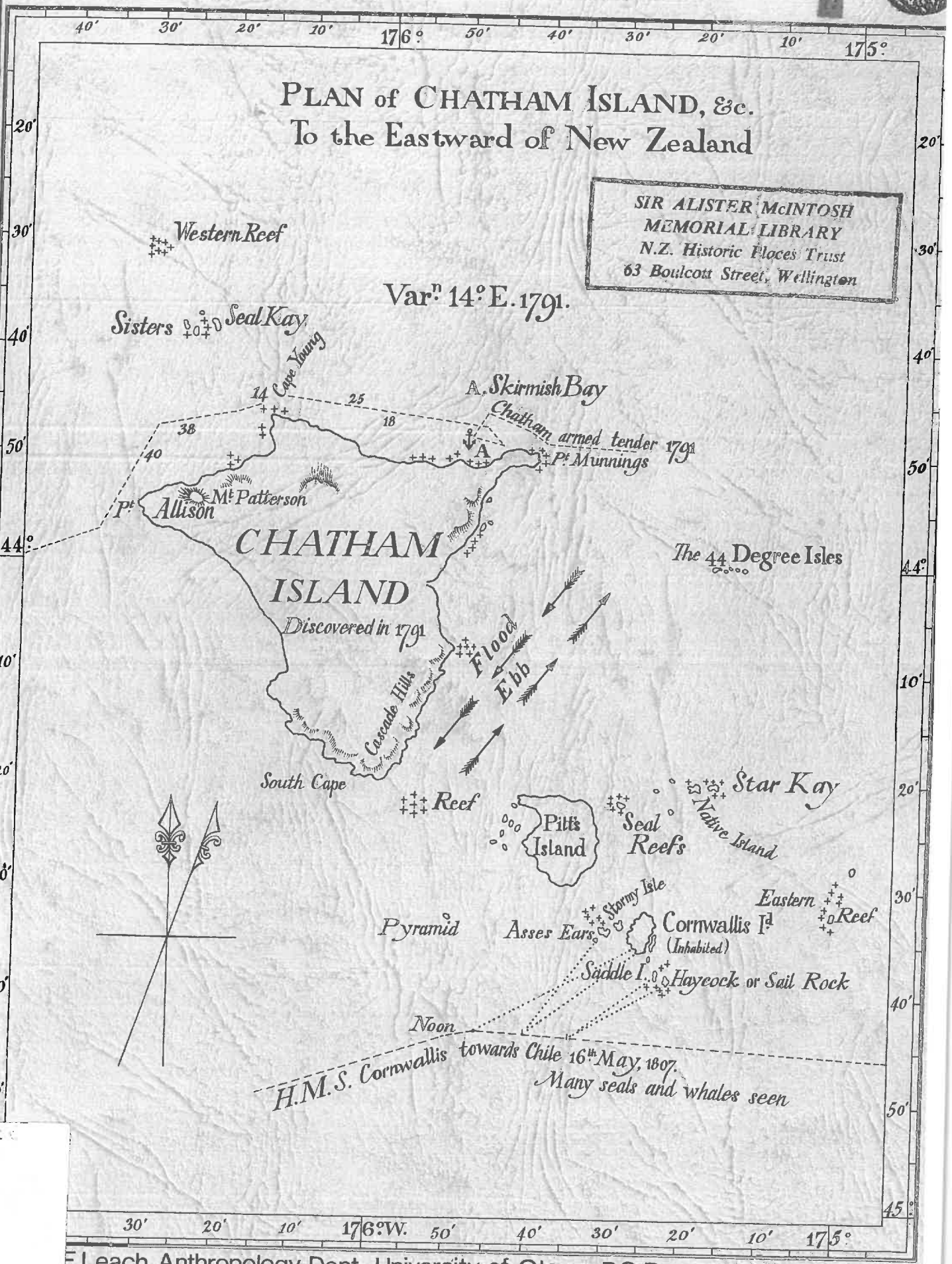
WORKING PAPERS IN CHATHAM ISLANDS ARCHAEOLOGY 10



Working Papers in Chatham Islands Archaeology 10

The Archaeology of the Little Sister, Chatham Islands

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Foreword

This paper describes the surface and subsurface archaeology of an albatross colony. A fuller paper including charcoal identifications, radiocarbon dates and identifications of flake material will follow. However, readers may find this interim report interesting. There are, after all, very few places in which prehistoric man was able to take the Diomedea sp. birds at their breeding sites.

My thanks are due to Chris Robertson for salami and chocolate, to Bunbun Poki and the crewman of the Lady Caroline for turbulent but welcome transport and to the Maori owners of the Little Sister resident in the Chathams for allowing me access.

D.G. Sutton

Hon. Editor

Earlier papers in the series are:

1. Smith, I.W.G. and P. Wernham, "Survey of Archaeological Sites: Te Awapatiki to Hapupu, Hanson Bay, Chatham Island". 1976.

2. Weiss, Dr B. (translated K.J. Dennison). "More than Fifty Years on Chatham Island". 1976.

3. Park, G.S. "The Dendroglyphs and Petroglyphs of the Chatham Island". 1976.

4. Houghton, P. "The Human Material From Waihora"(CH.283). 1976.

5. Sutton, D.G. "An Alternative Research Strategy for the Study of Prehistoric Human Skeletal Remains". 1977.

6. Hamel, G. "Vegetation and Archaeology on Chatham Island". 1977.

7. Smith, I.W.G. "Prehistoric Fur Seal Exploitation on the Southwest Coast of Chatham Island". 1977.

8. Nugent, T.D. "Prehistoric Shellfish Gathering at Waihora, Southwest Coast, Chatham Island". 1977.

9. Walters, M. "An Examination of the Literary Evidence for the Existence of Discrete Groups of Moriori in the Chatham Islands in the 19th Century". 1977.

Further titles are in preparation.

The Archaeology of the Little Sister, Chatham Islands

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Abstract:

Substantial surface evidence, including stone-lined platforms, was found during a recent expedition. The results of four small excavations are reported.

Introduction:

The Sisters group consists of three small islands situated 15 miles northwest of Chatham Island, see Figure 1. The largest of the islands is only 4 acres in area and is very steep sided. Landing is possible at only two places and even there optimum sea conditions are essential. The Little Sister is smaller but more accessible. It has just over an acre of flattish land, again cliffed on all sides. Landings may be made most easily on the Northwest but when sea conditions demand the southwest and northern points are also workable, see Figure 2.

