

Identifying Chinese ethnicity through material culture: archaeological excavations at Kiandra, NSW

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In 1860 the lure of gold attracted thousands of people to Kiandra, a remote township in the Snowy Mountains of southern New South Wales, among them were hundreds of Chinese. The Chinese were the largest single ethnic minority group in alpine Australia from 1860 until the early 1900s, comprising over half the population of Kiandra in 1863. Today, apart from four surviving buildings, Kiandra presents a scarred landscape, marked by mounds and hollows, some brick and ironwork, and broken ceramics and glassware wherever erosion has given some surface visibility. That landscape also shows evidence of an identifiable ethnic Chinese presence. Results of investigations at the remains of a miners' camp at Kiandra show the Chinese called on traditional building practices to construct their dwellings and largely maintained their traditional material culture.

In the mid to late nineteenth century ignorance of many aspects of traditional Chinese culture was often the cause of mistrust, jealousy or intolerance of the Chinese by the predominantly European communities throughout Australia. During that time Chinese work practices were both condemned and envied, their living conditions were decried as being overcrowded and unsanitary, and their social habits often considered arcane and sometimes immoral (e.g. Campbell 1971:59; Carrington 1959:140–141; Clark 1978:128; Connolly 1975:35–47; Price 1974:81–82; Selth 1971:7; Ward 1966:131). As a result, Chinese people were forced to live on the margins of society for most of the latter half of the nineteenth century in Australia.

Although representing the largest single and most easily identifiable ethnic minority group in Australia during that period, historical records of the Chinese are relatively scant. Again the situation is no different for Kiandra. Reference to their presence only fleetingly appears in some contemporary newspapers, less in official reports, and even less in individuals' recollections. However, the archaeological record at Kiandra is rich with evidence of Chinese occupation.¹

LOCATION

Kiandra's location, 1400 m above sea level and closer to Mount Kosciuszko (65 km south) than it is to either Cooma (80 km southeast) or Tumut (90 km north), makes it sub-alpine (Fig. 1). The surrounding landscape had been carved by geological activity from as long ago as the Ordovician period, over 400 million years ago (Moye 1959:73), and the almost glacial conditions of the Snowy Mountains remained the main influence on the landscape before the gold rush of 1860.

The extremes of the climate, with temperatures regularly falling below 0°C in winter and often rising to above 30°C in summer, create significant freeze/thaw conditions that influence all vegetation and animals in the area. Kiandra sits amid these conditions in a naturally treeless valley. This 'frost hollow' is a response to cold air drainage in the valleys in and around Kiandra.

The ancient geological activity in the area was not only responsible for landscape formation around Kiandra it was also the reason for the intensive human occupation in the 1860s. During the late Tertiary period volcanic eruptions from various centres around Kiandra covered large areas with basaltic lava flows and filled up old river beds for many kilometres. The sediment filled valleys, or leads, were filled with gold bearing gravel overlain by sands and other sediments. Such areas were the focus of the mining activity in the Kiandra area from 1860 (Andrews 1901:14).

HISTORICAL BACKGROUND

The Original Inhabitants

The indigenous people of the area knew it as Giandarra which meant 'stone used for making knives' (Jones 1959:2) or 'sharp stones used as knives' (Reed 1967:51). Under European occupation Giandarra, variously called Gorandarra (Gregors 1982:4), Goandara (Clarke 1860), Giandara (Moye 1959:9) and Guyandra (Dowd:n.d.) became known as Kiandra.

Early European Exploration and Settlement

Unofficial European exploration of southeastern New South Wales began in 1817, and within 33 years of the first European settlement at Sydney in 1788 the Monaro district was occupied by pastoralists and squatters (Stegemann 1985:17).

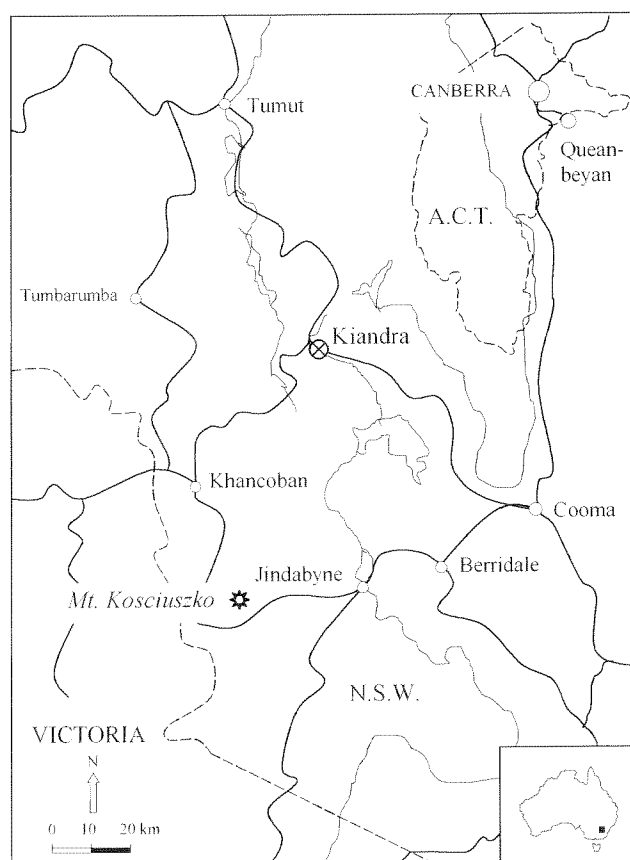


Fig. 1: Location map for Kiandra, NSW.

Thomas Pendergast may have been the first of these. It has been suggested that he settled in the Snowy River district in 1821 to graze 400 head of cattle (Gregors 1979:3).

The first recorded expedition to the Snowy River area was undertaken in 1822. An official party entered the Long Plain and the Coolamon Plains to survey the Goodradigbee River but did not venture further west into the area now known as Kiandra (Gregors 1979:3). In May 1823, Captain John Mark Currie, R. N., Brigade Major John Ovens, an ex-convict Joseph Wild, and a number of Aboriginal guides and assistants ventured a short distance onto the Monaro, and named the Snowy Mountains (Mitchell 1926:18–20). Shortly afterwards, in 1824–25, Hamilton Hume and Captain W. H. Hovell explored the country to the north and west of Kiandra on their expedition from Yass to Port Phillip (Bridle 1979:7; Mitchell 1926:20).

George Palmer first used the locality of Kiandra as an outstation in 1833. His men established a camp on a treeless plain, not far from where the Coolamine homestead was later established, and an outstation called 'Ucumbene', just below Kiandra, on the Snowy River (Gregors 1979:3). Dr Andrew Gibson, an ex-serviceman, obtained a grant of one hundred acres in the newly discovered area of the Breadalbane Plains around Goulburn. As a consequence of flooding and of the poor and comparatively limited grazing capacity of his holdings, he decided to establish an outstation in the area now known as Kiandra (Gregors 1979:4; Moye 1959:3).

The Faithfull family, related by marriage to the Gibsons, established an outstation at Yuiguihang (Eucumbene) in 1833 with 400 cattle. They ran their stock into the mountains and shared pastures with Dr Gibson and George Palmer. Gibson and Palmer abandoned their outstations at and near Kiandra shortly after severe snowstorms in 1833, and the Faithfulls left the region in the 1840s (Gregors 1979:5). Gibsons Plains is the first non-Aboriginal place name recorded in the Kiandra district.

From about mid-1840 until the late 1850s the area around Kiandra was only used to depasture migratory stock in the summer. Terrence Murray's outstation, east of Kiandra, was the only one in the area before 1858. In that year, F. A. Bluett acquired the Pinbean run in the country around the Yarrangobilly and Tumut Rivers. The farm was not far from Kiandra and was used to run cattle and sheep. This pastime left many of the stockmen with spare time to fossick for gold among the outcrops and along the riverbanks (Gregors 1979:5).

Gold and Kiandra

Two of the local periodical workers in the Snowy Mountains at that time were David and Joseph Pollock. These two brothers ran stock at Gibsons Plain (Kiandra) in the summer and removed them to a station they owned in the Tumut district in the winter. In 1859 they found a large quantity of gold in Bullock Head Creek, located about a half a kilometre west of the present Kiandra, running in a northeasterly direction into the Eucumbene River. They reported their find at Tumbarumba in June 1859 as they retreated with their flocks from the alpine winter back to their station on the Murray (Stegemann 1988:1).

