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HISTORICAL ARCHAEOLOGY IN ANTARCTICA

David L. Harrowfield
Canterbury Museum

Abstract

During the period 12 December 1977 - 13 January 1978, the writer was fortunate to have the opportunity of working in Antarctica as a participant in the New Zealand Antarctic Research Programme. Most of this time was spent at the three historic huts erected by Scott and Shackleton on Ross Island in McMurdo Sound for the British Antarctic Expeditions of 1901 - 13 (Figure 1). In addition to carrying out essential maintenance and compiling an inventory of artifacts, some time was devoted to historical archaeology. The purpose of the following report is to present the results of this work.

Introduction

The potential for historical archaeology in Antarctica has interested people for some years but unfortunately, this growing branch of archaeology widely undertaken in the Northern Hemisphere, while having been attempted in Antarctica, has never been approached correctly. Most of the work carried out has been confined to the hut interiors particularly during their restoration, with considerable emphasis placed on artifact recovery and only some recording. Outside the structures, material which had remained undisturbed for many decades, has either been relocated or removed from the site with no record of where it was found kept. As a result, a considerable amount of information which would otherwise have led to increased knowledge about the activities of the early expedition has been lost.

Previous work

In the summers of 1960-61 and 1963-64, the Ross Island huts (last occupied in 1917) were restored by the New Zealand Government. At two of these, it was necessary to remove large quantities of snow and ice from the interior, a problem also present at Mawson's 1911-14 expedition hut presently being restored by the Australian Government. Prior to commencement of the restoration programme, advice was sought from various institutions overseas on the best means of extracting artifacts from ice. At Cape Evans where Scott's 1910-13 expedition hut is located, the

