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# THE EXCAVATION OF THREE MINERS' HUT SITES MACRAES FLAT

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## Introduction

Macraes Flat is a historic gold mining town in inland East Otago (Figure 1). Mining began there in 1862 and continued intermittently for the next century. As a result the area has a rich archaeological heritage, based on a mineral resource that is once again under scrutiny.

Macraes Mining Company Limited has been operating its East Otago Mine near Macraes Flat since 1990. As part of its environmental programme it has commissioned a number of archaeological surveys and excavations, the latter mainly being of dwelling sites. This paper details the excavation of three miner's hut sites (part I42/36) on the banks of Upper Murphys Creek (Figure 2) undertaken in 1997 (Authority No. 1996/127). A full report is given in Petchey (1997).

Upper Murphys Creek has extensive archaeological evidence of alluvial gold mining, with numerous water races, dams, tailings mounds and pits (Figure 2). This mining activity is hard to date with any accuracy, although Murphys Creek was the scene of mining activity as prospectors worked up the various creeks and rivers from the coast in the early 1860s. However, it is likely that the surviving workings date at least in part to the early years of the twentieth century. This is suggested by the proposed date for the associated miners' huts and by the known date of construction of some earth dams in the creek (both discussed below).

All hut measurements quoted below are for interior dimensions, unless otherwise specified. This follows Ritchie (1986), and is in line with Bristow's (1994) conclusions as to the best way to record hut dimensions. It allows the calculation of interior usable space.

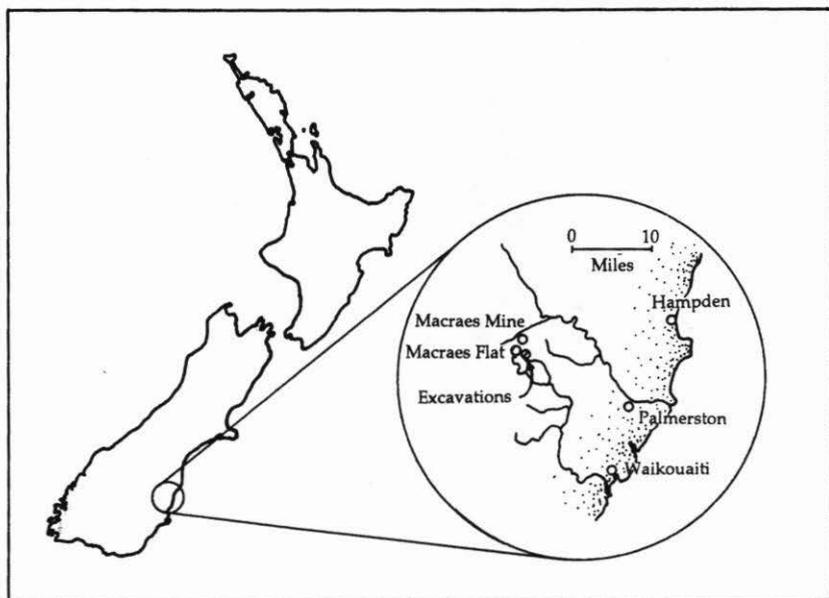


Figure 1. General location of excavations.

## The Excavations

### Area 1, Two Miners' Huts

The two miners' huts in Area 1 were built on a small terrace on the north-west bank of Murphys Creek. Some overgrown rough stonework of a wall was visible of Hut 1, while some schist stonework of the chimney identified Hut 2.

#### *Hut 1* (Figures 3 & 4)

Hut 1 was constructed of very rough schist walls that had largely collapsed. Excavation consisted mainly of removing the wall debris. The hut measured 3m by 2.3m, with the doorway and fireplace located in the north (short) wall. There was a small porch area outside the door. The hut floor was paved with schist slabs for about half its area. A number of postholes (one of which contained an inverted beer bottle) around the inside of the walls indicated that the hut had once had a light timber framework, presumably for canvas upper walls and roof. The fireplace and chimney were probably sod as the fireplace was marked by an earth mound.