Shortly afterwards, three prospectors, Gillon, Grice and Hayes, were probably despatched from Queanbeyan by a local storekeeper, J. J. Wright, to prove the existence of payable gold at Kiandra (Lea-Scarlett 1968:243). In November 1859 they reported finding payable gold at, ironically, Pollocks Creek on the southern outskirts of what is now Kiandra (Stegemann 1988:1). These reports began the rush to the area in search of gold and the town of Kiandra was born in early 1860.

Government regulations regarding goldfields and Gold Commissioners and Sub-Commissioners were well established in NSW at the time of the Kiandra gold discoveries and the Government acted quickly to reconnoitre the area and officially create a goldfield. By mid-January 1860 the area had been unofficially named Kiandra and a flow of official letters

began between various NSW Government officers. The name Kiandra first appears in a letter from Assistant Gold Commissioner Robert Lynch to Gold Commissioner Cloete on 18 January 1860. It appears on a sketch map of the area in an appendix to the letter. The map was drawn by Robert Lynch's subordinate, J. I. Lynch, probably on 17 January 1860 and may be the first time that the name was used in any official capacity. The Gold Commissioner for the Southern Region of NSW, Mr Cloete, reported the discovery to the Secretary for Lands on the 23 January 1860 and The Kiandra Gold Field was proclaimed on 10 February 1860 (NSW Legislative Assembly papers, 24 April 1861).

However, although the area abounded with gold in February 1860 by the end of the year there was very little left. Official gold production figures reveal how the happy prospect in 1860 of Kiandra solving the economic woes of the colony had soon evaporated by 1861, and by 1862 had all but disappeared. Despite extensive government planning, by 1863 the population of Kiandra was reported as 'being not very large' (*The Sydney Morning Herald*, 10 March 1863), and the maximum number of people in the town for that year is estimated to be about 650. By 1872 it is estimated that the population of the town and its surrounding area had fallen to around 350.

From then, until the end of the nineteenth century, Kiandra remained a small rural township with its population fluctuating between 170 and 350. Although it became a popular tourist destination for fishing and skiing in the early 1900s, by the 1950s only five residents remained. In 1966, Kiandra, a now deserted township, was incorporated into the Kosciuszko National Park.

The Chinese at Kiandra

The Chinese first arrived at Kiandra in the middle of winter in 1860. Two weeks after taking up duty as the agent for the Bank of New South Wales at Kiandra, George Preshaw noted in his diary on 4 June 1860, 'Eighty Chinamen arrived; I was talking to their head man, who told me he expected there would be 20 000 of his countrymen here in less than six months' (Preshaw 1888:55). During his fourteen months there, Preshaw would have seen the Chinese population at Kiandra increase from the original 80 to a peak of around 700, or about 20 per cent of the population of the area, during July and August 1860. Although this figure is well short of the predicted 20 000, it nevertheless represents a significant presence of Chinese people at Kiandra during the height of the gold rush.

Communication among the Chinese on the goldfields in NSW and Victoria was always good, and intelligence often passed quickly between widely dispersed groups. It is not surprising then for the first Chinese headman at Kiandra to make such a bold prediction on the numbers of his countrymen expected to arrive in the near future. Unfortunately, similar to his Europeans counterparts, he also was mistaken.

Preshaw's short diary entry reveals that this vanguard of Chinese was subject to the credit ticket system of employment. Under this system Chinese men were advanced funds for their passage to Australia by businessmen, agents, relatives or friends and were required to repay the amount plus interest. The benefactor, or headman, sometimes travelled with his group of debtors to Australia and remained with them to direct their work on the goldfields until their agreement with him was fulfilled (Carrington 1959:128). The impoverishment of southern China during the nineteenth century pressed heavily on the toiling villagers and there was probably little difficulty in collecting small bands of volunteer emigrants under this system (Campbell 1971:57–58). Many of the Chinese who came to Kiandra were from Fujian and Guangdong Provinces in southeastern China (Tait 1977:82).

Although this group employment arrangement was well organised and very successful for the Chinese at Kiandra, indi-

vidual Chinese also came to the area. These included storekeepers, butchers, bakers, tailors and doctors who plied their trades and professions throughout the Kiandra district from 1860 until 1916. They lived in small groups around the town, and, as elsewhere in Australia, established a number of camps on the field. At different times, they established small camps at Chinamans Flat (several kilometres to the north of the town), Jackass Flat (near New Chum Hill just north of the town), and at Pollocks Gully (Gregors 1979:12; Perkins Papers Vol. 3: 684, Tait 1977:83). Their main camptown, however, was about 1 km to the east of the township, and existed from mid-1860 until around the turn-of-the-century. From then until 1916 the social and economic life of the remaining Chinese at Kiandra centred on a complex of buildings on the southern outskirts of the town, near Pollocks gully. These men came mainly from the goldfields in northern Victorian, around Beechworth, and from the goldfields in southeastern NSW, on the Shoalhaven.

By the early 1890s the Chinese camp at Kiandra, once comprised of hundreds of Chinese people in the 1860s, contained only a handful of men. When the census papers were distributed in early April 1891, *The Sydney Mail* (11 April 1891) reported the census was being performed in a perfunctory way and when:

all the papers are supposed to be filled up tonight, the writer knows at least 5 or 6 places in the immediate neighbourhood of this town [Kiandra] where no papers have been delivered—for instance at the Chinese camp...where 9 Chinese reside.

Only three historical references give any clues to the location of the Chinese camp and none reveal any details of its size, layout or the types of dwellings. The few available historical references are of little help in establishing the location of the camp, as can be seen from the following:

A few hundred Chinese have located themselves here, and their interpreter states that 20 000 of them will arrive early in the spring. Mr Cloete [the Gold Commissioner for the Southern Goldfields] is arranging to remove them all from the township to a site on the hill fronting the Government Camp, on the eastern side of the gully. (from a letter dated 22 June 1860, *The Braidwood Observer & Miners' Advocate* 7 July 1860);

The Chinese camp is a little to the east of the township, pretty comfortably sheltered under the brow of a small

piece of rising ground. The Commissioner has requested them to remove under the shelter of another hill-site, a small distance to the right, which a number have done, and thereby opened another settlement apart from all Europeans...(*The Sydney Morning Herald* 30 June 1860);

and,

From numerous complaints of the diggers it has been found necessary to remove the two Chinese camps already formed as too near the town, and today long files of them were seen bending under huge packages, wending their way to the allocated ground, about half-a-mile down the river...(*The Sydney Morning Herald* 9 July 1860).

In addition to the above references, a number of local Tumut and Adelong residents also stated that the Chinese miners 'used to live to the east of the town [Kiandra] near the river [Eucumbene River]' (P. Dowling, R. Giddings, and P. Smith, pers. comm.)

ARCHAEOLOGICAL INVESTIGATIONS

Although Chinese miners were reported to have established a number of camps in the vicinity of Kiandra during the late nineteenth century, archaeological surveys of a wide area around the old township revealed evidence of only one. Small camps that once may have been at Chinamans Flat, Jackass Flat and at Pollocks Gully have long since disappeared. Extensive later mining activity and natural erosion has obliterated all traces of those camps. The remains of the surviving camp also show evidence of significant destruction from dredging and natural erosion.

This surviving site was located following initial observations in late February 1995. Those observations revealed a possible camp site next to the Eucumbene River about 1 km east of the town. Inspections of that area showed an extensive scatter of historical artefacts along the eastern, downslope side of a spur overlooking the river. The thousands of mainly fragmentary artefacts demonstrated evidence of mining activity and domestic occupation.