The third island in the group is known as Seal Reef or Seal Kay. It is east of the other two, approximately 500 metres from the Little Sister. High seas break over most areas of the reef. The highest point is only 3 metres above sea level. There is no vegetation and no nesting birds but the New Zealand Fur Seal (Arctocephalus forsteri) abounds. A count of 582 was made in November, 1972

(Wilson, 1974: 200-201).

The vegetation of the two larger islands is predictably composed of tenacious salt-tolerant species. Cotula featherstonii is dominant on the flat soil-covered land in the middle of the island. A range of species occurs in cracks and gullies on the steep rocky slopes. This includes low grasses (Festuca coxii, Scirpus cernuus, and Carex trifida), tufted ferns (Apslenium flaccidum, Blechnum durum), low herbs (Geranium traversii, Tillaea moschata, Dichondra sp.), a chenopod (Rhagodia triandra) and a crucifer (Lepidium oleraceum). The small rosette daisy (Senecio radiolatus) grows where shelter allows. The succulent (Disphyma australe) is particularly conspicuous on the steeper slopes and the sheer cliffs above the splash line. Hebe chathamica makes a modest appearance as a flat creeping plant covering generally leeward rocks with a dense mat of foliage and some quite thick stem wood up to 2 cm in diameter.

Despite the difficulties in landing, the distance to the safety of Chatham Island and its bleakness, the Little Sister was visited during the prehistoric period. The Moriori people undoubtedly went there to exploit the albatross colony. The colony is currently producing circa 400 Northern Royal Albatross (Diomedea epomophora sanfordi) chicks per annum. Most of these young birds weigh between 10 and 15 kilogrammes just before they fly about September-October. This is the time at which they are most likely to have been taken, specifically about 200 or 240 days after hatching when the earlier fat concentrations in the

body are reduced prior to flight. This conclusion is supported by accounts of birding in the historic period collected by C.J.R. Robertson (pers.comm., 1976).

In terms of meat weight availability in the spring this colony, and the less accessible ones on the Big Sister, the Fourty-Fours, and the Pyramid, see Figure 1, must have rivalled exploited seal colonies. Smith (1977: 67-78) has produced some interesting comparative information from a prehistoric seal midden on the Southwest coast of Chatham Island.

Several edible bird species, other than the albatross, breed on the Little Sister. Most conspicuous are the Northern Giant Petrels (Macronectes giganteus halli) which nest about September-October and may therefore have been taken systematically when the albatross were sought. Buller's mollymawk (Diomedea bulleri) arrives to nest as many of the albatross chicks are leaving and may therefore have escaped regular predation. Other relevant species are the Fairy and Broad-billed prions (Pachyptila turtur and P. vittata vittata respectively), the White-fronted Tern (Sterna striata) and the Sooty Shearwater (Puffinus griseus). Bones of each of these species have been identified in excavated midden sites on Chatham Island (Sutton and Marshall, n.d.). These species, however, are unlikely to have been of much interest to the prehistoric birders who went to the Sisters. There can be little doubt that their principal interest was in albatross chicks.

The Sisters group therefore is remarkable in the

archaeological view for the large seasonal concentration of highly sought-after food which occurred there during the prehistoric period. The albatross colony is of major current interest to ornithologists. C.J.R. Robertson is engaged in a research project on the southern islands albatross. Clearly the population history of the Little Sister colony may have been substantially affected by human predation. The interpretation of any archaeological evidence on the colony is therefore important to the ornithological research. The recognition of the dual importance of this evidence, to the attempt to assess the history of the albatross population on the island and to the archaeological problem of documenting Moriori exploitation of the albatrosses, led to a trip to the Little Sister in September, 1976 by the writer (N.Z.H.P.T. Permit 1976/18) and C.J.R. Robertson.

The objectives of the fieldwork were to:

a) record all the surface evidence of prehistoric occupation

b) date the earliest available evidence of man's presence

c) to assess the frequency of pre-european visits

d) to collect pollen samples for analysis.

The density and range of plant species present may be affected by bird numbers because the albatross use plant material in nestbuilding. The present Cotula sp. cover is very sparse, possibly because of the very high density of nesting birds. This modern bird density may be the result of the relatively recent breakdown of prehistoric Moriori birding which may have controlled but

not threatened the population. The interpretation of the archaeological evidence in terms of this and several other possibilities will be undertaken by C.J.R. Robertson.

Results:

Man-made flakes have been found on the island by successive expeditions. Most of these are made of a chert which occurs as small pebbles exposed on the winnowed soils of the island. Chert also occurs in the volcanic breccia. One particularly large piece was seen just above sea level on the Southwest landing but could not be retrieved. A smaller piece was removed from the breccia at the top of that landing. This sample has been examined by W.A. Watters, Geological Survey, Wellington (Robertson, pers.comm., 1976).

A number of deflated firesites can be seen on the flattish land in the middle of the island. Their locations are shown in Figure 2. Several burnt stones were found without cultural associations just northeast of the Camp Site (see Figure 2).

Other cultural evidence found includes a wooden waadi or birding club found in Buller's Cave by Logan Bell in 1969. Unlike other waadi found on the Fourty Fours and the Pyramid, which have been whittled out of sawn plank timber, this important example may be prehistoric. Although eroded it has a 'Polynesian form' and appears to be made out of the strong yellow heart wood of the ake-ake (Olearia traversi). However, these judgements are tentative and should be reconsidered by specialists.

Several of the many caves or overhangs on the

Little Sister still contain evidence of occupation. The smallest of these, Cave A, is near the Southwest point of the island, see Figure 2. The cave is 1.70 metres high, 3 metres wide at the entrance and 3 metres deep. We found a thin layer of charcoal in the southwest corner of the cave while preparing to camp there.

The major line of caves occurs along the western margin of the Landing, see Figure 2 and Figure 3. The line along which the Main Dome and the Landing meet is overhung and provides shelter from the strong prevailing southwest weather. There are four occupied terraces and one occupied cave in this line, see Figure 3.

