m, is reasonably close

and the necessity for locating the site well back in the hills is understandable. Unfortunately, at least two objections may be raised: why is the site not higher up in the hills to ensure that more than about 30% of its 2 hour catchment area (Figure 2) would have been in the best hunting zone and why, if areas well below the altitude of the site were in comparatively low moa-density zones, should Hawksburn be located with such apparently good access to them over the high saddles to the north and east of the site? There is no evidence to suggest that the forest ever stood lower than the altitude indicated above and alternative locational reasons, such as access to textile resources like Celmisia spp., are a long shot to say the least. The archaeological evidence from Hawksburn, as we presently know it, strongly supports the view that it was a moa hunting site and very little else.

Looking at the location of other moa hunting sites and of natural deposits of moa bone elsewhere in Central Otago however, raises the possibility of a different pattern of moa hunting to that implied by Hamel (1978). Within the Hawksburn area (Figure 2), and elsewhere, natural moa remains are scattered across all the environmental zones from valley bottoms to uplands and so too are the moa hunting sites. Thus while Hawksburn and Nevis may lie close to an ancient forest boundary, Puketoitoi (at 450m) would seem to be well below it and reported midden sites at Clyde (circa 180m) and possibly Cromwell (circa 250m) can have had no connection with it at all. Conversely, the sites discovered on the Old Man Range by Hamilton (1894) may well lie well above the ancient forest zone at perhaps 1200-1500m above sea level.

If moa hunting was the principal locational factor of all these sites, and that remains to be demonstrated, then the suspicion is raised that moas were rather less bound to the prehistoric forest habitat than is now assumed and may even have exhibited a 'transhumant' seasonal pattern; perhaps moving down to the valleys in the early winter and back up through the forest, following the rising flush of new growth in the spring. Although we entirely lack such basic ecological evidence, a pattern of this kind might make better sense of the distribution of both natural and culturally-derived moa remains than models which suggest a more restricted forest-habitat preference.

Whatever the case, the status of Hawksburn as primarily a moa hunting - rather than a transit or tool-manufacturing - site seems clear and that conclusion raises the further locational question of why the site is found where it is in the Hawksburn Valley. Hamel (1978:119) has suggested that the rocky spur beside it may have provided a convenient point from which to ambush moas, although it would not seem to have any advantage in this respect over several other such points nearby and it rather begs the question of how moas were hunted.

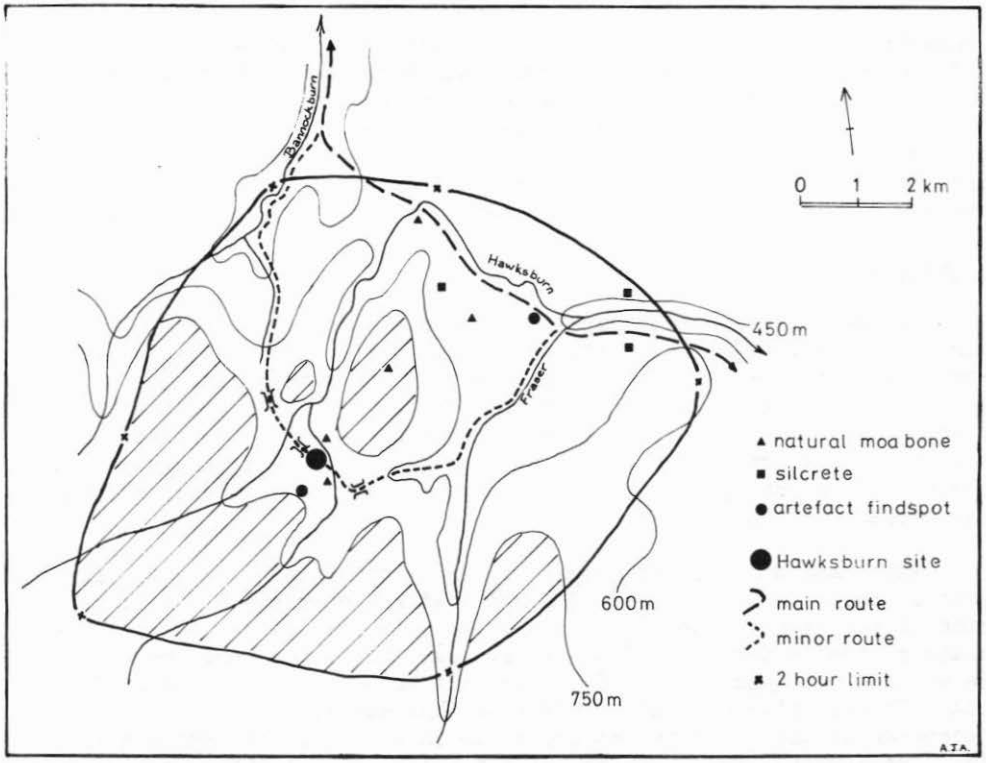

Figure 2. Location of Hawksburn site.