The area of the camp site also contains a number of stone arrangements that appeared to be cultural in origin. During November 1996, and January, February and March 1997, surveys, surface collections and excavations were undertaken at

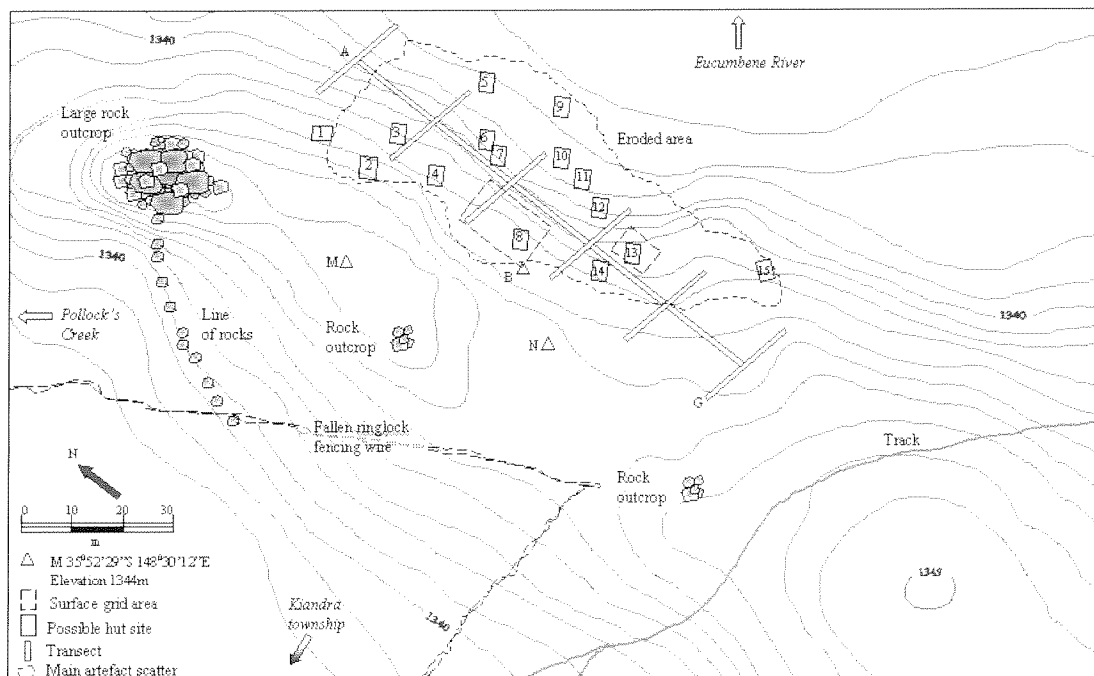


Fig. 2: Plan of Chinese camp site at Kiandra, NSW.

two of the stone arrangements. The first of the stone arrangements, represented by a mound of large stones, may have been some kind of structure. The second group, a much more ephemeral scatter of rocks on and in the ground, initially did not appear to be any kind of structure.

Surveys of the area undertaken in late 1996/early 1997 established the location of the camp on a spur overlooking and immediately to the west of the Eucumbene River at an altitude of 1344 m, approximately 1 km east of the main township. Observations and surveys identified at least 15 other stone arrangements at the site, with possibly many more on the eastern, downslope side of the site towards the river. To a large extent these latter arrangements appeared to have been destroyed by dredging and/or erosion. Figure 2 is a plan of the camp.

In seeking to establish the Chinese ethnicity of the occupants of the camp, and to ascertain whether particular architectural features or modes of construction could be clearly associated with such an ethnic group, detailed investigations were carried out on two of the stone structures at the camp, Sites 8 and 13 (Fig. 2).

Excavation of an area consisting of approximately 12 m² was undertaken at Site 8 in early February 1997 (Fig. 3). It revealed a rectangular structure with internal measurements of approximately 3.1 m by 2.1 m. Its walls were constructed of local unworked stones with earth fill to a height of about 1.5 m. The walls were random rubble, the simplest and poorest quality of masonry (Fig. 4). This method uses stones of different sizes and shapes bonded together with, in this case, earth but without any regular coursing being apparent (Connah 1988:64–65). The base layer of the stones was beneath ground level to a depth of up to 15 cm in some places. The floor of the structure was tamped gravel and earth.

The rear of the structure was built into a small hill and the front had an entrance approximately 1 m wide that faced northeast. Excavation in the entrance revealed evidence of part of a wooden doorframe made from local White Cypress Pine (*Callitris glaucophylla*) (N. Cromer, pers. comm.) was recovered. It had pieces of calico and tin attached to it by a tack with a leather washer (Fig. 5). These artefacts showed evidence of being burnt. There was no evidence of a chimney or external fireplace attached to the structure but from the amount of charcoal recovered from the interior, it appeared there was a fireplace or hearth inside the structure against the front wall, to the right of the entrance. A picture emerged of a rectangular hut with a built-up stone base, an internal/external

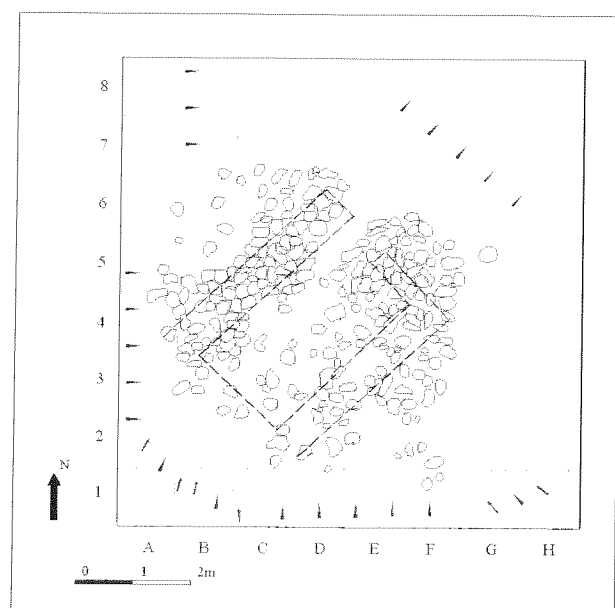


Fig. 3: Plan of hut site No. 8.

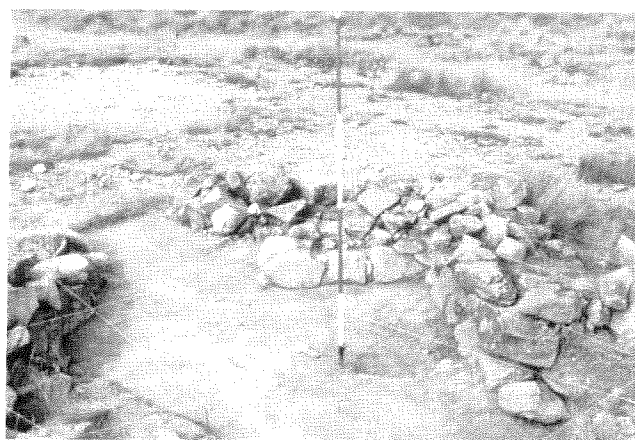


Fig. 4: View of excavation of hut site No. 8 (facing northeast).

wooden frame covered with calico and parts of kerosene tin secured to the roof and an internal hearth/fireplace.

Excavation of an area consisting of 21 m² was carried out at Site 13 in late March 1997 (Fig. 6). This work revealed another rectangular-shaped structure, albeit less well defined than the first, measuring approximately 3.1 m x 2.1 m with "walls" constructed of rocks and earth, and a door opening approximately 1m wide and facing northeast (Fig. 7). The "walls" consisted of unworked local stones and earth. The stones of the base were only a few centimetres below ground level and were built up to about 10 cm in some places. As far as could be determined, the floor of the structure was also tamped gravel and earth. Although no evidence for a fireplace or hearth was found during the excavation, it was apparent both excavated structures were of similar design and orientation. A picture again emerged of a site consisting of a rectan-

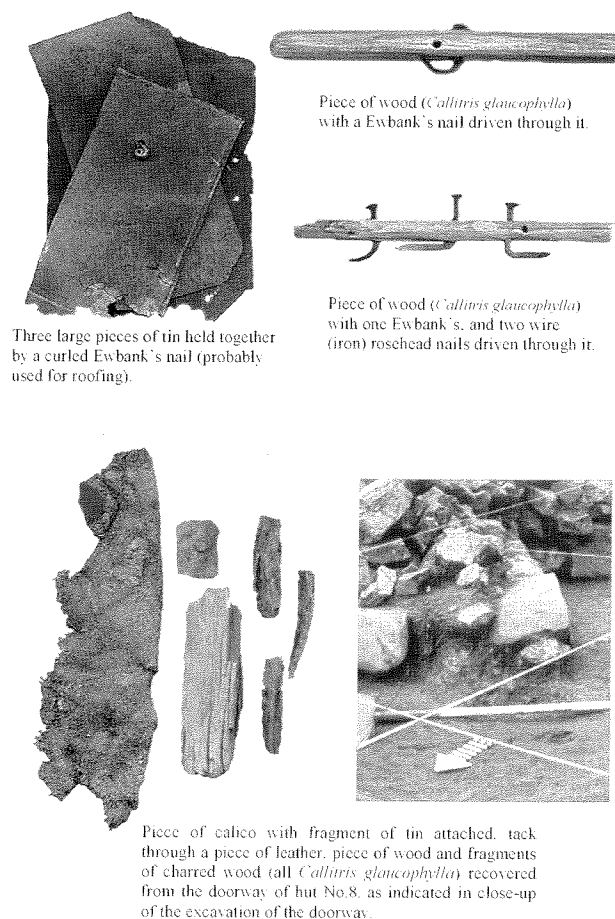


Fig. 5: Some of the remains of construction material recovered from hut site No. 8 at the Chinese camp.

gular hut with a built-up stone sub-structure, probably with an internal/external wooden frame covered with calico.