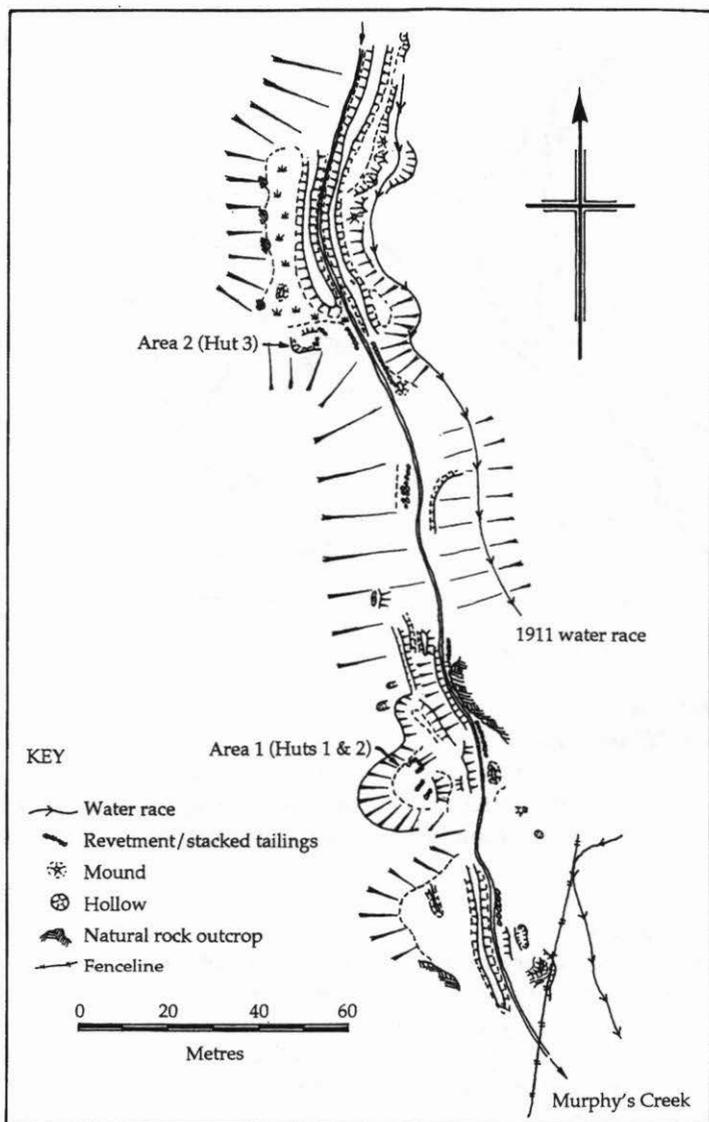


Figure 2. Section of Upper Murphys Creek, showing relationship of hut sites to alluvial gold workings.

Some artefactual material was found on the floor of the hut, including several embossed tins with "Dunedin" still legible, a pair of men's shoes and four complete bottles; a Davis Vegetable Pain Killer, a Worcester sauce bottle, a spirits bottle and the beer bottle in the post hole. Of particular note was half of a broken sterling silver cuff-link, which is discussed in detail below.

### *Hut 2* (Figures 3 & 5)

Hut 2 was on the same level as Hut 1, the two structures being separated by a shallow drain. They appear to have been contemporary.

The substantial fireplace was the only stone structure in Hut 2. It measured 2.4 m by 1.5 m, with a large 0.9 m by 0.6 m schist slab laid horizontally to form a hearth. The lack of any scorching or charcoal on this hearth suggested that it had formed the base for a small self-contained stove of some description. Some scattered ashes and coal fragments were found trodden into the clay floor in front of the hearth. There was no paving.

The area of the hut was defined by a roughly-placed row of stones, a shallow trench and several post-holes (one of which contained a ring-seal beer bottle). The hut was 2.1m wide, and possibly up to 5m long (the end wall was not defined). The lack of evidence of walls suggests that this was probably a framed tent with a stone fireplace.