Buller's Cave contains a thin eroded cultural deposit which has been disturbed by water, nesting birds and desperate Wildlife Officers seeking refuge. The deposit covers only half of the cave floor. A water trough, 30 by 17 cm in area and approximately 15 cm deep, has been cut into the soft rock floor of the overhang just below Buller's Cave. It is very probably prehistoric and can still be used as a source of clear fresh water. It acts as a sediment trap and storage tank. There are Moriori petroglyphs on the south or back wall of Buller's. Although fairly water worn at least four separate figures can be seen. These are very much in the style of the Te Ana-a-Nunuku frieze at Moreroa on Chatham Island which have been studied recently by Park (1976).

In 'Upper Buller's' 10 metres up the overhang line above Buller's Cave the remains of a small stone-faced terrace can be seen. Two large rocks lying in the

watercourse 1 metre from the base of the overhang have been used to form the basis of a small stone wall which has extended 2 metres north parallel to the overhang base and then been joined to the overhang by another short wall which now survives as a line of boulders but which would have been circa 80 cm high to match the side wall. The watercourse now runs straight through this feature and only a small pocket of the soft fill behind the wall remains, see Figure 4.

Platform A is 8 metres from the last feature and 6 metres higher above sea level. It is 2.5 metres long and 2 metres across. A large rock has dropped off the cliff above and much later a short wall between this and the base of the overhang was formed, see Figure 5. Flakes and charcoal found here attest to the prehistoric occupation of the platform.

Platform B is very similar. A very large long, thin rock off the cliff above was used as one side and most of the lower retaining wall of the platform. The gap of only 50 cm to the base of the overhang has been filled with smaller stones, up to 25 cm in diameter. This simple construction has produced a fairly flat area 7 metres long and up to 3 metres across, see Figure 6.

Platform C is the most remarkable of these structures. It is 4.20 metres long and 1.80 metres across. The walls on the north and east are made of small boulders, up to 40 cm in diameter. Most of the fill behind this wall is cultural. The surface of the platform is divided into 4 small flat rectangles by short boulder walls, see Figure 7.

The soft fills in these platforms would have been dry and fairly sheltered especially if the gap between the side wall up to the overhang was closed, in perhaps with seal skins. In short, aside from the bird fleas, these areas would have provided welcome relief from the harsh conditions in the open on top of the island.

Excavations:

Four small excavations were undertaken. These were limited by the time available, the objectives of the fieldwork and the physical problems which attend the Sisters.

The first excavation was in Buller's Cave. The only cultural stratigraphy left intact was a column 35 cm in diameter which was capped by a Buller's mollymawk nest (Nest 13). This was excavated to bedrock at a depth of 27 cm. A total of 21 layers were found. These were clearly separated by colour (red, black, and ashy grey-white et cetera) and contents which ranged from a black greasy ooze to dense vegetation similar to flax fronds, see Figure 8. Charcoal samples from these layers have been submitted for identification in view of the absence of any sizeable wood from the island. The samples will be submitted for radiocarbon dating. This stratigraphy may be best interpreted as representing 5 successive periods of occupation. The basis of this judgement is the opinion that the layers of compacted vegetation shown in Figure 8 have been deposited by the watercourse which runs over the deposit during and after heavy rain. They

establish Layer 1, its surface and the ash lens A as the most recent occupation which was prehistoric because of the presence of flakes, and absence of European material. The earlier occupation is represented by the material between Layers 2 and 5. Layers 9a to 6 represent the previous occupation. The thin but significant Layer 11 represents the third occupation in the cave. Layers 14 and 15 represent the earliest. The absence of these compacted vegetation layers from the Platform C stratigraphy, see Figure 9, supports the contention that they are water deposited.

The second and third excavations were 50 by 50 cm square at opposite ends of Platform C, see Figure 7. Flakes were found on the present surface and in several cultural layers below, see Figure 9. In both excavations II and III an interval of fill separated the modern surface from the next occupied layer. In excavation II a rectangular stone forming part of one of the transverse walls of the platform, was separated from the deeper cultural material by this fill. This suggests that these short walls were built after occupation of an area within the perimeter described by the two end walls and the long outside wall.

Seven cultural layers were found in Ex. II. The basal layer 10 consisted of a thin band of material weathered off the natural. The stratigraphy is most simply interpreted as representing a minimum of three successive occupations. In Ex. II these are represented by the modern surface which is the most recent occupation

and dated to the prehistoric by the flakes found upon it. The earlier occupation is represented by ash and charcoal layers above and including Layer 4. The third and earliest occupation is represented by the substantial Layer 8 deposit of black charcoal soil and the thin related ash layers. The Ex. III section is incomplete because our transport arrived to take us off the island during that dig.

The fourth excavation was out on the flat ground at the southern end of the Throne, see Figure 2. Pollen samples were taken at 10 cm intervals down a 60 cm section to bedrock. These samples have been submitted to Dr John Dodson, Geography Department, University of Canterbury for analysis.

Conclusion:

Substantial prehistoric evidence was found on this first archaeological investigation of a southern albatross colony. The stratigraphical evidence suggests successive short-term occupation. The substantial stone-faced terraces found probably represent survival technology; that is, the efforts of people forced to stay on the island to live comfortably in an exceptionally harsh situation. While this interpretation is debatable it gathers support from Robertson's (pers. comm., 1976) exhaustive collection of accounts of birding in the historic period. These usually describe small parties in open boats approaching the island in question, landing a couple of men then picking the chicks up after they have been killed, tied together in sizeable bundles and thrown

into the sea at a point from which they would be swept offshore.

If this pattern did pertain in the prehistoric period then the evidence on the Little Sister does indeed reflect survival technology.

Note:

Plant names used above are after Allan (1961) and Moore and Edgar (1971). Bird names are after Kinsky (1970). My thanks are due to members of the Illustrations Department, Otago Medical School, for their help with the illustrations.

Bibliography:

Allan, H.H. 1961 Flora of New Zealand (Vol. I) Government Printer, Wellington.

Kinsky, F. 1970 Annotated Checklist of the Birds of New Zealand Reed, Wellington.

Moore, L.B. and E. Edgar 1970 Flora of New Zealand (Vol. II) Government Printer, Wellington.

Park, G.S. 1976 The Dendroglyphs and Petroglyphs of the Chatham Island Working Papers in Chatham Islands Archaeology 3

Robertson, C.J.R. 1976 Scientific Officer Wildlife Service, Dept. of Internal Affairs, Wellington. Pers. Comm., 1976.