Architecture and construction

The architecture and construction of the hut remains at the Kiandra camp is representative of traditional vernacular Chinese dwellings with a past reaching back as far as 8000 years. The two huts investigated at Kiandra were strikingly similar. The layout of both was rectangular, as were the others at the camp, both had a base of local stones and earth built into the ground and both had a tamped earth floor. Neither displayed evidence of a fireplace with an external chimney but one had evidence of an internal hearth next to the doorway. Both had similar internal dimensions, measuring approximately 3.1 m by 2.1 m, and there was structural evidence that one, and probably both, may have had an external/internal wooden upper wall and roofing frame covered with calico and parts of kerosene tin secured to the roof. A number of these architectural and construction techniques are common in the most basic dwellings of rural China, particularly southern China, and are evident at similar Chinese sites overseas and in Australia.

The typical rural dwelling in northern China traditionally has been a one-storey rectangle with a depth of only a single room. At its simplest, the dwelling is a small space enclosed by four walls lengthening into a substantial rectangle as circumstances permitted (Knapp 1986:26). Migrating pioneers brought the classic rectangular northern housing layout to the south and adapted it to local conditions (Knapp 1986:39). However, dwellings in southern China were not strictly sited facing south but rather were built in accordance with local topographic and microclimatic conditions (Knapp 1986:51). Many other writers have also noted the basic ubiquitous rectangular shape of the typical rural Chinese dwelling (among them Needham 1971:67–68; Ritchie 1986:47; Sisson 1993:36–37).

A basic characteristic of Chinese architecture has always been the addition at will of repeating units keyed to the size and scale of human beings, pillar-intervals of bays (*jian* or *chien*) in buildings, and spaces in open-air courts. This harmonious assembly of units, each fixed to the human scale, is deeply Chinese because it is universally, not occasionally, practiced in that culture. It is a working norm rather than an aesthetic theory (Needham 1971:67).

The smallest Chinese dwelling comprises a single *jian*, a nucleus of habitation providing flexible use of a common space for living, cooking, sleeping, and other activities. The *jian*'s width and depth not only vary from place to place in the country but also differ according to the intended grandeur or simplicity of the dwelling. Throughout Zhejiang, in southeastern China, the *jian*'s width ranges from 3 m to 5 m with a proportional depth varying from 5 m to 10 m (Knapp 1989:34).

The use of a single-*jian* construction for the basic dwellings can be seen at the Kiandra Chinese camp and examples are common at overseas Chinese sites in the United States of America, New Zealand and elsewhere in Australia (e.g. Bristow 1994; Mitchell 1994; Ritchie 1986, 1993; Sisson 1993; Vivian 1985).

The internal living spaces for the huts at the Chinese camp at Kiandra average 6.82 m². These measurements are much lower than Knapp's broad range of between 15 m² and 50 m² for dwellings in Zhejiang, in southeastern China. Yet they are higher than those noted in the description of a dwelling in China of around 1870 where internal living space was stated to be 5.76 m² (Conwell 1871 in Sisson 1993:37). Although this variability and consequently the use of hut sizes to determine Chinese ethnicity has largely been approached subjectively to date, it is noteworthy that the internal living spaces of the hut sites at Kiandra fall within the broad range of sizes for similar dwellings in China (Table 1).

A detailed comparative examination of the internal meas-

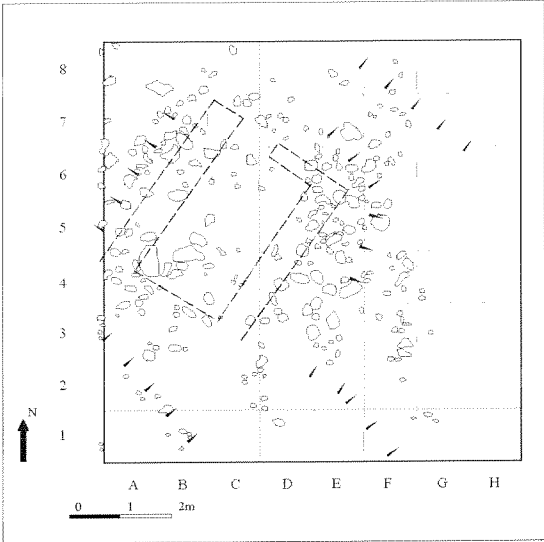


Fig. 6: Plan of hut site No. 13.

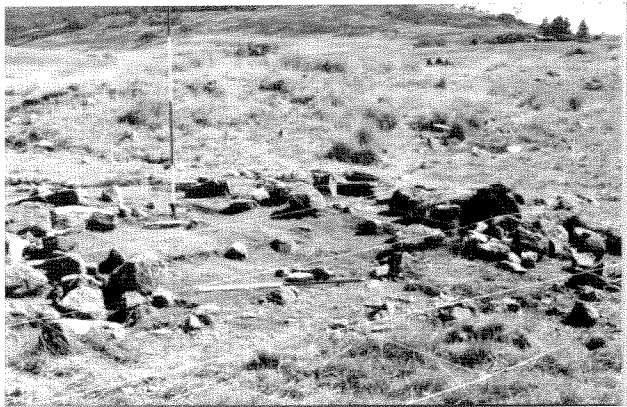


Fig. 7: View of excavation of hut site No. 13 (facing southwest).

urements of nineteenth-century Chinese dwellings in the United States of America, New Zealand and elsewhere in Australia show that hut sizes at Kiandra fall within the same size range as Chinese dwellings elsewhere.

In China, consistent with building traditions dating from at least the Shang dynasty (roughly 1600–1100 b.c.e.), a tamped earth foundation or podium at grade level or only slightly elevated is used as a base for dwellings (Knapp 1989:68). Pounded earthen floors continue to be used in many parts of rural China (Needham 1971:134; Werner 1950:50). When troughs and underground conduits are used to drain water around the outside of a dwelling, tamped foundations provide a dry footing for a dwelling. Northern Chinese people carried this preference for building directly on the ground when they migrated to southern China, using it even where its appropriateness was questionable and where indigenous tradition offered an alternative (Knapp 1989:68). This preference was also carried to Kiandra, and tamped earth foundations have

Table 1: Internal living space for huts at the Chinese camp at Kiandra

Hut No.	m ²	Hut No.	m ²
1	5.25	9	6.00
2	10.50	10	6.25
3	6.00	11	6.50
4	7.50	12	6.25
5	6.25	13	6.50
6	7.00	14	8.25
7	6.00	15	7.50
8	6.50	Average	6.82

been commonly reported from other similar Chinese sites, for example, Sisson (1993) in the United States, Ritchie (1986, 1993) in New Zealand and Mitchell (1994) in Australia.

To reduce the absorption of soil moisture by the walls, stone foundations and wall footings are commonly laid around the perimeter of tamped earth of Zhejiang dwellings in south-eastern China. In these dwellings the rough-cut stones are usually packed tightly below the ground, following their natural shapes and held without mortar, while mortar is used with elevated bases. The depth of the footings, sometimes nearly a metre deep, is designed to support the weight of the dwelling. The main function of such structural underpinnings is not to fasten the structure to the ground but to stabilise the base and separate the structure itself from the damp ground below. In most cases the stone foundations of such dwellings are raised above ground level to protect the lower wall from water damage (Knapp 1989:68). Such foundation and wall types are also found at Kiandra, and again are commonly reported from many other similar sites elsewhere overseas and in Australia.