### **Midden**

An area of midden was located in a hollow below the two huts. An area of 6.5 square metres was excavated, although most material was concentrated in 1 square metre. No stratigraphic detail was observed, the midden probably having been deposited over a short period. The artefactual material consisted mainly of bottle glass, although rust staining indicated that iron (probably tin cans) had been present. No ceramics were found and the only faunal material was a very eroded mammal bone fragment (probably sheep).

The bottle glass had an MNI of 21, based on neck counts. There were six worcester sauce bottles (No 1), two essence of coffee and chicory bottles (Symington & Co), one tomato sauce bottle (H.L. Koefoed), two Eno's bottles and two ring-seal beer bottles present or represented by necks. There were also fragments of several spirits bottles and a meat paste jar. All of the bottles from the huts and midden were of the "applied-top" type.

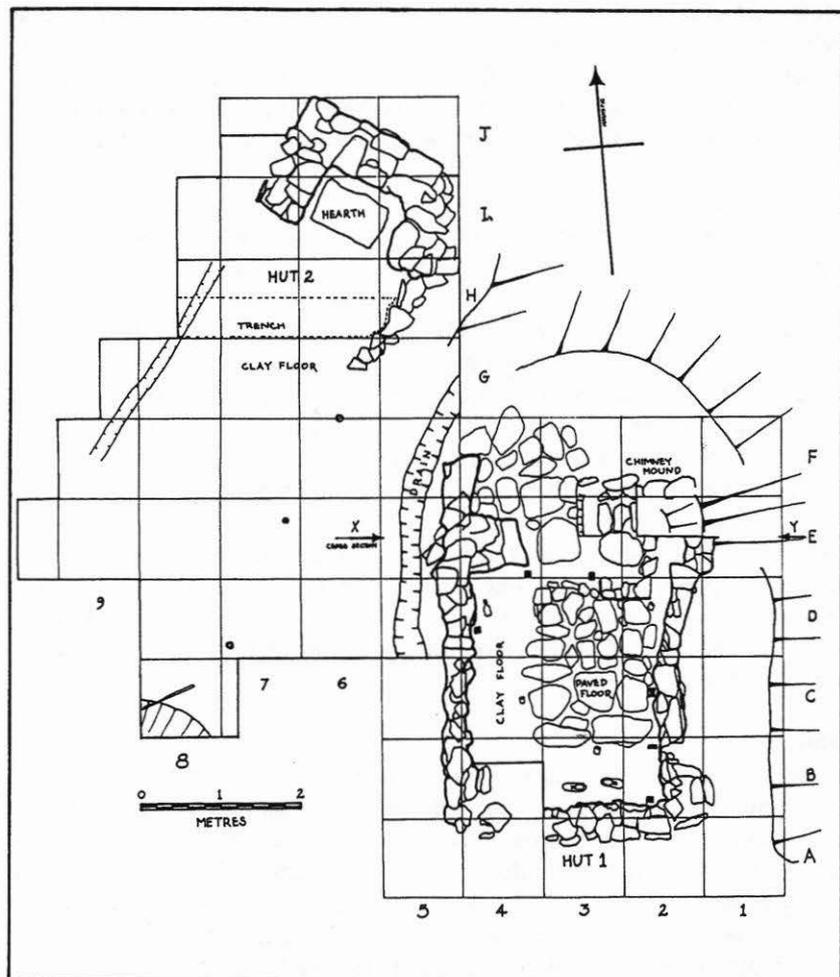


Figure 3. Excavation plan of Huts 1 and 2.

### Area 2, Miner's Hut

#### Hut 3 (Figures 6 & 7)

Hut 3 was located 100 metres north of Huts 1 & 2. It consisted of a 3 metre by 6 metre terrace cut into a north-facing slope above the junction of Murphys Creek and a small side gully. A fireplace mound was visible on the terrace.