Smith, I.W.G., 1977 Prehistoric Fur Seal Exploitation on the Southwest Coast of Chatham Island
Working Papers in Chatham Islands Archaeology 7

Sutton, D.G. and Y. Marshall,
n.d., Prehistoric Bird Bone Assemblages from Chatham Island: an interpretation
Ms., Anthropology Dept., University of Otago.

Wilson, G.J., 1974 Distribution, Abundance and Population of the New Zealand Fur Seal (Arctocephalus forsteri).
M.Sc. Thesis, Zoology, University of Canterbury.

Figure: 1 The location of Sisters Islands

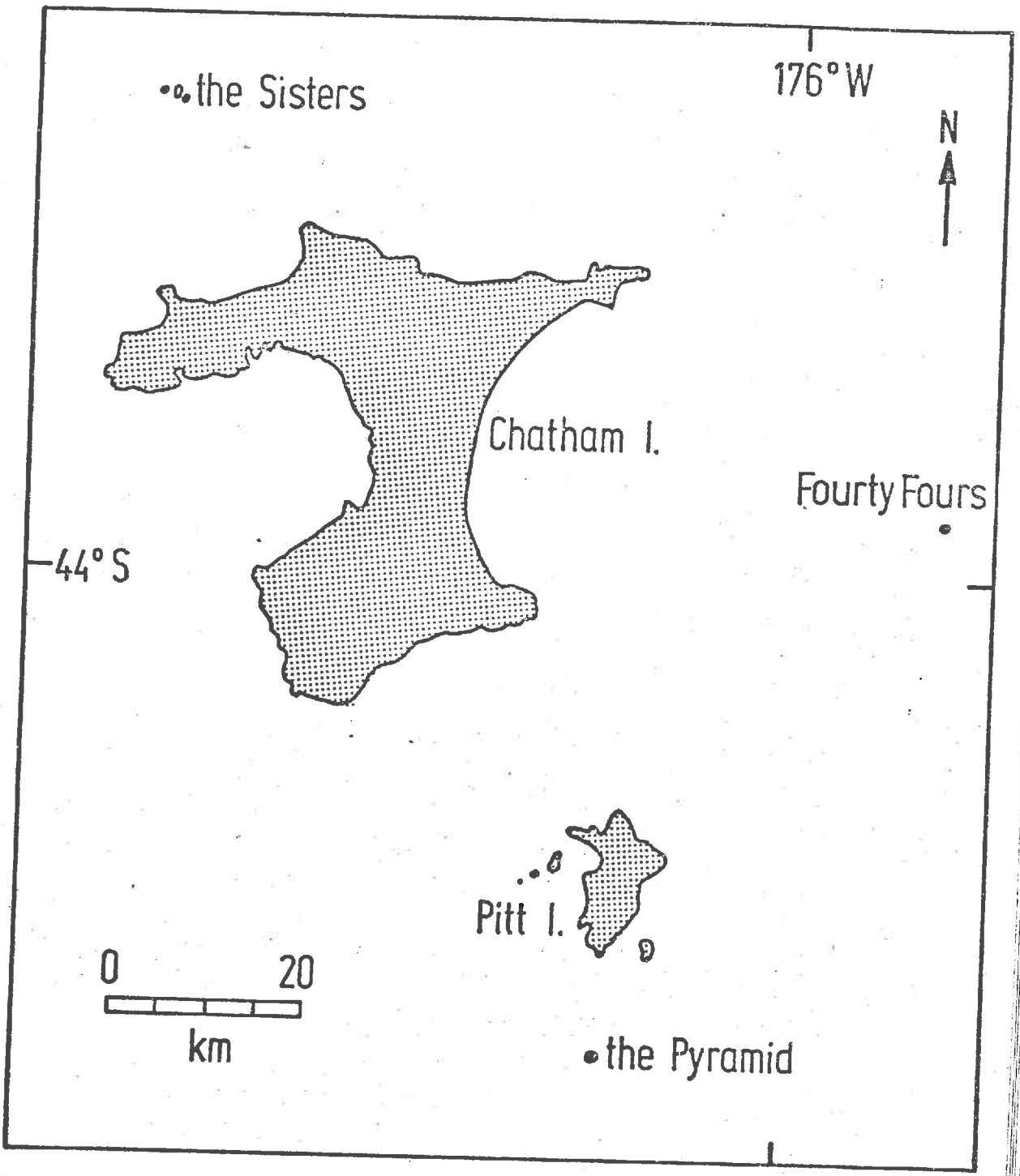
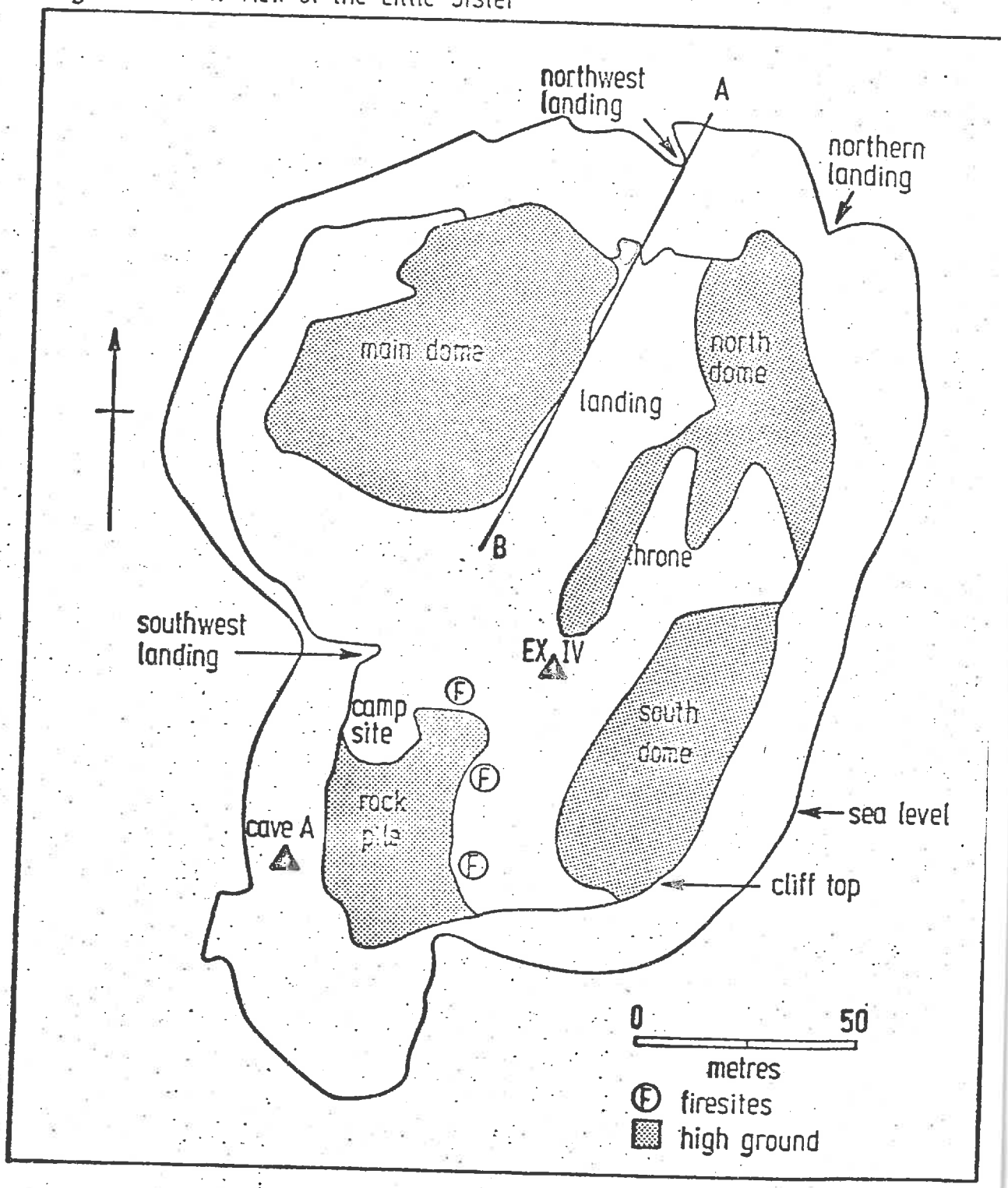