LaLande (Sisson 1993:54) found that some Oregon Chinese miners used rectangular platforms excavated into slopes usually with dry-stone reinforcing walls. According to Sisson (1993:54), Chinese miners' habitations along the Lower Salmon River consisted of rock and earth walls.

Ritchie (1986:144) stated that the majority of the foundations and base walls of the Chinese huts at Cromwell and Arrowtown in New Zealand were built of either cobbles or a combination of cobbles and/or mud. He commented on the common use of local stone material for foundations and walls and the random rubble nature of their construction. There was little consistency in the stacking of the cobbles within and between individual huts and they were often stacked horizontally, vertically or diagonally within a short section of a wall. In other areas the wall outlines were only evidenced by a rectangle of local schist slabs, seldom more than two stones deep and which may have secured a canvas structure. Ritchie (1986:145) also found that a common feature of the Chinese huts at Cromwell was the building of one or more walls into an adjacent bank or slope. Such types of foundations and base walls constructed from local stone stacked in a random manner can also be seen from the remains of huts on the Palmer goldfield of Northern Queensland (Comber 1995:43–44).

Structural systems based upon wooden frameworks to sustain the roof load independently of the walls emerged early, becoming subsequently a paramount characteristic of the architecture of Chinese palaces, temples, and residences (Knapp 1989:69). Roofing materials for rural dwellings in China depended on local materials but commonly consisted of grass or thatch, or even a thin layer of straw added atop layers of plastic and oiled paper in more recent times (Knapp 1986, 1989). The evidence available from the Chinese camp at Kiandra suggests similar framework and roofing characteristics. At Kiandra the remains of wooden frameworks, some with calico and tin attached, flattened tin cans held together with nails, and wooden struts with nails through them, together suggest a light timber framework covered with locally available materials, in this case, calico and kerosene tins.

Again, evidence of this type of frame and roofing construction is seen at similar sites overseas and in Australia. In the United States excavations near Pierce, Idaho, indicate that the Chinese habitation there was constructed of framed lumber (Stapp & Longenecker, in Sisson 1993:54). While some of the early Chinese structures in Sacramento, California, were made of wood and canvas (Praetzelis & Praetzelis, in Sisson 1993:55). Ritchie (1986:149) reported wooden frameworks and roofs consisting of corrugated iron, tussock thatch, wooden shingles and flattened kerosene tins at Chinese miners' huts in New Zealand. In Australia, Jack et al. (1984:51) describe Chinese dwellings as being constructed of thatched grass or wood and bark, some with corrugated iron roofing.

Typically in China doors and windows are only situated at the front of a dwelling with no breaks or openings in other walls. Windows are usually placed high, not only to block the direct rays of the sun but also to reduce ground radiation and provide a degree of security. Therefore a southern orientation for a dwelling creates satisfactory passive solar conditions (Knapp 1986:26). This arrangement reflects not only environmental awareness but also the sanction of cosmological authority through the symbolic practice of *feng shui*. In Zhejiang, in southeastern China, with its much longer summer season and relatively warmer winter than in northern China, builders block the sun's penetration by using few windows and greater depth. Such a configuration helps to keep direct sunlight from reaching the interior of the house. This has resulted in dwellings throughout Zhejiang province generally exceeding 5 m in depth, approximately twice that of northern dwellings where the low angle of the winter sun is able to penetrate very deeply into the dwelling (Knapp 1989:29).

At Kiandra there is little evidence of window glass and, given the extremes of climate and the probable very simple framework and roofing construction of the huts, it would seem unlikely to find many, if any, windows in the dwellings there. This was also the case in New Zealand where windows do not appear to be a common feature in Chinese huts (Ritchie 1986:149). Windowless dwellings appear to be common in the United States (Sisson 1993:56). Widespread among the limited studies of architectural features of overseas Chinese miners' dwellings is the acceptance that doorways are predominantly at the front or short-side of the houses (see Bristow 1994; Ritchie 1986, 1993; Sisson 1993). This is also the case at Kiandra. However, most of the discussion about doorways in other studies focuses on orientation in attempts to find some commonality that may perhaps be used as an ethnic identifier. Those studies have found a variety of aspects, with doorways facing towards nearly all points of the compass and no satisfactory explanation has been proposed for such variety. At Kiandra the doorways are predominantly orientated towards the northeast. As discussed earlier, the reasons for this are to suit the local topography and gain optimal sunlight, thereby also gaining maximum *yang*. It is proposed that such practical and symbolic considerations may also be the rationale for doorway orientation at other sites.

Much of the discussion in those studies also seeks to emphasise the presence/absence and placement of chimneys in overseas Chinese dwellings. There is much less discussion on other interior features, such as general heating, cooking, and washing and toilet facilities. In relation to these features in China, Boyd (1962:82) noted the general method of heating houses was always the portable charcoal brazier, usually in the form of a bowl, prepared by servants outside and brought into the rooms in a glowing condition. These were sometimes in the form of portable earthenware pots and portable stoves (Hommel 1993:37). There were never any chimneys in Chinese houses. The kitchen was sometimes in the open air, on a verandah or in an out-house (Boyd 1962:83). Conwell (Sisson 1993:37) reported that all cooking took place at the back of the house. Knapp notes that where the kitchen was inside a dwelling the stove had neither the centrality nor the significance of the hearth in western society but care still attended its positioning and construction. Above the stove in Chinese homes even today a niche is constructed for *Zaojun*, the Kitchen God. Knapp (1989:144–147) also states that the kitchen usually flanked the entrance and its normal location was on the eastern end of a house. This was the case in Hut No. 8 at Kiandra where evidence of a hearth was found adjacent to the doorway on the northeastern facing front wall. Hearths/fireplaces/chimneys found at the remains of other Chinese huts overseas appear to be predominantly adjacent to the doorway (Ritchie 1986:148; Sisson 1993:43–46).

Boyd's (1962:83) statement that there were no chimneys

in Chinese houses appears to apply to the Chinese dwellings at Kiandra but not universally to those dwellings investigated by Ritchie (1986) in New Zealand or Sisson (1993) in the United States. It is suggested that the lack of chimneys at the Kiandra dwellings was due to their early construction dates of 1860 and represented a direct transference of traditional hut construction from southern China. The dwellings examined by Ritchie and Sisson appear to have later construction dates of the 1870s and 1880s and it is conjectured that the chimney may have been a later, adopted feature by the Chinese at those sites (Ritchie 1986:11; Sisson 1993:35).

The final features of Chinese dwellings requiring a brief mention are the bathroom, washing and toilet arrangements. The bathroom does not usually appear in the plan of a Chinese house at all. Boyd (1962:83) notes that all toilet arrangements in the house of a well-to-do, including bathing and washing, were generally provided for by means of basins, bathtubs, and commodes brought to private rooms by the servants. Knapp (1989:57) states that in China, where running water is available, it is often brought to a separate brick sink located outdoors where it is available for washing purposes. He also notes toilets were not inside but often built as a separate little shed in some convenient corner, sometimes at the back of dwellings adjacent to pens for pigs and chickens. Boyd (1962:83) confirms this arrangement stating that the privy was a separate structure placed over a rectangular hole about two feet deep.

As a result of the separateness and ephemeral nature of these washing and toilet arrangements, evidence of them is rarely reported at archaeological sites. Their absence within huts sites at the Chinese camp at Kiandra and at other similar sites overseas bears the hallmark of them being located separately. However, although not found at Kiandra, there is now substantial evidence of separate Chinese ovens within mining settlement sites in Australia (Bell 1995:213–229; Comber 1995:46).²

In synthesizing the architectural and construction features of the huts at the Chinese camp at Kiandra, it is evident they have numerous features in common with basic dwellings in China. Not only in a traditional practical sense but also in a symbolic one. These common features include:

- a single-*jian* rectangular shape;
- an internal living space within the range of similar dwellings in China;
- tamped earth floors;
- stones tightly packed below the ground which rise above the ground to form a base-wall with 'random rubble' masonry;
- a light wooden internal/external frame;
- roofing of impermanent material (calico and flattened kerosene tins);
- a doorway at the front that, together with the hut itself, is orientated to optimise both sunlight and life (*yang*);
- an internal hearth adjacent to the doorway;
- the absence of internal bathroom, washing and toilet arrangements.