*Figure 4. Hut 1 after excavation. Note the partially paved floor and the remains of the earth chimney.*

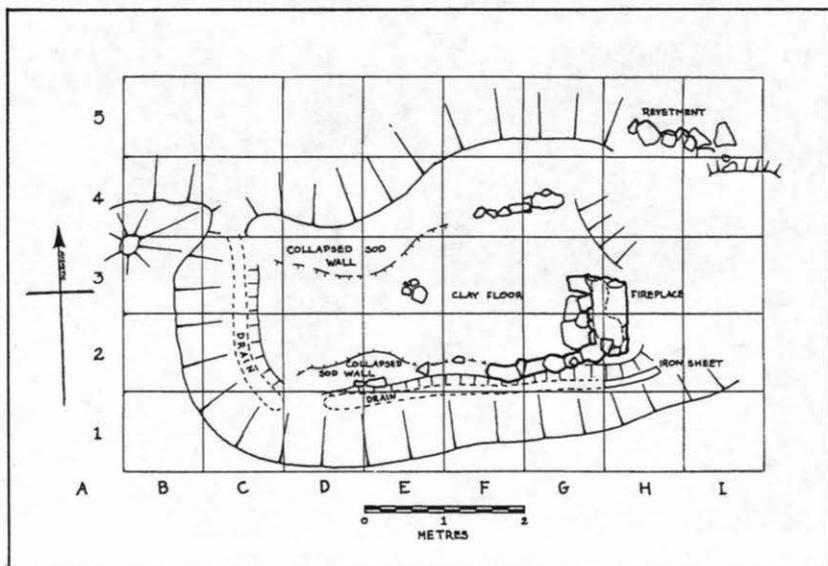


*Figure 5. Hut 2 after excavation. Hut 1 in the background.*

The fireplace was constructed of schist, and had two archæologically identifiable periods of use; a layer of ashes and charcoal lay directly on a bare earth hearth, with a later schist hearth being constructed on top. No ashes were associated with the upper hearth, so it was possibly constructed for a small self-contained stove. A lead bottle top foil was recovered from the lower fireplace (see "Dating" below), presumably discarded after the last fire was lit and before the fireplace was modified.

Little evidence of the walls of the hut survived (due to stock damage), with only a few pieces of schist lying along the wall lines. Due to the amount of earth on the site, it is likely that the hut had low sod walls with a canvas superstructure and/or roof. This is supported by the number of nails recovered from the site ( $n=39$ ). The floor was of earth, identifiable by a scatter of artefactual material (nails, a bullet, bottle glass). The hut itself probably measured 3.6 metres by 1.8 metres. A drain ran around the back of the terrace, a short section being lined with thin iron sheet

No midden was located, the only artefactual material found outside the hut being a broken spirits bottle down the bank below the terrace. Rubbish was probably thrown into the boggy ground below the hut, which was not excavated.





*Figure 7. Hut 3 after excavation. The amorphous nature of the near end is probably due to heavy stock damage. The fireplace is shown before further excavation revealed the early hearth.*

## Discussion

### Dating

Mining in Murphys Creek began in the 1860s, and continued in the Macraes area for a long period, with the last resurgence of small-scale alluvial mining being during the depression in the 1930s. However, in this section of Murphys Creek a terminal date for alluvial mining is suggested by a number of earth dams constructed by the Goldfinch Mining Company in 1911 for a nearby battery. These dams can be identified from sketch maps attached to the original licence applications (Macraes Warden's Court, Applications 14/11, 62/11, 64/11), and would have inundated many of the creekbed alluvial workings.

In the absence of better dating for the workings, the dating of the associated hut sites relies on artefactual analysis. The ring-seal beer bottles recovered from Huts 1 and 2 are typical of the 1880-1912 period, which fits well with

the general "applied-top" technology demonstrated by all the bottles recovered.

More specifically, the sterling silver cuff-link from Hut 1 bore the hallmark of a lion and an "X" in rectangles. This indicates manufacture in Birmingham in 1897/98 (Pickford, 1992). As this cuff-link showed considerable wear, the chain links having eventually weakened and broken, a date of loss some years after the date of manufacture seems most likely. All of this evidence supports abandonment of Hut 1, and by association Hut 2, around 1911 when the Goldfinch Mining Co. built their dams.