figure: 2 Plan View of the Little Sister



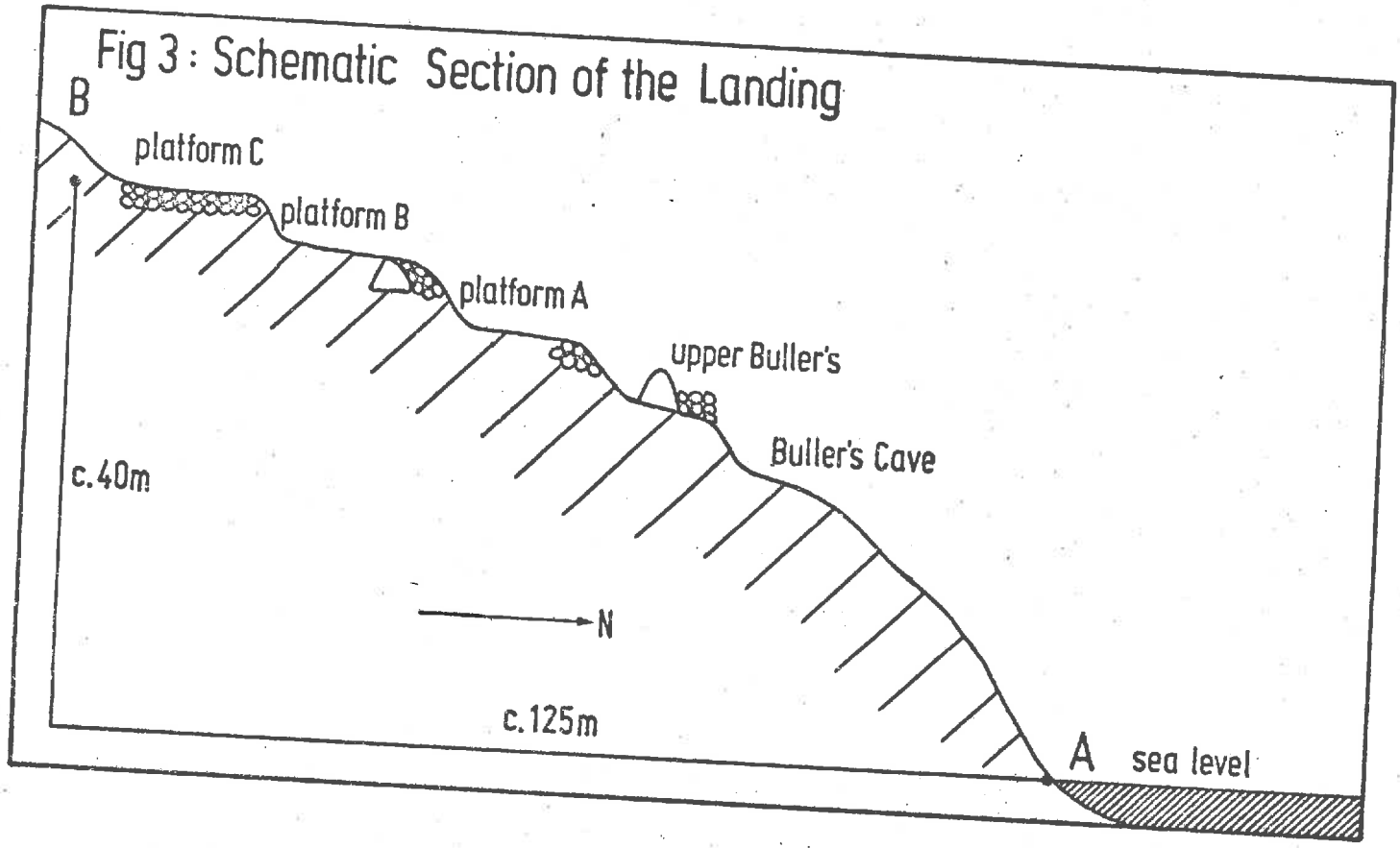


Fig 3 : Schematic Section of the Landing
B
platform C
platform B
platform A
upper Buller's
Buller's Cave
c.40m
N
c.125m
A
sea level