From the above discussion, it is evident many of these common features are found at similar Chinese sites dating to the mid to late nineteenth century in the United States of America, New Zealand and elsewhere in Australia.

Artefacts

A surface collection of artefacts from an area of 160 m² at Site 8 yielded 110 ceramic sherds weighing 1.6 kg, 375 pieces of glass weighing 4.3 kg, 337 nails and other metal fasteners, and hundreds of miscellaneous items. The miscellaneous items included 28 small pieces of bone, one bullet casing, several pieces of rubber shoe soles, four pieces of shoe leather, one large hinge, part of an opium tin, part of a spoon, half a pair of scissors, a clay pipe

stem, two Chinese coins, parts of iron cooking pots and riffle boards, several pieces of wood and hundreds of fragments of tin.

Artefacts recovered from the excavation of approximately 12 m² at Site 8 included 90 ceramic sherds weighing 57 g, glass artefacts weighing 68 g, 786 nails and other metal fasteners, and hundreds of other miscellaneous items. These items included two clay pipe stems, metal hooks, seven small bones, the remains of a toothbrush, part of an opium tin, and hundreds of pieces of wood, tin, charcoal, leather, and calico, some of the latter were attached to pieces of tin.

A surface collection carried out over an area of 48 m² at Site 13 yielded 71 ceramic sherds weighing 464 g, glass artefacts weighing 2.7 kg, 325 nails and other metal fasteners, and hundreds of other miscellaneous items. These items included 33 small pieces of bone, five metal hooks, several pieces of timber and well over a hundred fragments of tin.

Artefacts recovered from the excavation of 21 m² at Site 13 included 64 ceramic sherds weighing 887 g, glass artefacts weighing 2 kg, 1100 nails and other metal fasteners, and over a hundred miscellaneous items. These items included seven metal buttons, one buckle, pieces of four Chinese coins, seven small pieces of bone, several pieces of rubber from the soles of shoes and over a hundred fragments of tin.

According to McGuire (1982:163–164), the most productive data classes in identifying the material symbols of ethnicity are food remains, ceramics, and architecture. At the same time he cautions us not to assume that ethnicity is the only causal agent in identifying these and other data classes. Economic status, prestige, religion, and occupation can be equally influential. While the latter of McGuire's data classes, architecture, has been shown to be an effective identifier in the case of Chinese ethnicity at Kiandra, the second of those, ceramics, is addressed below. There were insufficient food remains recovered from the site to conclusively suggest any ethnically specific foodways.

With regard to his caution, those alternative causal agents may be equally influential in relation to the presence of glassware, nails and miscellaneous artefactual material at a site.³ Yet the presence of Chinese ceramics at a site is generally accepted as the most obvious and valid indicator of an ethnic Chinese presence (see, for example, Ritchie 1986:206; Wegars 1988:44). However, other causal agents such as economic status may be inferred from the grade of Chinese ceramics at a site.

Ceramics

With a background of somewhat limited research into 'everyday' Chinese ceramics Ritchie produced one of the first comprehensive typologies of Chinese ceramics in his study of the Chinese in New Zealand (Ritchie 1986:206–280). Since then a number of studies have added to our knowledge of overseas Chinese ceramics. One of the most recent and helpful typological references recording previously undocumented Chinese artefacts is by Hellman and Yang (1997:155–203). Several studies have now confirmed that the occurrence of typical Chinese artefacts, especially ceramic containers for traditional foodstuffs, is one way of identifying a Chinese ethnic presence at a site (for example, Bristow 1994; Heffernan & Smith 1996; Lydon 1996; Svenson 1994).

Archaeological sites formerly occupied by Chinese immigrants produce ceramic artefact assemblages with readily identifiable ethnic origins. As these artefacts are quite different in comparison with their European counterparts, it is possible to recognise the types that occur most frequently on sites once occupied by people from China (Wegars 1988:44).

Early Chinese arrivals to overseas mining sites in the United States of America, Australia and New Zealand may have had few material possessions but, by the 1850s in the United States, there was regular trade in familiar foods, beverages, smoking material and other items from China (Wegars 1988:44). By the

1860s this was also true for Australia, with one scholar suggesting that by the latter half of the nineteenth century there were separate trade networks operating between China and Australia exclusively for the Chinese (McCarthy 1988). Similarly, in New Zealand, Chinese ceramics recovered from nineteenth-century sites were made in China and imported by Chinese merchants for use by the resident Chinese population. Most Chinese ceramic artefacts relate to the packaging, transport, storage, preparation, cooking or consumption of food and beverages, as well as opium smoking (Ritchie 1986:206).

The Chinese ceramic artefacts recovered from the surface collections and excavations of the two hut sites investigated at the Kiandra camp were classified according to the major artefact categories of The Asian Comparative Collection at the University of Idaho. It now contains an extensive collection of original Chinese artefacts (Wegars 1988:43). These ceramic categories are brown-glazed stonewares (often simply called brownwares), porcelains (with a separate sub-category for celadon ware), and ceramics associated with opium smoking. For the purpose of separate identification the latter is classed as 'clay' in this study. For consistency, these classes were also used for the European ceramics recovered from the site, except that the classification of 'clay' was used to identify tobacco pipes.

Chinese brownwares include alcoholic beverage bottles, soy sauce bottles, shouldered, straight-sided, globular and barrel-shaped food storage jars and their lids. Chinese porcelain and porcellaneous stoneware were primarily used for tableware with a variety of common glazes and motifs. The most common glaze is pale bluish-green, called celadon. The most common patterns are blue-on-white ones known as 'Bamboo' or 'Blue Flower', and 'Four Flowers' or 'Four Seasons'. Other less common patterns include the blue-on-white 'Double Happiness' and the 'Attributes of the Eight Immortals' patterns. Opium related ceramics are opium pipe bowls, in dark grey stoneware or reddish orange earthenware. Most are plain but some bear inscriptions and may be quite ornate. More detailed descriptions of Chinese ceramics may be found in a number of publications (Etter 1980:97–101; Hellman & Yang 1997:155–203; Jack et al. 1984:56; Lydon 1996:Appendix 1; Mong 1987:201–208; Ritchie 1986:206–280; Sando & Felton 1993:151–176; Svenson 1994:107–109; Wegars 1988:43–48; Valenstein 1975; Wylie & Fike 1993:255–306).

British stonewares include specialised stoneware containers, such as crocks, storage jars, beverage bottles and liquid products. The latter includes bottles for ginger beer, ales, inks, blacking and jams (Ritchie 1986:281). British earthenware is usually white and generally restricted to tableware and ornaments. There are a variety of glazes, such as 'Rockingham' a mid to dark brown glaze, and decorative techniques associated with British earthenware that include gilding, edge-banding, hairling, hand painting, transfer printing, flow blue, and lithographic transfers. A common pattern for British tableware was the 'Willow Pattern'. Nineteenth-century European tobacco pipes were predominantly made from white clay and are usually identifiable from the style, size and makers' marks or designs. A wealth of literature exists on fine export-rated British ceramics, less on everyday-ware, but there is now a growing body of work on clay tobacco pipe manufacture. Examples of descriptions of European ceramics and clay tobacco pipes may be found in Aldridge (1969), Goodwyn (1989:70–82) and Ritchie (1986:280–296), to mention just a few.

Although Chinese ceramics are usually readily identifiable at an archaeological site, some care is needed when determining their country of origin. This is due to an increased European influence in China in the late 1800s. At that time, European scenes began to appear on Chinese porcelain and pseudo-Oriental designs began to be applied to English ceramics exported to Australia (Quellmalz 1976:76). Even with these factors and the fragmented nature of the ceramic artefacts at the Kiandra camp site, there was a very low proportion

of artefacts whose country of origin could not be identified.

Ceramics from the site were identified by location, fabric, shape and function. The numbers of artefacts, their weight, and country of origin were recorded together with comments to assist identification. Comparisons of particular ceramic types in this study are presented by weight rather than by the number of pieces. This is because, for example, a particular type of porcelain may have 15 sherds that together weigh only 3 g, while a single piece of storage jar may weigh over 100 g (Martin 1996:41).