Hut 3 is harder to date, but again by association it is unlikely to have been used any later than the inundation of the creek bed. A lead bottle top foil found in the fireplace was embossed "John Dewar & Sons, Perth, Distillers." This type of artefact has been proposed by Nayton (1992: 83-91) as a potentially very good chronological marker for historic sites, although more work is needed in the field. Her general comments on foils state that they were used with embossed trademarks from 1862 to the mid-1920s (*ibid.*: 84). Dewar's Scotch whisky was only exported in any quantity after 1892 (Lockhart 1951: 83), so this again supports use in the very late nineteenth/early twentieth century.

### **Materials and Design**

The layout and construction of the three huts is typical of miner's hut architecture in Otago. Maximum use was made of local materials, such as schist and earth (probably in the form of sod). Tussock may have been used for thatch or bedding, although no archaeological evidence survives of this. Introduced material included timber framing, canvas and iron sheet, all of which were light and reusable. The heaviest items for which there is evidence (albeit indirect) were self-contained stoves of some description used in Huts 2 and 3.

The inverted beer bottles found in post holes in Huts 1 and 2 were apparently used to wedge timber uprights. It is not known how prevalent this method was in hut building, but it may suggest that the same individual(s) were involved in the construction of both huts.

Hut 1 and Hut 3 both had the fireplace and door placed together in a short wall, which appears to have been a common practice in Otago (see discussion below under "Ethnicity"). The partial paving of the floor in Hut 1 is also a

feature seen in other Otago hut sites, such as the example excavated by Bristow (1994: 63; 1995:37-47) in the Old Man Range. However, the actual part of the floor that was paved appears variable, as Bristow (1994: 63) in two instances observed paving at the end of the hut away from the chimney and door, while Hut 1 here had the paving adjacent to the chimney.

### **Location**

As described above, the huts were located on terraces on the banks above alluvial workings in Murphys Creek. This proximity to "work" requires no further discussion. However, the aspect of the huts is of some interest. Hut 3 is north facing, and so was well placed for maximum sunshine. This agrees with Bristow's (1994:92) observation that there was a preference for maximum sunshine, or at least afternoon sunshine, in the choice of hut location.

Conversely, Huts 1 and 2 were built on an east facing terrace, with a high bank behind them to the north and west. They therefore faced the morning sun, and were shaded from the afternoon and evening sun. This shading would have been particularly marked in the winter when the sun was low in the sky. As Macraes experiences a fairly extreme climate, with hot summers and cold winters, this suggests a number of possibilities. Firstly, it may simply be a bad choice of location; a product of normal variation. Secondly, it may suggest seasonality in the use of these diggings, with the huts located for some shade in a hot summer.

### **Midden and Diet**

The contents of the Hut 1 and 2 midden together with the bottles and tins from inside the huts confirms that the miners were consuming packaged food items, probably bought from a local store supplied in turn from Dunedin. The large number of sauce bottles was interesting, while the lack of evidence of what was being sauced was frustrating.

The only faunal remains recovered from Area 1 (Huts 1 and 2 and midden) were a partial mustelid skeleton (certainly a natural death), several very eroded fragments of bone (probably sheep) and a partial pig humerus. None showed any evidence of butchery, and none were in a secure archaeological context: all could easily be post-abandonment natural deaths.

It was initially assumed that mutton would have been a staple in the area, which has always been sheep country (Macraes is supposedly named after a

shepherd who lived there when the diggers arrived). The lack of faunal remains may simply indicate that this assumption was wrong, although taphonomic processes may have degraded any bones that were present. However, the indication of cans in the midden could suggest that tinned meat rather than fresh meat was being consumed.

Alcohol consumption at Huts 1 and 2 does not appear to have been excessive, with only 9 alcohol bottles identified by neck count. Several bottles escaped counting as they were neckless, it being a known practice for miners to open bottles by simply knocking the top off. This illustrates a shortcoming of the analysis; combined neck and base counts should have been used.

