The archaeology of Chinese alluvial mining in Australia

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This paper reviews the typology and techniques of Chinese mining practices on Australia's alluvial goldfields, using examples from southern New South Wales and Victoria. It is argued that there are physical characteristics that can be used to distinguish many Chinese mining sites from European ones. Although not applicable in all instances, the typology forms a handy reference tool for those seeking evidence of Chinese involvement in alluvial goldmining.

The presence of Chinese people in Australia in the latter part of the nineteenth century was primarily a rural and regional experience. Up until 1900 most Chinese people did not live in metropolitan areas. In New South Wales and Victoria from 1850 to 1870, (later in Queensland and the Northern Territory) they worked primarily on the goldfields as miners, storekeepers and market gardeners. Later, they diversified into other forms of farming and contract work in the pastoral industry, much of which took place away from the goldfields (Choi 1975:28–33). Despite this diversification, the main physical evidence of their presence in Australia, prior to 1900, is on the goldfields, and it is there that historical archaeologists researching Australia's Chinese past have devoted much of their time.

Unfortunately, much of this evidence has been lost or is under threat, except on the more remote and often less heralded goldfields. For example, there was a substantial Chinese presence in the Ovens, Ballarat and Bendigo districts of Victoria. However, most of these sites, with the exception of some such as the cemetery at Beechworth, have now succumbed to urban and agricultural development. This is particularly the case with the large Chinese camps.

The loss of so many sites highlights the importance of identifying and recording those that remain. Most of the surviving sites are in alluvial mining districts where most of the Chinese miners lived and worked. Chinese mining sites number in hundreds, if not thousands, certainly well in excess of the number that has made it onto official heritage lists. Fortunately, many of these sites are difficult to access and relatively unknown, and therefore well preserved.

THE EVIDENCE

The basis for this discussion is a paper I presented at the 1996 ASHA conference, which was subsequently revised and published in the Australasian Historical Archaeology (McGowan 1996:34–45). In that paper I discussed the typology and techniques of alluvial mining generally, and I refer to that material again. It should be noted that there is considerable difficulty at times in distinguishing certain mining types and techniques, as one or more forms are often superimposed upon another, sometimes to the point of obliteration. This challenge further complicates the task of distinguishing between sites that are European in origin and those that are Chinese.

This latter challenge is best illustrated by reference to the first three types in the typology. Briefly, Type A included the heavily scoured creek beds and banks, and adjacent to this the numerous closely grouped shallow shafts or rounded piles and hummocks of wash dirt and soil, described by Ritchie (1981:62) as 'small claim' or 'pithole tailings'. Type B included duggings where the auriferous drift has been stripped to bed rock but at a very shallow level, and were referred to as shallow surfacing. Diggings which involved the excavation of alluvium, in the process creating a large rectangular pit, were classified as Type C. This type of working is known as pad-docking. Together these three types of workings encompass a large proportion of the alluvial mining sites worked by both European and Chinese miners. In all three instances, however, the mode of working, and the implements used, that is pan and cradle, short sluice or tom, water wheel or Californian pump, were similar. The European and Chinese sites are, therefore, for the most part theoretically indistinguishable, though there are several characteristics that may help in the process of cultural identification.

I argued in the 1996 paper that the main ethnically based distinction of any clarity concerned the elongated mounds of water worn stone piled up after working the face and floor of the diggings, referred to as tailing mounds, and classified as Type D. These mounds were not simply piles of stone, but a part of the technology used on the field itself. They were often arranged as tail races which would in turn hold rock sluices or sluice boxes, as dams and as barrow ways. At the time I distinguished two principal types of tailing mounds, unstructured mounds referred to as Type D1, and neatly packed vertical mounds (Type D2). I suggested that the latter were generally characteristic of Chinese mining sites (McGowan 1996:34–35). The existence of this ethnically determined characteristic has been confirmed time and time again by fieldwork and it is to that evidence that I now turn.

Firstly, it is of interest to reflect on the way in which this part of the typology came to the fore, as it reveals something about the range of evidence that historical archaeologists sometimes need to draw upon, unorthodox as some of this may seem. The first site of this nature that came to my attention was known as Ah Hacks. It is located on the Mongarlowe field in the Braidwood District of New South Wales. Prior to that there had been little that was remarkable about the tailing mounds I had seen. But these were qualitatively different. They were relatively small-scale workings, and included small, in some cases only centimetres high, vertically packed stone walls, the longest of which was about 12 m. The floor of the workings was completely clear of tailings, and the whole area had the appearance of having been intensively and meticulously worked by pan and cradle (Fig. 1).