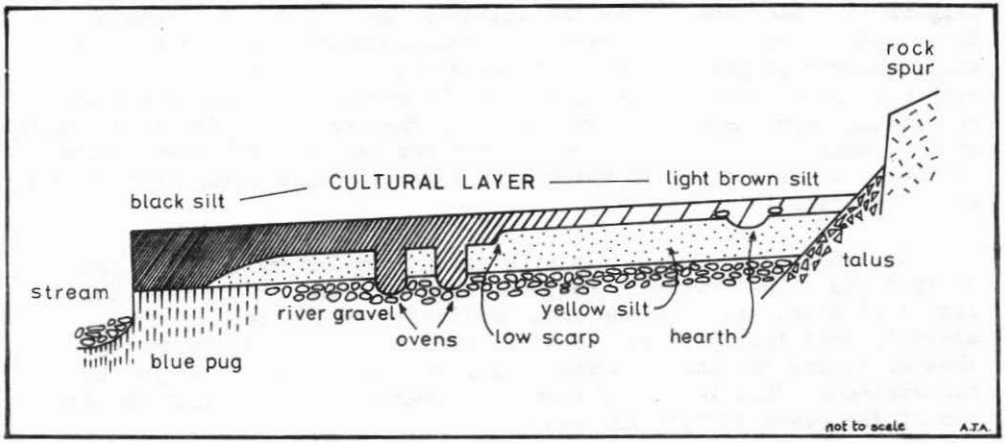

Figure 3. Schematic cross-section of stratigraphy.

Lockerbie (1959:85) suggested that the site was situated on the driest and flattest area in the valley and that is certainly true, although whether it was these qualities rather than the existence of an extensive 'floor' of silt in which to carve ovens and hearths cannot be determined. A third possibility is that its position at the mid-point on a direct line between the low saddle from the western branch of the Hawksburn and the saddle leading into the Fraser, may also have significance.

Stratigraphy

Hawksburn is a stratigraphically simple site. Through a smooth, gently-sloping, yellow silt 'floor', crossed by a discontinuous low scarp, a series of ovens have been cut near the stream into the underlying river gravel. Further away from the stream are several small scoop hearths with stone kerbs and immediately beside the stream, the yellow silt lenses out to be replaced by blue pug. A single cultural layer for the most part, overlies the yellow silt and is deepest beside the stream (Figure 3).

There are minor stratigraphical variations within the cultural layer. These include lenses of mixed silt and charcoal around the rims of the ovens; lenses of silt often with patches of charcoal beneath in the deeper part of the layer near the stream, and two cases in which a 5cm thick layer of yellow silt caps ovens and thus seals the cultural material within them from that above. With the possible exception of this last variation, there is no reason to conclude from the stratigraphy that anything but a single cultural phase is represented.

Spatial organisation of the main site area

The layout of the site is more complex than the stratigraphy (Figure 1). Near the stream the cultural layer is black, contains large quantities of schist ovenstone fragments and charcoal and very small amounts of moa bone or cultural stone. The silt lenses, often with a charcoal patch beneath, may be the result of cleaning out and re-cutting previously used ovens and together with the general character of the layer in this area suggests that the eastern, streamward portion of the site was a place in which oven rakeout and refurbishment debris was deposited.

Immediately south of this area is the jumbled relief of a band of 18 ovens. The irregular shape of some of them and the fact that lenses of mixed silt and charcoal partially overlie many of them, suggests that this area was used repeatedly for cooking, although whether during the same continuous occupation or not cannot yet be ascertained. What length of time is represented by the silt cap over two of the ovens is also unknown.

Running across the southern part of the oven area in a 2-4m band is a concentration of unburnt moa bone, stone tools and flakes. This generally abuts the low scarp, but occasionally spills up over it. Amongst the moa bone, rib fragments appeared to be particularly numerous and the band has been provisionally interpreted as a butchery area.

