

Poor Man's Diggings: Subsistence Mining in the Nineteenth Century

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Poor man's diggings was a vernacular expression applied to mineral deposits where the returns were low but steady. The manner of working such deposits differed from that on fields where higher returns were common, and this resulted in a distinct pattern of technology use, settlement, and material culture. The Dolly's Creek goldfield in Victoria is compared with several other mining areas in order to more fully delineate this pattern.

Through the latter half of the nineteenth century numerous low grade ore deposits were worked by self-employed miners all around Australia. Despite the volume of literature on the history of mining generally, the significance of this pattern of mining has been largely overlooked and consequently the methodologies and way of life entailed are little understood. In this article the distinctive technologies, settlement patterns, and material culture of subsistence mining are illustrated using the case study of Dolly's Creek, Victoria. A model of subsistence mining is developed which draws on the results of this case study and on recent archaeological studies from several other regions in Australia.

In nineteenth-century documents the frequent use of the term 'poor man's diggings' acknowledged the differences between large, rich fields where fortunes were made and lost and fields where the returns were low but steady.¹ These differences were not only in the value of the ores, but also in the use of capital and technology and as the term suggests, in the people who lived and worked on the fields. On poor man's diggings the mineral deposit was not rich enough to create a massive rush, to attract major external sources of capital, or to sustain a substantial permanent settlement, but it was sufficient to support a small number of people for a period of time. As a result, the settlements associated with such deposits were characterised by ephemeral structures and a transient population which included significant numbers of women and children. People came and went both seasonally and over a period of years as other rushes and other industries provided temporarily more lucrative sources of income. Poor man's diggings were determined by the grade of the ore and included both quartz and alluvial deposits. Further, while it was initially and most prominently associated with gold mining, subsistence mining extended into other, related branches of mining where low grade ore deposits could be similarly worked, including tin and copper mining.²

The use of the term poor man's diggings by contemporaries was not a pejorative one, and indeed the perceived reliability of returns was something of a cause for celebration. At Dolly's Creek in 1859 it was claimed to be 'impossible to be so unfortunate as not to be able to make tucker wages at all events', a testament to the value of the field.³ The ethos described by June Philipp at Bethanga, Victoria, exemplified the poor man's diggings. It encapsulated a broad ideal both of mining organisation and of the 'values, aspirations and social relationships' of the way of life of independent miners.⁴ This ethos was based on rough egalitarianism amongst the miners who valued self-sufficiency and freedom from interference and felt that success should not come at the expense of others. Subsistence miners, holders of Miner's Rights rather than wage labourers, were willing to work at many tasks and to relocate as often as necessary in order to avoid being under someone else's control. Dignity and self-respect were worth the privations of repeated migration in search of payable deposits and the often low returns.

While the men working on poor man's diggings identified themselves primarily as miners,⁵ for many mining was only one part of a broader subsistence strategy. Periods on the diggings were frequently interspersed with timber cutting, labouring, or a variety of other odd jobs. Men moved between jobs as they moved between diggings, mining on one field, keeping store on the next, or turning to a previous trade. Farming provided another supplement to mining income, particularly after the initial rush period when land was gradually opened for selection. On the Spring Creek Jacqua goldfield in the Shoalhaven district of New South Wales the rhythms of the agricultural cycle influenced the course of mining, and excavated washdirt was left piled on claims during the harvest period as miners worked their selections.⁶ Miners elsewhere were able to take up selections close to the diggings and could schedule activities at both places during each day, as for example did one miner in Victoria who spent eight hours a day mining and three hours a day erecting farm buildings and fences.⁷ Many women and children lived on poor man's diggings as well and the family group was critical to the success of this combination of mining and farming. The strategy was most effective where it could draw on the pooled efforts of several people. Sons assisted fathers on the claims while the day-to-day running of the farm was the responsibility of mothers and daughters.⁸

The Australian evidence demonstrates the persistence of what has been identified as informal mining, or the pattern of combining mining with other forms of subsistence labour.⁹ It is particularly common in non-industrialised economies where mining is not sufficiently intensive to require full-time specialisation. Mining and metalworking are considered craft specialities but practitioners engage in mining activity on a sporadic and limited basis.¹⁰ Mining is restricted to short periods of several weeks or months which are separated by much longer periods, sometimes as long as several years, in which miners are employed in other forms of labour, primarily farming. When mining becomes industrial in scale, with accompanying complexities in technology and the organisation of capital and labour, informal patterns are replaced by full-time specialisation. While most western European mining had been industrial for centuries, the gold rush facilitated a brief revival of informal mining which persisted for decades alongside industrial models.