Figure 4 : Stone faced Terraced in Upper Buller's

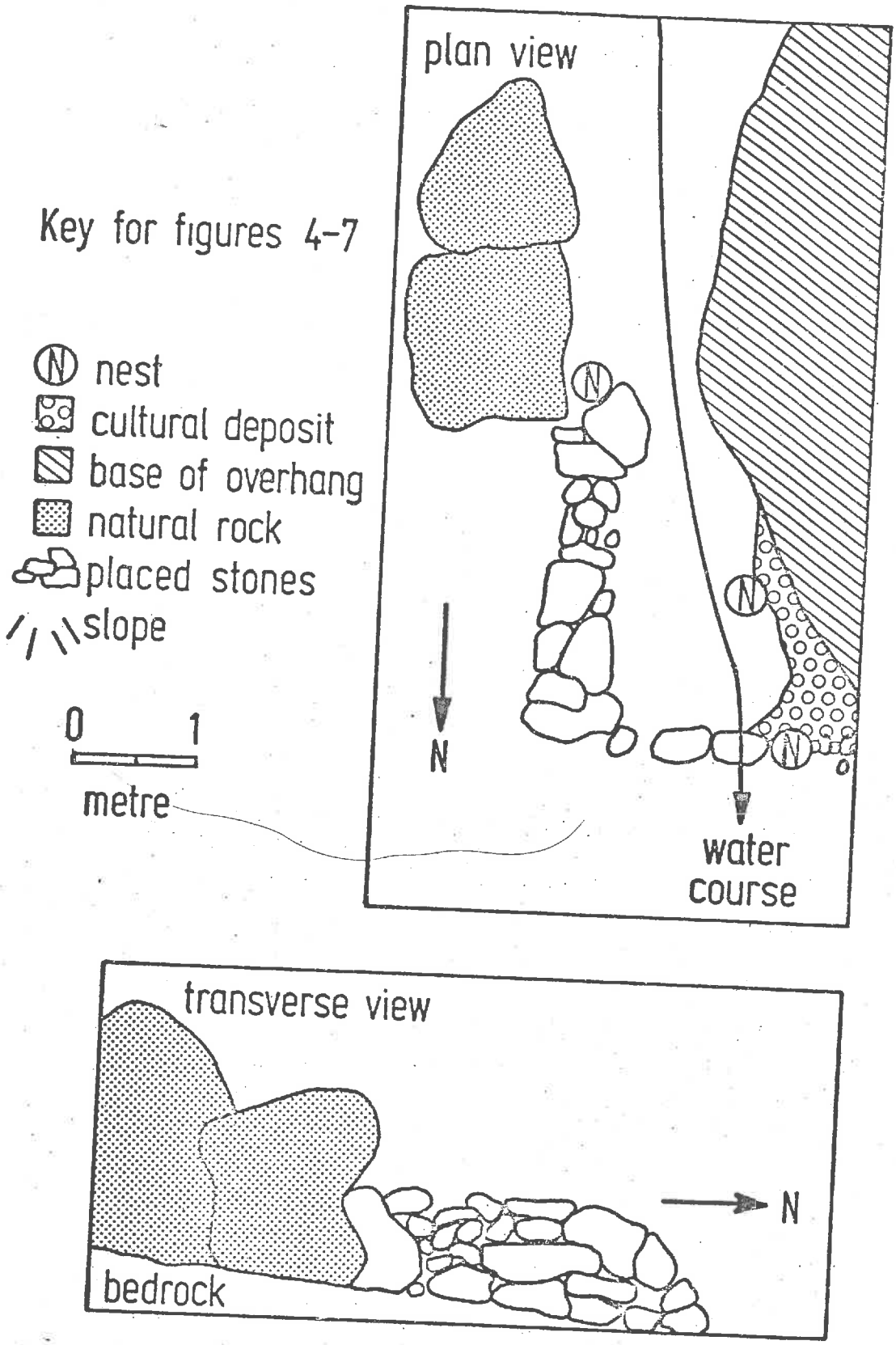
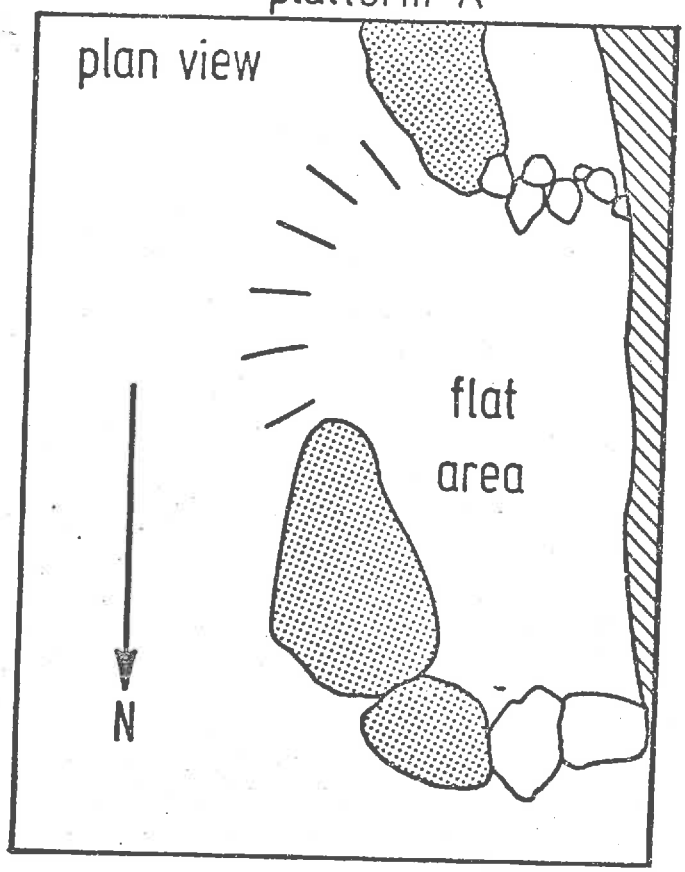