In the streamward western portion of the site is a dense midden of highly burnt and fragmented moa bone. This is 20-40cm thick and is clearly demarcated from the other site components, in which burnt bone is extremely rare. The midden contains numerous waste flakes and few stone tools, while pressed into the silt beneath it are patches of unburnt moa and dog bone. Amongst the former, tracheal rings, vertebrae and phalangeal fragments are noticeable and indicate that the moas were probably captured near the site. Other than moa and dog bone there are a few bones of small birds, some moa eggshell and a few fragments of freshwater mussel shell.

One of the interesting puzzles posed by the layout of the components in the main site area is how the burnt bone midden came to be so clearly separated from the other debris. It is unlikely that the bone was burnt in the ovens where there is evidence of in situ firing since that would imply that the burnt bone was separated out from the charcoal and ovenstone fragments quite deliberately and the two types of debris dumped in separate places. Besides, a number of the ovens contained large unburnt bones and fragments but none contained burnt bone except for the odd fragments. The ashy matrix of the midden and the completeness of the burning suggests rather, that the bones were carbonised in a very hot open fire. Yet this cannot have been in the excavated part of the midden because there are some unburnt bones included and a scatter of unburnt bone beneath, with no partially burnt bone between. Thus, it would seem that while some bones were discarded in the ovens, presumably after being stripped of cooked flesh, most were taken to somewhere outside the excavated part of the site, burnt in an open fire, and raked or spilled back into their present position.

The only speculative explanation I can offer is that perhaps two processes were occurring: the jointing and cooking of some carcasses for immediate consumption and the butchering out of others to obtain meat for preserving, after which the fresh bones were deliberately burnt (perhaps to obtain oil?). In support of this suggestion it may be noted that burnt bone was also common at Waitaki Mouth (Anderson, n.d.), apparently another specialised moa hunting site, whereas it appears to have been comparatively rare in the contemporary sites which exhibit a broader subsistence base, such as Papatowai and Pounawea. It would be interesting to know whether a high proportion of burnt moa bone is also found at others of the large east coast (South Island) moa hunting sites where the preparation of preserved, perhaps dried, moa flesh might also be expected.

The hearths

Considerable difficulties were experienced in finding evidence of domestic structures, since there are no surface indications on the site. Initial investigations were concentrated in area S-V (Figure 1) where it was suspected the Otago Museum expeditions had found their 'hut' site. Here a number of pieces of obsidian, adze fragments, a small argillite gouge and a piece of worked nephrite - all scattered around a patch of schist slabs - looked suspicious but not convincing. Various test pits and trench A were then opened up, the latter across the largest patch of surface flakes, but to no avail.

It was only in the last week of excavations that a chance find of obsidian flakes, otherwise very rare in the site, led us to the location of a hearth at area D. Within the scoop hearth, amongst the kerbstones, and scattered nearby, were numerous adze fragments, sandstone rubbers and an argillite gouge. In addition, within the hearth, were some 70 fragments of at least 6 small ivory necklace reels. No postholes were located and the only clue to the structure of a possible dwelling lies in the quarter circle of boulders to the east of the hearth which may have tied down a freestanding textile, skin or brushwood tent.

Reasoning that the evidence of area D was so similar to that of area S-V that both represented living sites and that it was characteristic of moa hunters at the east coast sites (Shag Mouth and Waitaki Mouth, at least) to align their houses in rows, we proceeded to the mid-point and located the hearth in area E. This was also a scoop hearth with stone kerbing and again, no postholes were found.

The artefacts

As yet, little can be said of the artefacts because the basic sorting, identification and analytical procedures have only just begun. Impressions gained during the excavation however, would suggest that we recovered about 300 whole or broken tools fashioned from large silcrete blades - four are shown in Figure 4. One striking feature of these was that many appeared to have been constructed from blades which had been previously snapped to a suitable length rather than the blade snapping after the tool had been finished. Porcellanite, probably the most common flake material, was seldom found in blade form and the artefacts made from it usually approximated either a chopper or a scraper form.