The archaeological record on poor man's diggings is influenced by a number of features inherent in subsistence mining, including the transience of the mining families and the repeated abandonment and re-occupation of house sites. The re-use of domestic sites is mirrored by the intensive working and reworking of the deposits and the superimpositioning of mining activities in the surviving archaeological record. Subsistence mining provided a living income but not much in excess of that, and as a result the artefact assemblages are small and fragmentary. Individual occupations on mining sites were short-term but the site and the dwellings could be used and

reused many times over the years. It was customary for people to leave one diggings on hearing of discoveries elsewhere only to return when those discoveries were worked out.¹¹

Houses were commonly portable structures of calico and bark, leaving few archaeological traces. At each departure some goods were abandoned or thrown away and others were auctioned off, while occasionally the more substantial structures were left with goods in them in the expectation of return.¹² The concept of the household series is a useful analytical tool for interpreting such sites, as it collapses multiple occupations into a single unit for the purposes of delineating general cultural patterns.¹³ Despite the difficulties presented by the archaeological record, interpretation is worth pursuing because the documentary sources are equally fragmentary and it is only by combining the two that subsistence mining can be better understood.

Subsistence mining entailed the formation of distinctive cultural patterns including industrial organisation, settlement patterns, and material culture, and these are delineated using the case study of Dolly's Creek, Victoria. The settlement is named after a small seasonal water course 60 kilometres west of Melbourne, Victoria (Fig. 1). The watershed is composed of deep gullies cut by seasonal watercourses and the area is now

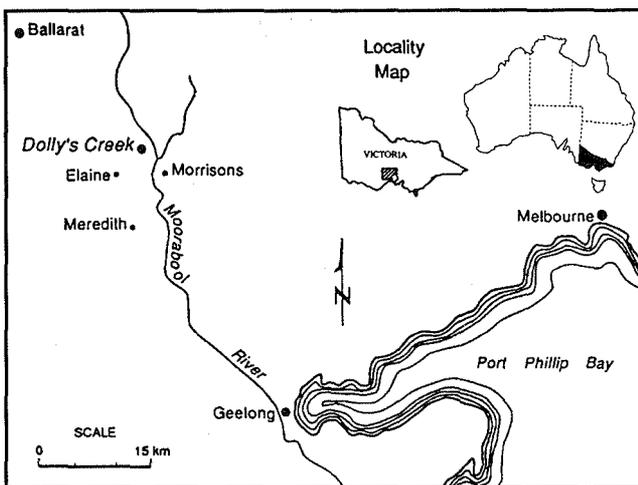


Fig. 1: The location of Dolly's Creek.

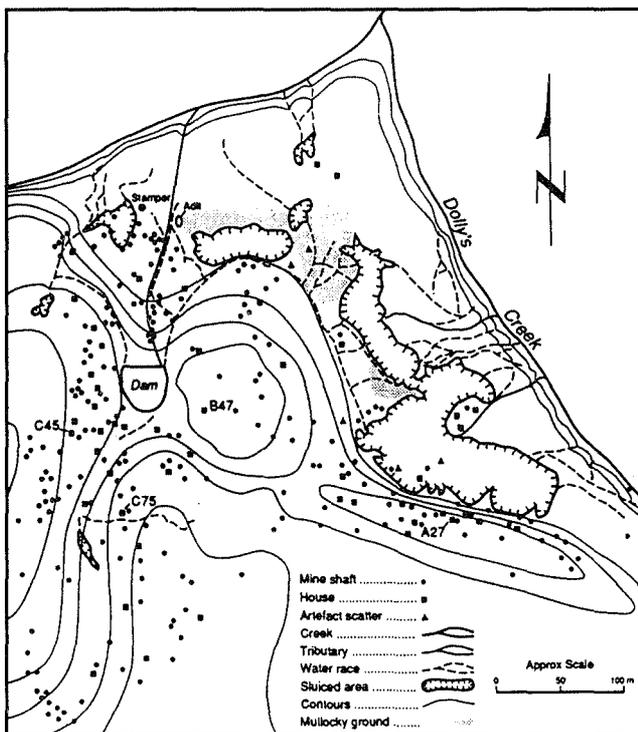


Fig. 2: The study area.

covered by an open eucalypt forest. Gold was discovered there early in 1857 and the population grew to a peak of more than 600 people in 1861, at which time the settlement included several stores, hotels, a bakery, a post office, and a school. The shallow alluvial workings were never particularly rich but they sustained approximately 100 miners throughout the 1860s and 1870s. By the 1880s mining had ceased at Dolly's and in 1888 the area was declared a Forest Reserve.¹⁴ The sluices, races and mine shafts of the alluvial workings still remain, as well as at least 60 fireplaces where huts once stood (Fig. 2). A survey of the settlement was conducted in 1990 and sample excavations at four huts were carried out in 1991 and 1992.