On a subsequent visit to the site I was accompanied by a local resident, Ted Richardson, then in his late 70s. He was one of the few men to have made considerable money working the Mongarlowe field during the 1930s. On seeing the site he commented immediately that it had been lived on by Ah Hack, who when he saw him in the company of his father in the 1920s, was then a very old man, possibly in his 90s. He remembered that he had a vegetable patch near his hut site and that he had been befriended by the Nomchongs of Braidwood, who took him into their home.

From then on, for whatever reason, I was, to coin a phrase, "seeing Chinese", as there is a very high percentage of sites on the Mongarlowe field that have these characteristic tailing
mounds. On reflection, the dominance of Chinese sites on the Mongarlowe field should hardly have been surprising, for contemporary observers had commented on several occasions that the field was mainly Chinese. For example, in October 1860 there were 500 Chinese people on the field, and the population was described as predominantly Chinese (Braidwood Observer and Miners’ Advocate, 6 October 1860). Similar views on the proportion of Chinese miners were made in 1862 and much later in 1870 (Braidwood Observer and Miners’ Advocate, 6 September 1862; Town and Country Journal, 4 June 1870). The predominance of Type D2 mounds on the Mongarlowe field should also have been expected, for all contemporary observers in the district commented upon the cooperative and thorough way in which the Chinese miners went about their work, in contrast to the more ephemeral efforts of the Europeans (Braidwood Observer and Miners’ Advocate, 6 February 1861, 6 September 1862).

Subsequently, several lease maps came to hand, confirming the ethnicity of this site and several others. Of particular interest was the lease map of the Bobs Creek area dating from the late 1890s (Fig. 2). The water race on the map was referred to as the ‘Chinamen water race’ and the area south of the race as ‘occupied by Chinamen’, this area incorporating Ah Hack’s claim and a large area of Type C workings (paddocking) in this area. This latter site included several closely grouped hut sites, a good artefact scatter (Fig. 3), drift tunnels (Fig. 4) and a neatly carved round hole (Fig. 5). Subsequent fieldwork suggests the latter was a mine shaft, which was subsequently converted into a well. Further Type D2 mounds were located at the terminus of the race. A map of the paddocking claims is at Fig. 6.

A lease map of Bentley’s Point, dated from the early 1900s shows three Chinese hut sites, that of Ah Yin, Ken You and Ah Kit, south of an obvious area of European settlement. Subsequent fieldwork located a small area of paddocking plus a neatly stacked type D2 tailing mound, and nearby an area which could well have been the site of the three huts (Fig. 7). The workings in this area were quite different in nature from those elsewhere at Bentley’s Point, which comprised for the most part Type D1 tailing mounds. An account of the Chinese miners at Bentley’s Point suggests that their presence on the site dates from at least the 1870s, Europeans not arriving en masse in the area until the 1890s (Moore-Bentley 1984:8–10).

Another lease map showed Mah Hack’s race and dam and a Chinese garden at Newbury’s Point. Subsequent fieldwork located the race, a small area of Type D2 mounds, and a hut site almost in the middle of the workings. This site, like Bentley’s Point, was also worked by Europeans in the late 1890s (Braidwood Dispatch, 3 November 1888). Similar sites are located at Flanagan’s Point (Fig. 8), Sapling Yard Creek (Fig. 9), Curradux (Fig. 10) and Tantulean Creek (Fig. 11). From archival evidence we know that there was a sizeable Chinese party at Flanagan’s Point, for in 1862 there was a report of a fatal accident at the diggings in which two Chinese men belonging to a party of 17 miners were killed by a fall of earth (Braidwood Observer and Miners’ Advocate, 11 August 1860). Subsequent excavations led by Lindsay Smith from the Australian National University have confirmed the ethnicity of much of Flanagan’s Point (see Smith this volume). The evidence includes Chinese artefacts and a pig oven, and in one area about 15 closely grouped hut sites.

Further fieldwork on several other goldfields in the Braidwood district revealed similar sites. For example, at North Araluen Type D2 tailing mounds were located at Deep Creek and near Majors Creek (Fig. 12). There are accounts of the Chinese miners having moved to this area during a phase of extensive capital investment by Europeans downstream.

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Fig. 1: Tailing mounds, Ah Hack’s claim, Bobs Creek, Mongarlowe.

Fig. 2: Lease map of Chinese diggings and water race, Bobs Creek, Mongarlowe, 1900.
Fig. 3: Pots and kettle, puddocking claim, Bobs Creek, Mongarlowe.

Fig. 4: Drift tunnels, puddocking claim, Bobs Creek, Mongarlowe.

Fig. 5: Round hole/well, puddocking claim, Bobs Creek, Mongarlowe.

Fig. 6: Chinese diggings, huts and other features, Bobs Creek, Mongarlowe.

Fig. 7: Tailing mounds, Bentley's Point, Mongarlowe.