Most of the adze fragments, representing perhaps 50 implements, appeared to have come from small quadrangular cross-sectioned types and many of them were fashioned in argillites which in hand specimen seem characteristic of the Foveaux Strait sources. One fragment of an

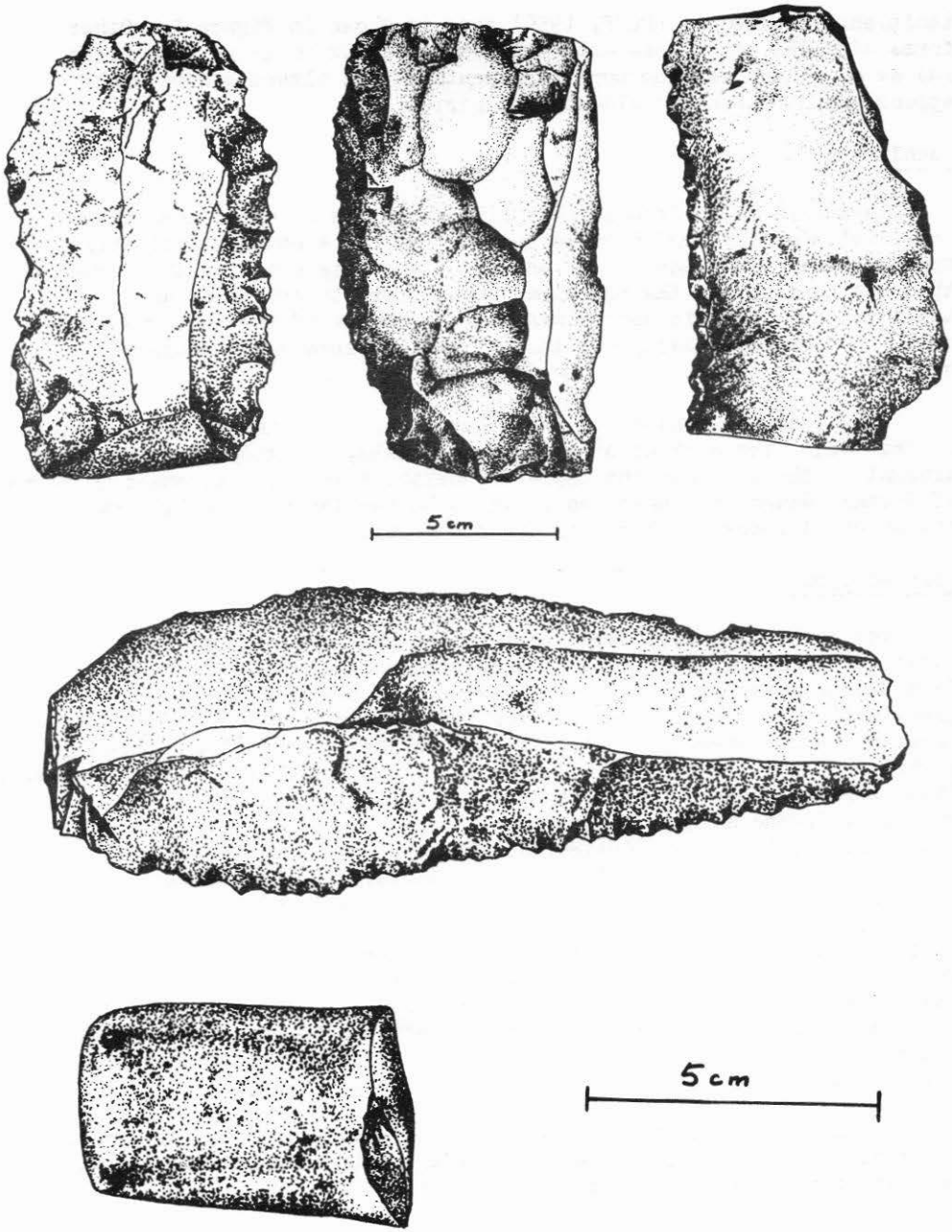

Figure 4. Above: artefacts fashioned from silcrete blades, probable heavy butchering tools. Below: silcrete knife(?) and butt of 1A type adze.

incipiently horned 1A (Duff, 1956) type is shown in Figure 4. Other forms of stone tools were extremely rare; a few small gouges, files and awls. There were no bone implements at all although some might appear when the bone is cleaned and sorted.

Conclusions

Hawksburn is an Archaic camp site which was occupied more than once, but probably for short periods and within a comparatively brief span of time. The location of the site is consistent with the argument that moa hunting was the principal reason for its existence and both the layout of the site components and the nature of the contents supports the view that nearly all the activities represented there were bent to this purpose.

The times and seasons of the occupations, the classes and functions of the tools, the sources of the raw materials, the species and numbers brought to the site and the place of Hawksburn in the settlement patterns of Archaic Otago are questions still to be tackled when our analyses of the material recovered begin to produce results.

Acknowledgements

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