A point to be made here is that the excavated midden may not represent the entire history of the huts. A search was made of other nearby hollows, but although no other rubbish pits were found this does not mean that they did not exist. Rubbish may have been washed away by Murphys Creek or may have become deeply buried due to movement of soil by stock. The midden for Hut 3 is almost certainly in the adjacent bog.

### **Ethnicity**

For a period Macraes had a sizeable Chinese presence, constituting half the mining population in the early 1870s (Ng 1993:221). As such, the possibility of Chinese occupation of local sites must always be examined. However, by the early twentieth this section of the population had dwindled to a few individuals (of a total population of 2,014 in Waihemo County in 1901, only 34 were Chinese (N.Z. Census 1901)).

Bristow (1994) and Ritchie (1986) have both examined miners' huts in an attempt to identify any European/Chinese differentiation. Ritchie (1986:154) was of the opinion that there were ethnic differences in the upper Clutha area; namely small size and door/chimney location together in a short wall in Chinese huts. Bristow (1994: 109) disagreed, finding that door/chimney association was common to many huts regardless of ethnicity, and that variations in size and construction were more likely to be determined by length of occupation than ethnic background.

As discussed above, Huts 1 and 3 had the door and chimney on a common wall. All three huts were within the size range found by Ritchie (1986:150). Two fragments of Chinese ceramic were recovered from Hut 1, but Chinese ceramics are common in the area, and have been recovered from sites of

known European habitation (personal experience). In general, the overwhelmingly European artefactual material and the likely date of the huts suggest that they were inhabited by Europeans. This would appear to support Bristow's opinion that the common door/chimney layout is a typical goldfields design, rather than an indicator of ethnicity.

### **Conclusions**

Excavation revealed that the three huts in Upper Murphys Creek were probably occupied by European miners who were working the creek bed sometime prior to ca 1911. Huts 1 and 2 were contemporaneous, and probably had only a single occupation. Their location may suggest a summertime use, as they would have been in an extremely cold spot during the winter. Their abandonment can be fairly confidently dated to within a few years prior to 1911.

Hut 3 was better placed to the sun than the other two huts, and had evidence of modification to the fireplace, which may suggest two occupations. The dating of this hut is not as secure as for Huts 1 and 2, but it was probably also contemporary.

There is strong evidence from the midden associated with Huts 1 and 2 that packaged foodstuffs were being consumed, with very little evidence of any consumption of mutton. This was a surprising finding, as it was assumed that mutton would have been a staple.

In more general terms, the three huts show a number of similarities with other miners' huts in Otago, specifically the use of schist, timber, earth and canvas, the placing of the door and chimney in a common short wall and the partial paving of the interior floor. These are elements of a vernacular architecture that arose in the gold rushes of the 1860s and was still in use fifty years later.

### **Acknowledgements**

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## References

- Bristow, P. 1994. Archaeology and Ethnicity of the Remote Otago Goldfields. M.A. thesis, Anthropology Department, University of Otago.
- Bristow, P. 1995. Excavation of a Miner's Hut (S143/226) in the Old Man Range. *Archaeology in New Zealand* 48, 1: 37-47
- Lockhart, R.B. 1951. *Scotch. The Whisky of Scotland in Fact and Story*. London, Putnam.
- Macraes Warden's Court, Licence Applications. National Archives, Dunedin Regional Office, Ref. AAJH, D98.
- Nayton, G. 1992. Applying frontier theory to a Western Australian Site: The problem of chronological control. *Australasian Historical Archaeology*, X:75-91.
- New Zealand Census, 1901.
- Ng, J. 1993. *Windows on a Chinese Past, Volume I*. Dunedin, Otago Heritage Books.
- Petchey, P.G. 1997. Macraes Mining Company, Expansion Project, Archaeological Report. Report to NZHPT for Macraes Mining.
- Pickford I. (ed). 1992. (paperback edition). *Jackson's Hallmarks, Pocket Edition*. Suffolk, Antique Collector's Club.
- Ritchie, N.A. 1986. Archaeology and History of the Chinese in Southern New Zealand. Unpub. Phd. Thesis, Anthropology Dept., Otago University, Dunedin.