figure: 5 Plan and Transverse views of platform A



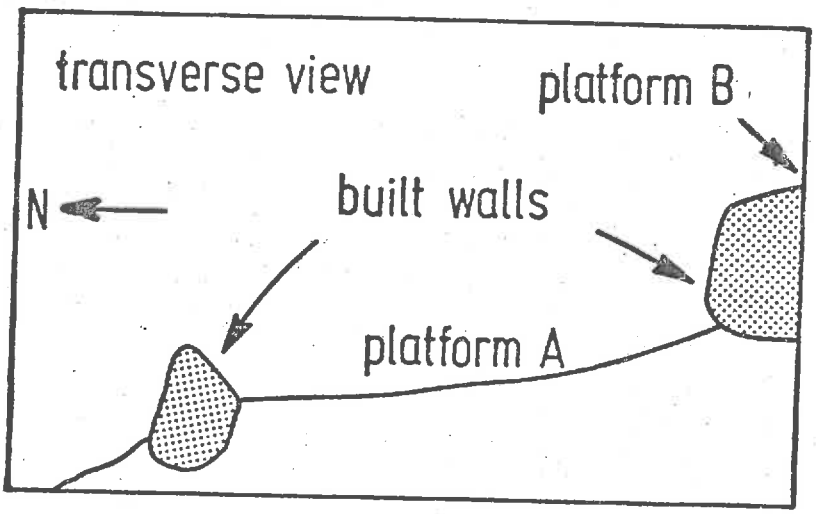


Figure 6: Plan view of Platform B

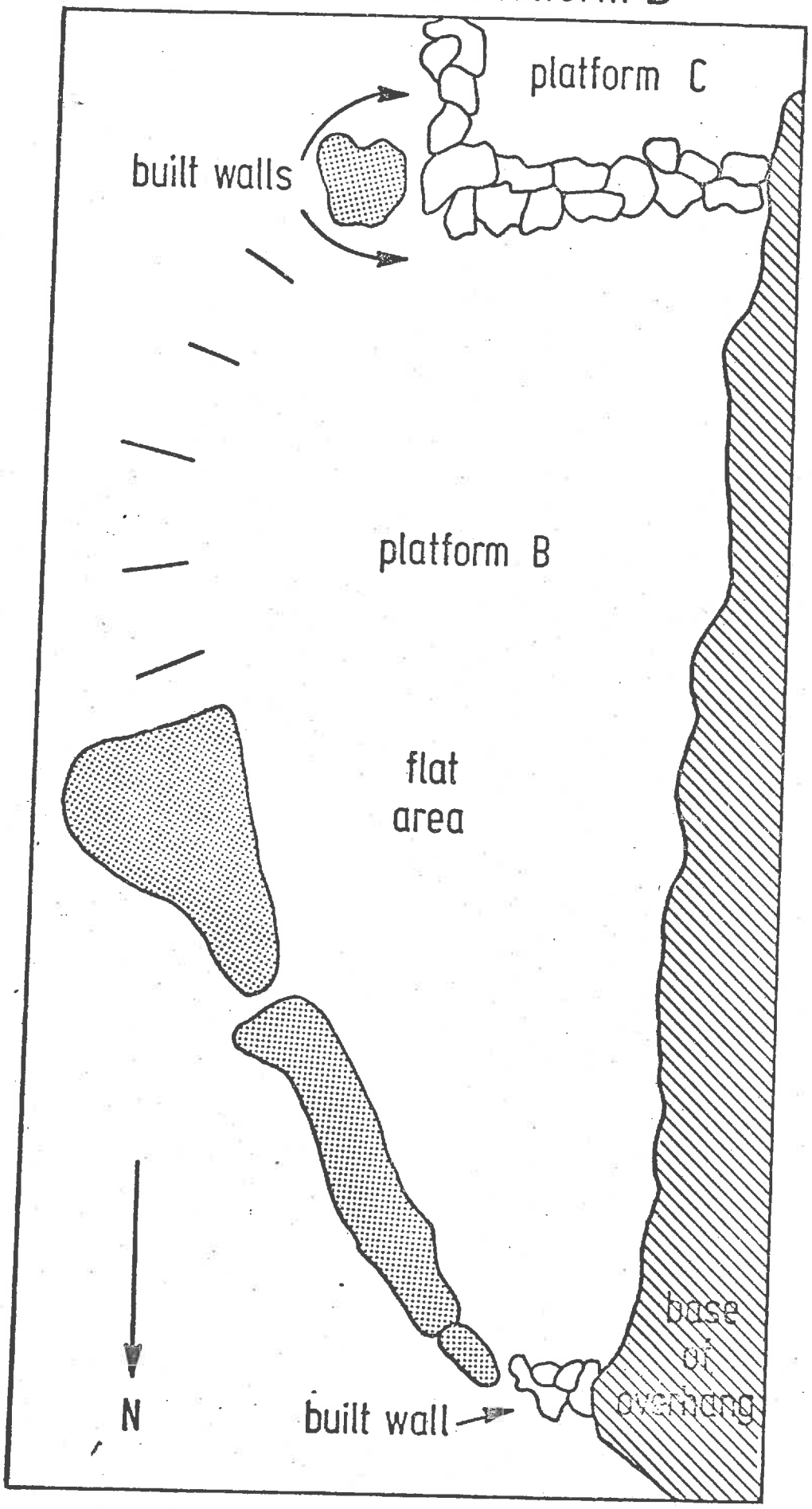


Fig 7 : Views of Platform C.