Fig. 8: Tailing mounds, Flanagan's Point, Mongarlowe.
(Braidwood Observer and Miners' Advocate, 11 August 1860). On the latter site there was what at first looked like a tail race of unusually neatly stacked stone walls (Fig. 13). A local resident, Ned Wishey, informed me categorically, however, that it was a head race built by a European by the name of Marshall during the 1920s to work an area of paddocking. This seemed to put my theory about neatly packed stone walls and their association with Chinese miners to the test. However, a careful and painful traversing of an adjoining site, heavily overgrown with extremely thorny bushes, revealed a large area of Type D2 tailing mounds and an extremely intricate network of tail races draining small areas of workings, often no more than ten square metres in size. The amount of work involved in constructing the tailing mounds was clearly beyond the efforts of one man, and cannot be attributed to Marshall. Rather, they are an example of technological adaptation. Marshall used part of the main tail race constructed by the Chinese miners, and converted it into a head race, using the same technology as that employed by the Chinese miners some years earlier.

Archival, anecdotal and fieldwork research has confirmed that there was also a substantial Chinese presence at Mudmelon in the lower Araluen Valley, and a large Chinese cemetery has been located in this area. Several kilometres to the north of this is a substantial area of pothole diggings (Type A), and a close grouping of huts and small dams in the diggings or nearby (McGowan 1998:96). There are, however, no tailing mounds, so much of the evidence for a Chinese presence on this site rests less with the mining typology than with other factors. Near Bombay Creek, on the Upper Shoalhaven River goldfield, there are two sites with Type D2 tailing mounds, suggestive of Chinese activity, and two closely grouped clusters of huts (Figs 14, 15). These sites differ dramatically in appearance from all others in the area (McGowan 1996:52–55).

Subsequent visits to goldfields in other districts revealed many sites with similar characteristics. The Chinese diggings and settlement site at Kiandra have been extensively researched by Lindsay Smith (1998:208–225). On this field there were several areas worked extensively by the Chinese miners. Two of them were near their main camp, and although much of the workings have been obliterated by subsequent dredging, some small remnants of Type D2 tailing mounds remain along with some puddlers and further dwelling sites. Other large areas of workings are located several kilometres from the main camp, and include a substantial number of Type D2 tailing mounds (Fig. 16). Of particular interest is the presence of a number of stone walled enclosures, 0.5 to 1m high, downslope and adjacent to the tailing mounds (Fig. 17). Smith has correctly identified these structures as puddlers, which were used for breaking down the wash dirt. Whether this type of puddler is peculiar to Kiandra or has wider applicability is not clear, but if the latter is the case then it would be an added guide to the ethnicity of a diggings.

There were several similar sites in northeast Victoria. For example, at the Granite Flat diggings near Mitta Mitta in northeast Victoria there is strong anecdotal evidence of a substantial Chinese presence. Again there is a large area of Type D2 tailing mounds, some of which form part of an extensive system of tail races and barrow ways (Fig. 18). The settlement is located on the opposite side of the river, and comprises a number of closely grouped hut sites, at least one pig oven and a possible arak still.

On the Omeo field there was a large Chinese population, the existence of which has been documented by Alby Adams
(1996) in his book, *The Chinese Ingredient*. As in many other Victorian goldfields the Chinese miners were relocated to separate encampments, sometimes at some distance from the diggings. Near the Chinese encampment, of which there are no visible remains, is an extensive area of Type D2 tailing mounds with the usual complex of stone packed tail races and dams (Fig. 19). Of particular interest is an area about two kilometres distant, known as the Oriental Claims, the major claim in this area having been, despite the name, the site of hydraulic sluicing in the 1870s by a European company known as the Oriental Sluicing Company. However, some 50 to 100 metres from the face of the workings is an extensive area of Type D2 tailing mounds, suggesting that the first to have worked in this area would, not unsurprisingly, have been the Chinese miners. There were a number of other hydraulic sluicing claims in the area which have been identified from lease records as Chinese workings (Omeo and District Historical Society, Omeo, 1999). However, there appears, admittedly after only a fairly cursory examination, to be little in the way of mining typology to distinguish these sites from European ones.

The question of distinguishing sites worked by hydraulic or centrifugal sluicing or dredging requires some comment. There are no records of the Chinese miners having used these technologies on the Mongarlowe, Shoalhaven and Araluen goldfields, however, clearly this was not the case in northeast Victoria. Hydraulic sluicing involved the removal of the auriferous drift by the use of water conveyed under pressure to a hose which would then be turned against the face of the workings. The aim was to wash the drift down to bed rock, and thence through sluice boxes. On hydraulic sites, however, there is much less in the way of tailing mounds, with the main floor often being virtually devoid of stones. Thus one of the main
ethnically distinguishing features of alluvial mining sites, that is, tailing mounds, are not available for examination (Fig. 20).