SKETCH MAP OF FIELD AREA

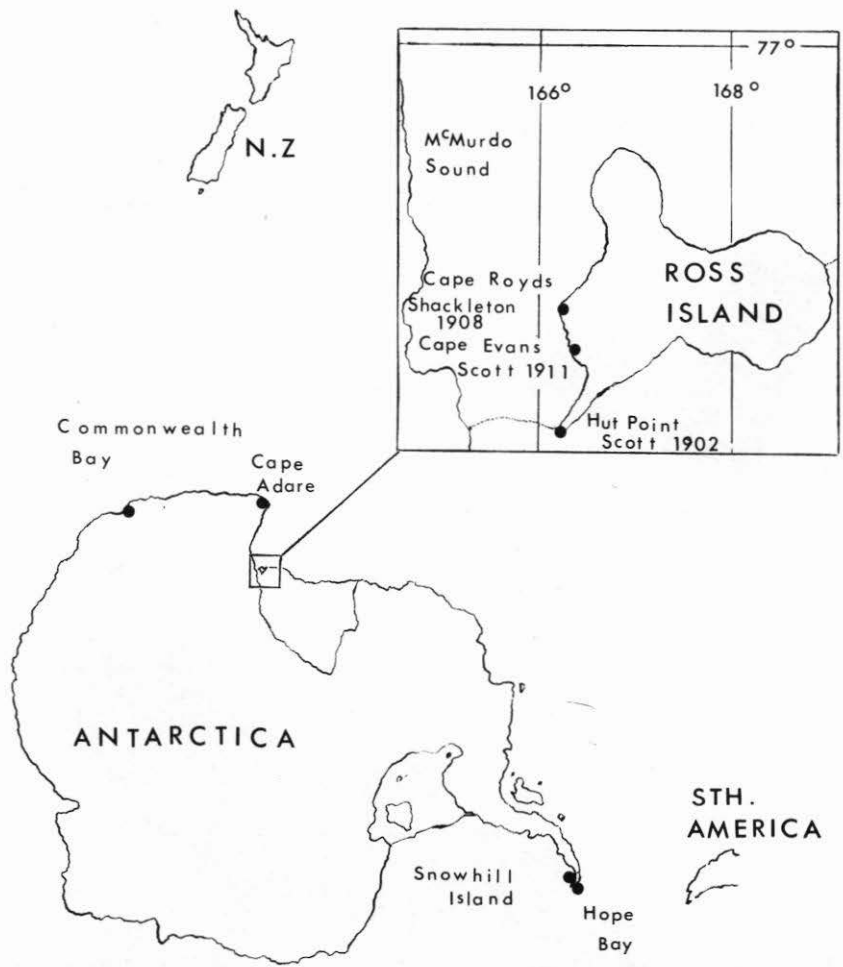


Fig. 1

procedure was as follows. Once an object had been discovered, its presence occasionally revealed by stains, the simplest method was to use a pick, remove the block of ice, and placing it outside, allow it to thaw. In many instances, shelves had collapsed this making it difficult to retrieve items such as bottles and delicate scientific apparatus without damaging them. Unfortunately as they were located, their distribution in relation to the structure was not recorded. However, in January 1964 when Scott's 1901-04 expedition hut was restored, the material located was at least listed and had it's location marked on a plan of the interior. This procedure is also to be adopted at Mawson's hut.

Site Investigation

In January 1911, the British Antarctic Expedition established it's base at Cape Evans where a large hut (7.5 x 15.5 metres) and adjoining structures was built. While at this locality, the writer decided to investigate archaeologically an area along the northern side of the hut. There were two reasons for undertaking this work. Firstly, it was essential to demonstrate the procedure which should be adhered to on any future occasion regardless of whether the work is being carried out within or outside the structure. Secondly, it was important to obtain some indication of the nature and amount of material remaining (especially beneath the surface) which had been discarded by those who had occupied the hut.

A grid consisting of 2.5 metre squares using the outer stable wall as a base-line was established, the base-line having been previously tied to a datum fixed when a topographical survey was completed for the area. Unfortunately in the time available, only one square was excavated, and while some disturbance had occurred since the last occupation (1915-17), principally as a result of wind, frost action and movements of people, the project was a useful exercise.

Initially, all surface artifacts had their positions recorded on a plan with two measurements - north from the baseline and east. The various items were then removed and attention turned to the underlying deposit which consisted of a dark grey volcanic scoria (Kenyte) ranging in size from coarse sand to small pebbles. It was now a matter of carefully working through the deposit with a small triangular bladed trowel and recording any object of interest located. At a depth of 3 - 5 centimetres, permafrost (permanently frozen ground) was encountered making the extraction of some artifacts difficult. On sites in the Arctic, various techniques including the use of hot water, salt, tents over excavations and aircraft engine heaters have been used to loosen permafrost at risk of damaging objects being recovered. A more acceptable and widely used technique is to rely solely on natural solar radiation which depending on weather conditions, can result in a melt of about five centimetres a day if the surface is scraped away at regular intervals. At Cape Royds

and Cape Evans melting of the permafrost is aided considerably owing to heat retention of the kenyte which in the summer months is exposed to 24 hour sunlight. Following experiments by the writer at Cape Royds, a simple technique was used at Cape Evans this increasing the rate at which the permafrost was melted. The method involved only spreading a sheet of black polythene (250 micron) over the excavation and leaving it long enough for thawing to take place, however, its true value would need to be proven with radiation and temperature data. Artifacts including a tent, clothing and a case of penguin eggs recovered when a large quantity of ice was removed from within the hut's annex, were also successfully de-iced by wrapping them in polythene film. As far as the writer has been able to ascertain, this method has not been used previously and while proving to be effective, it's success was entirely dependent on the intensity of insolation received at the ground surface.

Of the 34 artifacts located (Figure 2), only six were below the surface and a lack of stratigraphy eliminated the necessity to compile cross section diagrams. The excavation was therefore terminated at a depth of 10 centimetres.