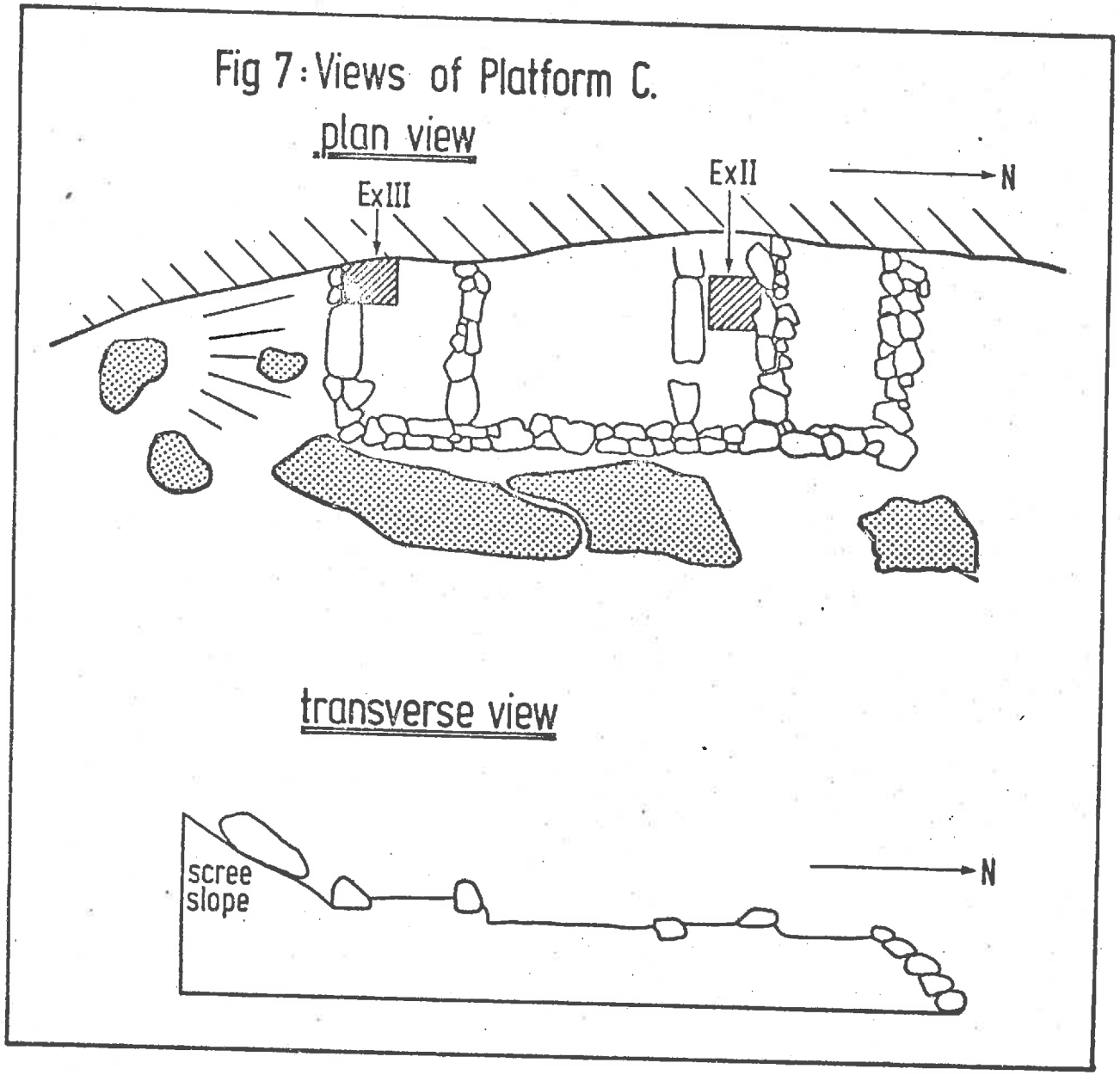
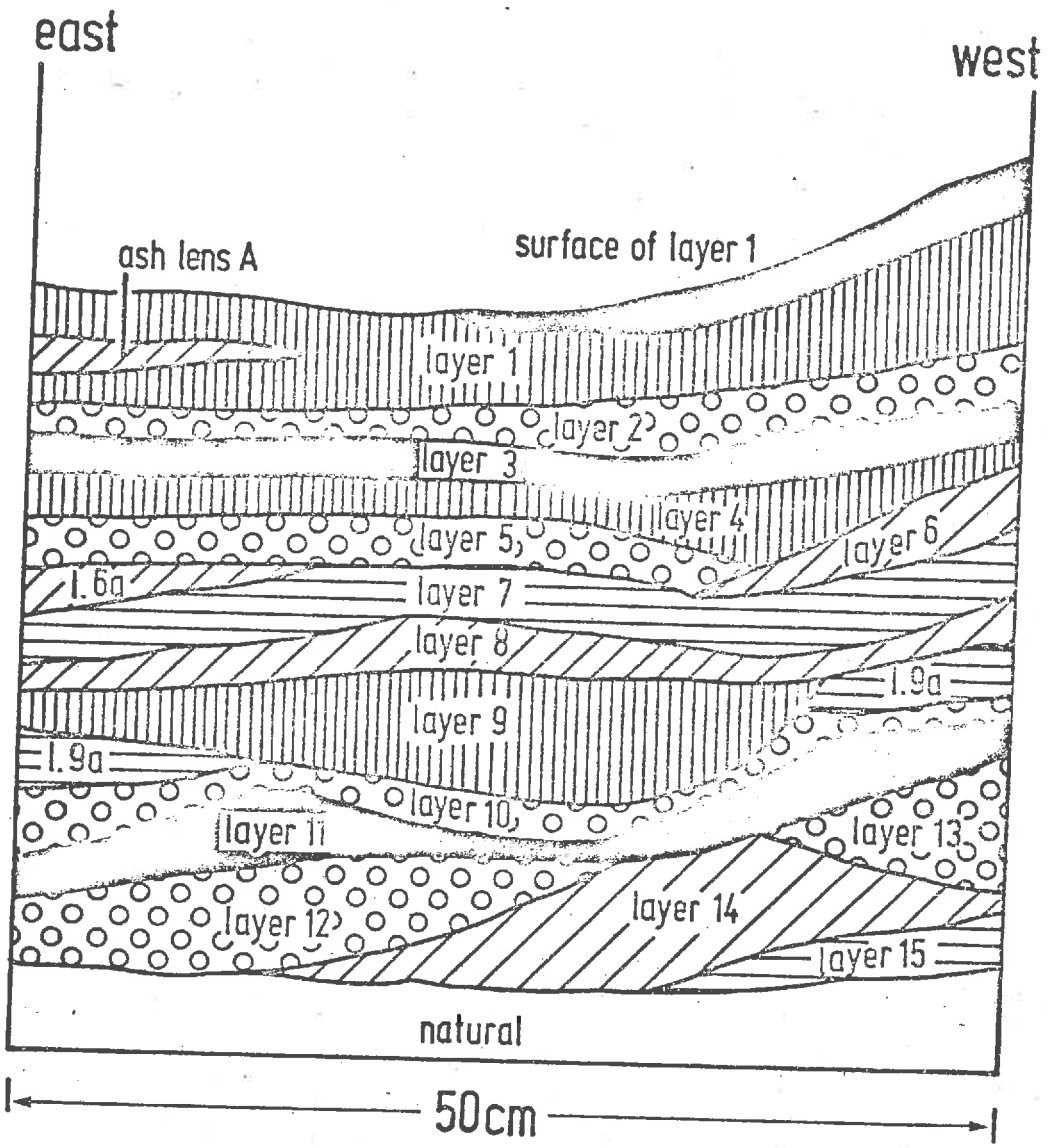


Fig 8 : Stratigraphy in Buller's Cave (2× vertical)



yellow-red-orange ash

black soil and charcoal

compacted vegetation

grey ash

black soil and ash

Fig 9 : Stratigraphy in Platform C (2× vertical)