A similar situation arises with centrifugal sluicing, which involved the use of a hydraulic elevator to raise gravel, sand and water out of diggings and into sluice boxes mounted on scaffolding. The claim was worked by hydraulic sluicing, and the tailings washed into a sump hole, from where they were sucked up the elevator into the sluice boxes above the workings. Alternatively, centrifugal dredging was used, and the gravel pumps and boilers were mounted upon barges. This form of workings was used extensively in northeast Victoria, particularly on the Yackandandah and Beechworth fields. In these workings there are even less tailing mounds than in hydraulic sluicing, because usually a large pond or lake forms over them at the conclusion of operations.

One site extensively worked by Chinese miners using centrifugal sluicing is at Wooragee, near Beechworth (known as the "Chinaman’s Claim"). This area had been worked extensively by Chinese miners for 40 or 50 years. In the early 1900s a company called the Wooragee Gold Mining and Dredging Company was formed to work the site by a centrifugal dredge. The company had a capital of £15 000, and the shares were held principally by wealthy Chinese people in Melbourne (Ovens and Murray Register, 14 January, 23 May, 8 July and 14 November 1903). Contemporary and present photographs reveal nothing in the way of physical evidence that can be used to distinguish this site from ones worked by Europeans (Fig. 21). The ethnicity of the miners who built it can only be determined by reference to archival material, which at least in this case is forthcoming.

I now turn to the question of ‘round holes’. In my earlier typology I referred to the narrow trench like shafts characteristic of high-level auriferous drifts as drift shafts, or Type E workings. They were dug at the claims to test the extent of the wash dirt but also along the line of race to test the drift in these areas as well. In appearance these shafts differ markedly from those associated with quartz mining. They are narrower and as a rule shallower, and do not have large mullock heaps, because the drift was processed in a pan or cradle and dispersed. It is now apparent that ‘carefully crafted round shafts’ (to be called Type E2) also occasionally characteristic of this type of drift, should be added to the typology. I had not identified this type earlier because they were almost, with the exception of one solitary hole at Bobs Creek and two other possible examples, largely absent in the area I had studied. I was aware of a popular view that round shafts were Chinese in origin, and I had certainly seen plenty of round holes, but there seemed to be little about most of them that was distinctive. Nor had I heard a totally convincing argument as to why they were made by Chinese miners, the most popular explanations being that they were round to ward off evil spirits or that the round shape prevented the build up of noxious gases.

In 1999, however, I was introduced to or otherwise stumbled upon three areas of these meticulously crafted shafts, all with footholds dug into their sides. These sites are at Bendigo, Little Bog Creek (south of Bombala in NSW), and Ararat in Victoria’s Western Districts (Figs 22, 23). In the first two instances local residents were adamant that the ground had been worked by Chinese miners. There were, however, no other indications by way of tailing mounds, hut sites and the like that the diggings were Chinese. To add to the confusion, at Bendigo and Little Bog Creek, round and rectangular shafts were located in very close proximity. One local view of the round holes at the latter site was that they were worked with a small handled hoe, the dirt being scraped back onto a wicker basket, and that the rectangular holes were dug by Europeans.
with a pick and shovel. At Ararat there was a very significant Chinese presence and on one site there is large number of closely grouped round holes and catchment dams, and an artefact scatter that is unmistakably Chinese.

The most convincing and plausible argument to date is that of Peter Bell, who has postulated that the round shafts were dug by Chinese miners who were also well diggers. The Chinese were often sought after as well diggers in Australia, and obviously their expertise in this area was highly regarded. This would account for the relative rarity of the round holes and the degree of perfection with which they were dug. It would also explain why rectangular and round shafts sometimes occurred in close proximity. The former were dug by Chinese miners who were not well diggers and the latter by those who were. Furthermore, as discussed above, there is one site on the Mongarlowe workings where the round shaft was converted later into a well or cistern fed by a water race.

CONCLUSIONS

Particular emphasis has been placed on the use of tailing mounds as a determinant of ethnicity of people who undertook mining at the site. With only a few exceptions, this study of known Chinese sites in the Braidwood and Kiandra Districts, northeast Victoria and Ararat, suggests, as demonstrated, that there is a direct link between ethnicity and the structure of mine workings. Vertically stacked tailing mounds, in particular, are very strong evidence of Chinese mining activities. As indicated in the examples cited in this paper, however, in determining ethnicity we should have recourse, not only to the mining typology, but also features such as the location and disposition of hut sites, artefacts, and a wide range of other evidence, which may include anecdotal accounts handed down by successive generations of local landowners. For instance, the closely clustered disposition of hut sites on allegedly Chinese mining sites suggests that this is also an important ethnic characteristic, however, further discussion of this aspect is outside the scope of this paper.

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