INDUSTRIAL ORGANISATION

At Dolly's Creek alluvial gravels laid down during the Tertiary Period formed the basis for diggings which saw three major periods of activity. The earliest, 1857–1863, when the largest number of people were in the area, involved prospecting and proving the diggings through extensive shallow sinkings. The second phase, 1863–1874, was characterised by the reliance on water as first ground sluicing and then hydraulic sluicing was turned to as more viable means of working the deposits. The third period on the field, 1874–1888, was generally one of decline as fewer claims were worked by fewer miners. Each of these phases has left archaeological evidence and the visible remains are a palimpsest of past activity. In some places separate phases are preserved adjacent to each other while in other places succeeding phases have cut through or erased the sites of earlier activity.

During the prospecting phase shallow shafts or pot-holes averaging 1.5 metres square or in diameter and up to five metres deep were sunk both in isolation and in concentrations often referred to as mullocky or hummocky ground (Fig. 3). Following Ritchie and Coroneos, the mullocky ground has been interpreted as resulting from the inefficient working of the richest ground during the earliest phase of mining.¹⁵ The mullocky ground is located primarily along the escarpment above Dolly's Creek and in the vicinity of sluiced areas. In some places the sluices cut through pre-existing pot-holes, mullock and races and are clearly of a later date. It is possible that the pot-holes were sunk in conjunction with the sluicing in order to test the ground but the considerable extent of the mullocky ground together with the reports in the *Geelong Advertiser* and the *Reports of the Mining Surveyor* of a prolonged period of shallow sinking prior to the introduction of major sluicing operations on the field suggests that the two techniques were employed independently and that the sluicing was a reworking of the mullocky ground. This practise is often successful because of pockets of unexcavated wash dirt left between shafts and because of lost gold in the tailings. While at least five puddlers are known to have operated on the field during this period, no physical evidence of them has survived subsequent reworkings.¹⁶

The second phase of work began in 1863 with the completion of a race network constructed by the Lal Lal Waterworks Association (LLWA) in order to divert water from above Lal Lal Falls on the Moorabool River.¹⁷ Portions of one of the two main tributary races are still clearly visible within the study area, where it approximately follows the 375 metre contour line along the escarpment above Dolly's Creek. A distribution dam is also still apparent as are several smaller races. Within the study area a total of nine kilometres of race were recorded which supplied six ground sluices and two hydraulic sluices. The largest ground sluice, 200 metres long and 50 metres wide, lies along the main tributary race on a hillside midway between the distributing dam and the hydraulic sluices. The main race served as the head race but no tail race remains and the ground on the lower margin of the sluice is broken by shafts, mullock, and tailings.



Fig. 3: Pot holes cut by a later hydraulic sluicing operation.



Fig. 4: The top of the largest hydraulic sluicing area with head race on the right.

In two places within the surveyed area hydraulic sluicing methods have been employed. Both are in the eastern part of the study area on the escarpment above Dolly's Creek and the main tributary race supplied each with water. The largest, eastern sluice is 350 metres long by 240 metres wide and ten metres deep at the face. The western sluice is smaller but deeper and is 280 metres long by 70 metres wide and fifteen metres deep at the face. When sluicing, work customarily commenced at the lowest point on the ground and moved 'forward on a rising bottom'.¹⁸ The lowest point was at the far eastern end of the eastern sluice, at the furthest extent of the primary race, and work began there and moved gradually westward and upslope, cutting the head race in several points as the face progressed (Fig. 4). The floor of the eastern sluice is covered with linear tailings piles remaining from the gravels that were blasted away. The floor of the western sluice has smaller tailings piles and several deep tail races which begin near the centre of the sluice and pierce the downslope face, running from there down the slope of the hill to Dolly's Creek itself.