Results and Discussion

From an examination of stores lists, the remaining contents of the hut and published accounts of the expeditions, it was possible to assign most artifacts to Scott's second expedition (1910-13). These included remains of two bales of pony fodder, a horseshoe nail, vinegar bottle fragment and a length of 35mm cine film. Coal fragments represent remains of the outer stable wall which was constructed of large briquettes until a more permanent structure of wood was completed in 1912 to house seven Indian mules. Other artifacts are linked with the earlier Shackleton expedition (1907-09) and many were unidentifiable.

While little additional information could be gained relating to the structures, some of the objects located have an interesting history. For example, the bicycle pedal remnant is linked with the Australian geographer Griffith Taylor who used a bicycle south for exercise during Scott's second expedition and straw wrappers from bottled fruit were taken from Shackleton's hut at Cape Royds possibly by members of his Ross Sea Shore Party who were marooned at Cape Evans in May 1915.

The Cape Evans excavation may be regarded as unique in the growing field of historical archaeology and has demonstrated the potential for further work of this nature in Antarctica. Unfortunately, few sites exist which unlike those on Ross Island have remained largely undisturbed since their occupation. The huts erected during the Southern Cross Expedition (1899-1900) and Scott's second expedition at Cape Adare, Nordenskjold and Larsen's Swedish Expedition (1901-04) on Snowhill Island and at Hope Bay and Mawson's Australasian Antarctic Expedition (1911-14) at Commonwealth Bay, may provide the remaining opportunities for this work.

Contrary to popular opinion, Antarctica is not the perfect storage facility. The severity of the climate for example, has resulted in the destruction of many artifacts at these historic sites. It is therefore important more of this work be carried out if we are to acquire a greater knowledge about the activities of these early expeditions before this information is lost for all time.

Acknowledgements

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ARTIFACT SUMMARY

SITE: Cape Evans, Ross Island, Antarctica GRID SQUARE NO: 5 DATE: 4 Jan78

LOCATION Cms

No.	Object	Nth	East	Cover	Remarks
1	Straw wrapper for bottled fruit	25	30	Surface	1908.Cape Royds
2	" " " " "	20	80	"	" " "
3	Provision tin lid	20	30	"	Rusted
4	Tin of flour.Brand uncertain	40	55	"	"
5	Provision tin lid	65	80	"	"
6	10 cm length 35 mm cine film	55	80	"	1911. Ponting
7	Remains of skua gull	95	55	"	Recent
8	Provision tin lid	115	95	"	Rusted
9	" " "	100	95	"	"
10	Cycle pedal remnant	120	115	"	1911.Griffith Taylor
11	Fragment canvas	135	100	"	
12	" scrim	175	95	"	1911.From bale fodder
13	Length of rope 130 cm	180	135	"	Sledge tow rope?
14	Strip of brass sheet 32x9cm	100	195	"	1911
15	2 brass wood screws c/s head	95	175	"	
16	Tin McDoddie's dried veges	35	200	"	Contents uncert.
17	Glass phial	45	180	"	Damaged
18	Base of vinegar bottle	160	125	"	1911
19	23 fragments of glass	35	225	"	Bottle fragments
20	18 " " "	110	140	"	" "
21	Straw wrapper for bottled fruit	130	90	"	1908.Cape Royds
22	Length of bamboo	60	95	"	Hole drilled one end
23	Fragment plywood from supply case -		170	"	
24	Part bale of pony fodder	see	plan	"	1911
25	" " " " "	"	"	"	"
26	Board 75 cm	"	"	"	" from hut?

No	Object	Nth	East	Cover	Remarks
27	Quantity of felt	see	plan	surface	1911 Hut lining?
28	" " rope & scrim	"	"	"	
29	Base of glass reagent bottle	140	190	7	
30	Iron nail 13 cm	105	130	3	1911 from hut
31	Length rubber tubing 3cm 0.5 Diam	190	135	6	
32	Horse shoe nail	75	100	3	1911
33	Battery electrode	90	95	3	1911
34	" terminal	20	175	3	1911
A	6 Kenyte boulders				
B	Surface Ice				
C	Coal fragments				
					Page layout after Trotter.