The results of the analyses of ceramic artefacts from the surface collection at hut Site 8 show those of Chinese origin represent 98.9 percent, those of British origin comprise 0.1 percent, and those which could not be identified constitute 1 percent. Ceramics recovered from the excavation of hut site 8 revealed 85.9 percent were of Chinese origin, 2.1 percent of British origin and 12 percent were unidentifiable. The results of the analyses of ceramic artefacts from the surface collection at hut site 13 show those of Chinese origin represent 98.1 percent, those of British origin comprise 0.5 percent, and those which could not be identified constitute 1.4 percent. Ceramics recovered from the excavation of hut site 13 revealed 97.2 percent were of Chinese origin, 1.1 percent of British origin and 1.7 percent were unidentifiable.

The combined results of the analyses of ceramic artefacts from the surface collections and excavations from both hut sites at the camp show those of Chinese origin represent 97.9 percent, those of British origin comprise 0.5 percent, and those which could not be identified constitute 1.6 percent of the total collection. The combined results of the analyses of the types of ceramic artefacts from the surface collections and excavations from both hut sites at the camp show that brownwares comprise 95.2 percent, porcelain 2.1 percent, celadon 1.3 percent, and clay 1.4 percent.

As can be seen from these results, Chinese brownwares dominate the ceramic artefacts recovered from the site. There were several large pieces of Chinese food storage jars including parts of bases, tops and lids among the collection, but the bulk of the brownwares consisted of very small fragments of a number of soy sauce jars and other smaller Chinese food and liquid containers (Fig. 8). Apart from part of a small dish with a 'Bamboo' design recovered from the excavation at hut site 8 (Fig. 9) the remainder of porcelain pieces were very small fragments. No British porcelain was identified from the collection areas. Most of the celadon artefacts recovered were also very small fragments. Some however were identified as parts of rice bowls and a spoon handle. Except for one fragment decorated with part of a 'Four Seasons' motif, the celadon pieces are plain. Part of a maker's mark appears on the base of one of the fragments but has not been identified. Figure 10 shows some of the larger pieces of celadon ware recovered from the Chinese camp at Kiandra.

The 'clay' artefacts comprise mainly parts of opium-pipe bowls. Although a number of these were fragmentary, four pieces recovered provide good examples of typical Chinese opium-pipe bowls. Part of one of the bases of these bowls has inscribed Chinese characters but again these could not be identified. The larger of the bowl remains are shown at Figure 11 together with parts of stamped metal opium can lids recovered from the hut sites.

The only ceramics that could definitely be identified as British in origin were parts of a number of clay tobacco pipes. One part of a pipe bowl recovered displays a pony's hoof design and can be dated to the late nineteenth century (Ayto 1994:16). While two pipe stem fragments are marked with the maker's name of 'DAVID...' and 'DAVIDSON'. Thomas Davidson & Co. (Caledonian Pipeworks) manufactured clay pipes in Glasgow, Scotland, between 1862 and 1911, and the two pipe stem fragments can be dated to the mid to late nineteenth century (Davey 1987:110–141; Foster 1983:94–101).

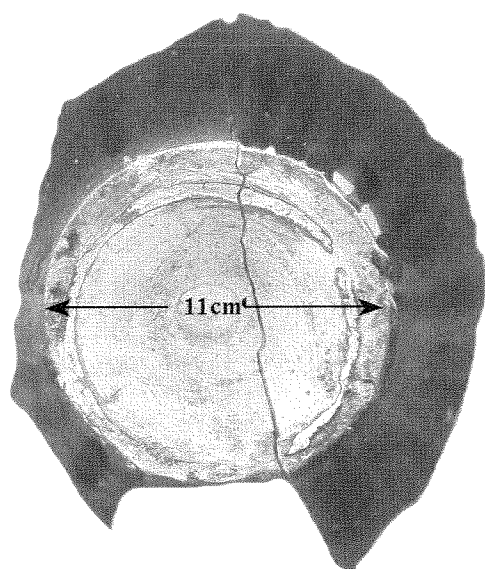


Fig 8: Example of brownwares recovered from the Chinese camp at Kiandra — base of a brown glazed globular storage jar.

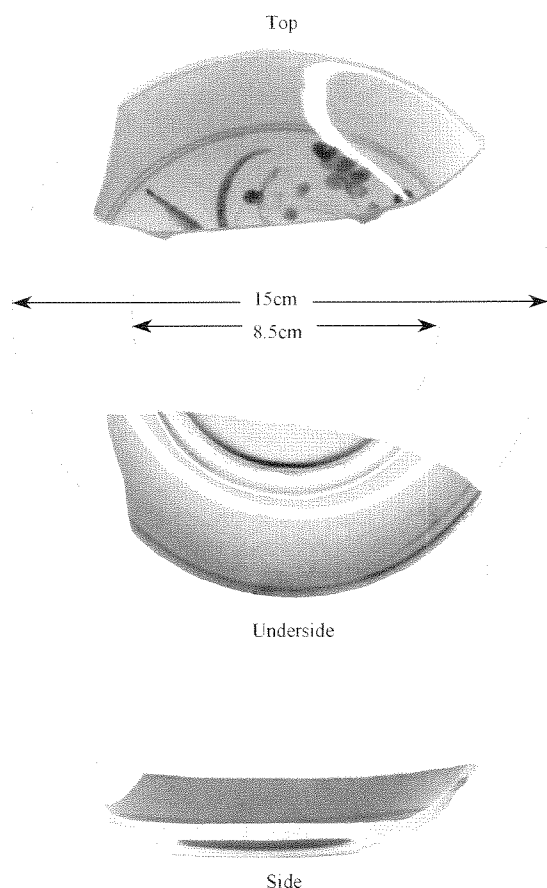


Fig. 9: Part of a small dish known as 'Bamboo' or 'Blue Flower' ware recovered from the Chinese camp at Kiandra.

Although the presence of particular Chinese ceramic types at a site may be used to identify a Chinese ethnic identity at that site, it is usually not possible to determine even an approximate period for the manufacture of those ceramics. In China, ceramics made in both provincial and imperial kilns during the Qing dynasty (1644–1912) reflected a reversion to techniques and styles of the earlier Ming and Yuan dynasties. The ceramics from that period also show the emergence of a number of styles

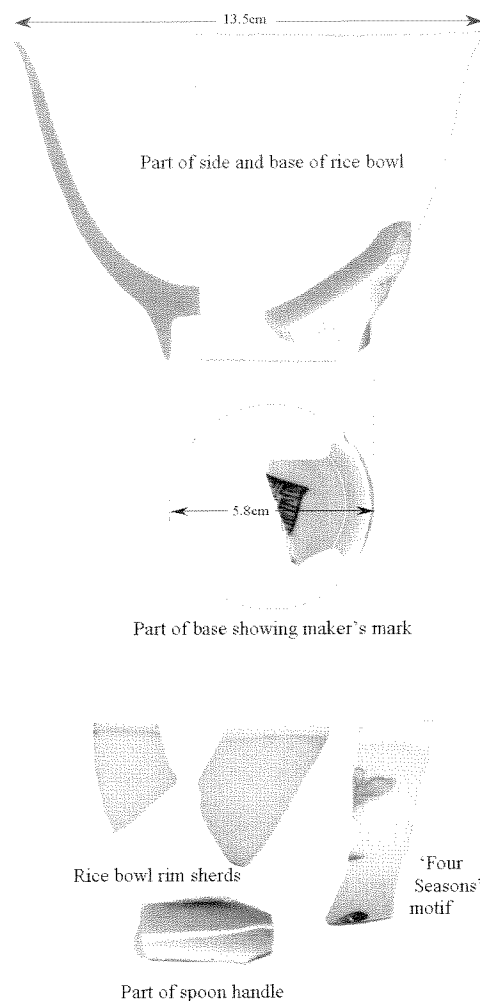


Fig. 10: Some of the larger fragments of celadon ware recovered from the Chinese camp at Kiandra.

and decorations, and less adherence to form and structure. It is therefore difficult to tell whether a piece is from the Qing period or earlier (Ayers 1974:5; Quellmalz 1976:289).

The distribution of ceramic artefacts across the surface collection areas at the two hut sites followed the natural erosion patterns for the sites and appeared reasonably scattered. However there was some concentration of these artefacts on the surface within the huts. The excavations at the sites also showed relatively high concentrations within the huts. Most of the tableware was recovered from within the perimeters of the huts, as were three of the four larger pieces of opium-pipe bowls.