The LLWA lease ended in 1874,¹⁹ and thereafter work was more sporadic and, while some sluicing continued, a new form of mining was also introduced. For the first time, heavy machinery was used to process wash dirt on the field. In 1879 the Happy Dinah Company erected a five head stamper battery driven by a ten horsepower steam engine in order to crush alluvial cements.²⁰ Remains probably attributable to this company are located in the north western portion of the study area. There are footings of two partially collapsed walls built of quartzite blocks standing on the eastern edge of a five metre by five metre levelled platform cut into the hill slope. The walls are parallel and two metres apart, adequate space to house a small steam plant, while a five head battery would have fitted neatly onto the level platform abutting the walls. A small amount of clinker was located in the area but no tailings are apparent which suggests that the operation was unsuccessful, an interpretation supported by the absence of any further mention in the documentary sources. This is the only episode in which substantial engineering plant is reported in use on the field, and neither dredges nor hydraulic elevators were used there.

The workings at Dolly's Creek are typical of small scale alluvial sites in Australia.²¹ They easily fit within the 'little and some capital' categories of Gaughwin's economic model of mining development in which extractive techniques favour small shaft mines, small tailings heaps, pot-holing, sluicing, long water races, puddlers and small batteries.²² Where more capital was invested in richer ore deposits, operations were larger with complex race systems, large dams, and deep shafts, extracting and processing areas were separated, there were extensive steam or water powered batteries, and tramways and haulageways were used. Capital to fund such investment was raised through publicly floated companies while the smaller operations were run by private companies of a few individuals, most of whom worked the mine themselves. This was the pattern at Dolly's where there was little mechanisation and most of the labour was provided by hand, horse, and water power, all comparatively inexpensive techniques that required little capital investment. The only attempt to use expensive plant was small and short-lived, but the continuation of the field over a thirty year period demonstrates the persistence and determination of those who worked there. Remains of the workings extend over a wide area and have survived because gold is not present in sufficient quantities to be payable even now. All usable metal and timber from the workings has been removed from the area and only the alterations to the landscape itself provide evidence of the work.

SETTLEMENT PATTERNS

Communities on poor man's diggings included men, women and children, and the demographic structure of the community had implications for settlement patterns and emerging community identity. The settlement pattern of subsistence mining is characterised by dispersed settlement with individual dwellings that are frequently isolated from each other but located adjacent to extraction or processing sites.²³ Several dwellings in the vicinity of the same industrial feature may form small neighbourhoods, as they do at Dolly's Creek. While many dwellings were occupied by single male miners, an equal number were home to family groups. Services such as pubs, stores, schools and the post office were located in central positions. Several such services were located together in the nearby township of Morrissions and such larger centres were also an important part of the system of settlement. The entire complex of township, central places, dwellings and industrial sites is linked by networks of tracks and water races.

At the heart of the settlement pattern were the people who lived in the community. The Victorian colonial census of 1861 provides the most detailed picture of the people living at Dolly's Creek.²⁴ At that time 619 people lived at Dolly's Creek, 57 of them Chinese men. Over half the people recorded were either women or children below the age of 15. Most of the adults were young, 82 percent of the men and 85 percent of the women being less than 40. Of the 110 adult women, 94 stated that they were or had been married. Widows comprised only two percent of the married women in the whole of Grant County, of which Dolly's Creek was a part, and it can be assumed that the number of widows at Dolly's itself was similarly small. As women were less likely than men to be on the diggings without their spouses, it seems probable that the number of married women was close to the number of married men living with their wives on the goldfield. Thus most of the women and a good many of the men were living as part of a couple and most of the couples probably had children, as most of the women were of child-bearing age and there were an average of 2.1 children for every married woman. While detailed studies of comparable poor man's diggings have not been done, evidence from larger towns suggests that these demographic patterns are not unusual for the Victorian goldfields as a whole and that in general, women and children were present in significant numbers.²⁵

The number of women and children present at Dolly's Creek had many implications, one of which was household structure. The census taker in 1861 recorded 215 dwellings in the settlement. With a total population of 619, this suggests an average of 2.87 people per household. When the number of women, men and children living in nuclear families are considered, however, this changes to approximately 4.1 people in each nuclear family group and 1.9 people in each of the remaining households. The latter were composed primarily of adult males and many would have been groups of mates sharing accommodation. However, the family households may have been even larger, incorporating unmarried siblings, adult children, and domestic help and in consequence the number of all-male, single person households smaller. While these figures are speculative, they do provide some indication of the kinds of households that might have been found in the settlement.