The occurrence of the larger opium-pipe bowl fragments inside a hut suggests that this recreational activity may have taken place in individual huts rather than in a communal 'Joss House' at the site. The absence of the remains of a large structure at the Chinese camp site also suggests that there may not have been a Joss House at the site, and that communal activities may have taken place in individual huts.

The presence of opium-pipe bowl fragments, and indeed the overall amount of Chinese ceramic artefacts, at the site also suggests that such items were available to the Chinese at Kiandra, probably on a regular basis. There are numerous references to British ceramics being available at Kiandra as early as August 1860. For example, Rawson's Australian Ensign Store at Kiandra advertised crockery for sale in *The Alpine Pioneer and Kiandra Advertiser* on 24 August 1860, and Wright's Commercial Store advertised clay tobacco pipes for sale on 31 August 1860 in that newspaper. However, there are no historical references to any Chinese ceramics being avail-

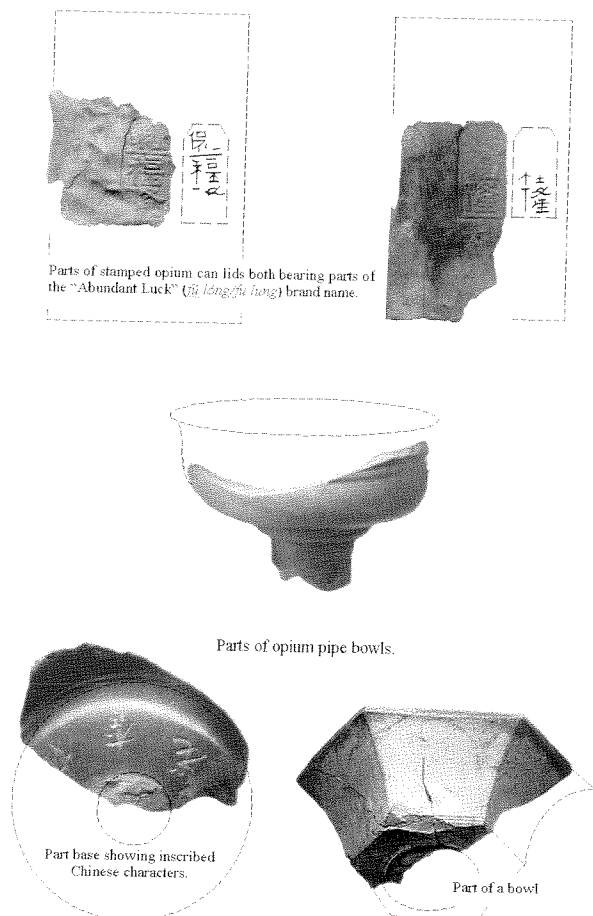


Fig. 11: Opium-related artefacts recovered from the Chinese camp at Kiandra.

able from Kiandra at any period. This finding suggests that, similar to elsewhere overseas and in Australia, the Chinese at Kiandra had supply lines that were independent of British ones, at least during the mid to late nineteenth century. This interpretation is reinforced by noting the brand of opium, 'Abundant Luck', identified from the stamp on the lids of the opium tins found at the site, was prepared in Hong Kong by companies that operated there from 1867 to 1884 (Sando & Felton 1993:171).

A final inference that may be made about the ceramics found at the Chinese camp is that the majority are high production, low quality and low cost wares. The storage jars, soy sauce bottles and other brownwares are common, mass-produced Chinese wares. The plain celadon ceramic rice bowls and even those with a 'Bamboo' design are also common and have been identified as being a cheaper category of tableware, while those with the 'Four Seasons' design are considered more expensive (Sando & Felton 1993:163). Only one example of the latter was found at the site. In addition, the larger opium pipe bowl fragments found at the site are considered to be inexpensive types (Wylie & Fike 1993:279). On the other hand, the brand of opium—'Abundant Luck'—has been identified as relatively costly (Sando & Felton 1993:171). Apparently then, recreational activities at the camp appear to have been more of a priority than everyday storage requirements and tableware.

In summary, the overwhelming proportion of Chinese ceramics at the site is a clear indication of a Chinese ethnic presence. Although it is not possible to date the occupation period of the site using these ceramics, the associated opium tin lids and clay tobacco pipe fragments enables a broad period from the mid 1860s to the end of the nineteenth century to be established. During this period the occupants appear to

have used relatively cheap ceramic ware that was most probably obtained through an independent Chinese trade network that stretched from China to Kiandra.

CONCLUSION

The type of vernacular building, the traditional construction method and characteristic material culture evident in the archaeological remains at the Kiandra camp site show a clear imprint of being associated with people of Chinese ethnicity.

The combination of these factors can be seen as comprising a model for identifying Chinese ethnicity in the archaeological record at the mining camp at Kiandra and possibly at similar sites elsewhere. In summary they are a vernacular architecture comprising a range of features. A single-*jian* rectangular shape with a small internal living area (possibly around 9.2 m² but with a 50 percent chance of being within a range of 6.7 m² and 11.7 m²), a doorway at the front (short side) of the dwelling, an internal hearth adjacent to the doorway (or after the 1870s a fireplace and chimney adjacent to the doorway), and the absence of an internal bathroom, washing and toilet facilities. Attributes of *feng shui*, including orientation of the dwelling, and therefore the doorway and hearth/fireplace/chimney, to optimise both sunlight and life (*yang*).

A traditional dwelling construction method consisting of a tamped earth floor, stones packed tightly below the ground that rise above it to form a base perimeter wall with 'random rubble' masonry, a light wooden internal/external frame, and roofing material of local and/or impermanent material such as calico and flattened kerosene tins. In addition, a characteristic material culture with an artefact assemblage consisting of the remains of a predominance of typical Chinese ceramics, such as brownwares, tableware (including celadon) with distinctive patterns, opium pipe bowls, opium tins, and Chinese coins.

ACKNOWLEDGEMENTS

The impetus, and driving force, for this study was provided by staff, post-graduate and undergraduate students from the School of Archaeology and Anthropology, Faculty of Arts at The Australian National University (ANU), Canberra. A great deal of the success of the study was due to the interest and, in some cases, active participation by a number of people. These include descendants of the inhabitants of Kiandra, old time Kiandra residents, local regional people, and others who had known Kiandra as a tourist destination in past years.

My thanks also go to the Cooma and Tumut Historical Societies, the staff of the libraries in those two towns and the staff of the Snowy Mountains Hydro-Electric Authority library in Cooma, and to the staff of both the Tumut and Snowy Mountains Shire Councils. I would also like to extend my appreciation to officers from the New South Wales National Parks and Wildlife Service, in particular Denis Gojak and Geoff Winnette.

At a broader level, I am also grateful to a number of staff from the various libraries at the ANU, Sydney and Melbourne universities, the National Library of Australia, the State Library of New South Wales, the State Library of Victoria, the NSW Department of Mineral Resources and Energy library, the Australian Government Survey Office library, the Australian Archives and the NSW State Archives. In addition, I would also like to acknowledge the assistance of staff from several other public and private libraries, and individuals with private collections. These include the Chinese Museum in Melbourne, the Powerhouse Museum in Sydney and the Anglican Diocese of Canberra and Goulburn.

NOTES

- 1 This paper presents part of the results from research undertaken by the author for a Master of Arts thesis in the

School of Archaeology and Anthropology at The Australian National University, Canberra. The aim of the thesis was to demonstrate that Chinese ethnicity could be identified from the archaeological record (Smith 1998).

- 2 Although an oven was not found at the Chinese camp at Kiandra in 1997/1998, subsequent excavations at the camp in 2001 revealed the remains of a communal oven (Smith 2001:52–61).
- 3 All of the glass, metal (except for two pieces of metal opium can lids) and miscellaneous (except for Chinese coins) artefacts recovered from both sites were either of European origin or unidentifiable. With respect to the Chinese coins, although they are common among artefacts of oriental origin found in overseas Chinese sites in the USA, New Zealand and Australia (e.g. Fagan 1993:222–223; Ritchie 1986 566–572, Ritchie and Park 1987:41–48; Svenson 1994:111, 125) they often appear in other non-Chinese contexts, e.g. in an African-American slaves' quarters in Kentucky dating from the early 1800s (Young 1997:5–38), and when taken in isolation their presence at a site is not necessarily a reliable ethnic indicator for that site.

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