Where the dwellings were located was determined within the framework of the legal requirements of Goldfields Commons and Miners' Rights. Land at Dolly's Creek, as on other subsistence fields, was gazetted as a Goldfields Common.²⁶ Only the external boundaries of the Common were surveyed while land within those boundaries was exempted from sale and reserved for the purposes of mining. Commons indicated the presence of gold and of mining activity and reserved that area for the public interest while retaining control for the Crown. Miners then obtained Miners' Rights to prospect and work the land and leased claims from the government. Goldfields Commons facilitated dispersed settlement patterns, and at Dolly's Creek the huts were located throughout the 100 hectares study area with at least 50 metres between each dwelling and its nearest neighbour. Permission to build houses on the Common was included in the Miners' Rights which entitled holders to 20 perch (500 square metre) allotments of Crown land on which to build a residence, and also gave permission for livestock to be grazed on the Common land.²⁷ The Commons system guaranteed the itinerant miners a place to live and enabled them to keep animals and grow vegetables which supplemented their diet and the income from mining. Women and children tended the gardens and the animals and processed the dairy products; eggshell and bone from chickens, cows, pigs and goats recovered during the archaeological excavations provides evidence of their work.²⁸

Archaeological evidence indicates that allotments were generally located close to the mines and all across the study area houses and mine workings are found in close proximity. Houses are located adjacent to either extracting areas, processing areas, or along water races that served as communication links through the settlement. Clusters of houses formed neighbourhoods where several households chose to locate near the same industrial area or communication link. Community nodes formed in central locations where services such as pubs, stores, schools, and churches were located. Two of the houses that were excavated also seem to have functioned as pubs or stores. One, C45, is located next to the LLWA distributing dam and is one of an extended line of houses that were probably along a now-vanished road. The other, A27, is one of a similar line of houses along the southern margin of the largest hydraulic sluice. The five acre school reserve was located on a level hilltop between the two hotels and although no trace of the school now remains, the absence of dwellings or mine workings on the hilltop may reflect this special use. There is no evidence of the location of the post office, shops, or bakeries also known to be there, nor can the identity of the pubs be firmly established.

Other facilities used by those at Dolly's Creek include the cemetery, racecourse, churches, assembly hall, schools and shops located nearby at Tableland and in the township of Morrissions. According to McGowan, pubs and stores, amongst the first businesses on new diggings, reflect the private,

entrepreneurial spirit associated with rushes while a broader range of services is indicative of a more mature community and the development of public institutions suggests the emergence of a shared community identity.²⁹ On the diggings around Dolly's Creek, three churches, three schools, and a continuous round of concerts, picnics, and dances reported in the local newspaper are evidence of a strong community identity. Women played leading roles in initiating and maintaining community institutions such as churches and schools, so where there is evidence of the existence of such structures on individual diggings this can be interpreted as a further indication of the work of women within mining communities.³⁰

HOUSEHOLDS

Detailed insights into subsistence mining households are provided by the results of the excavation of four sites at Dolly's Creek, designated B47, C75, A27 and C45. Individual households occupied camp sites incorporating one or more small structures made of a combination of calico, timber and stone. Variation in architectural forms and amongst the artefact assemblages is the product of differences in household function, household composition, and site formation processes. Based on that variation, distinct household types have been identified and associated with residential-only households, households that combined residential and commercial activities, male-only households, and mixed male and female households. The nature of the goods used by all of these households suggests something of the cultural processes that informed subsistence mining.

Residential assemblages are characterised by simple architectural forms, a predominance of architectural items, a large and diverse range of ceramics and faunal remains, a small number of personal items, and comparatively few alcohol bottles. This household type is represented by the sites B47 and C75. The architectural remains at the two sites are typical of the simple one room tents that characterise gold rush structures.³¹ The location of the buildings is indicated by the presence of several features, including collapsed fireplaces built of quartzite blocks, levelled pads cut into the hillsides, and drainage ditches dug around the exterior of the pads.

At C75, there is evidence of a single structure which had a fireplace situated at one end of a pad and several drainage ditches. At B47 two structures were present, one of which had a fireplace while the other was erected on a levelled pad with drainage ditches on two sides (Fig. 5). The pads at the two sites were the same size, 5 metres by 3.5 metres. Nails used in the timber tent frames and tacks used to fasten calico in place were found at both sites, but window glass also present indicates that while calico may have been used in the walls and roof there was nevertheless sufficient framing to support at least one window at each structure. The presence of two structures rather than one at B47 is similar to a practice observed on archaeological sites on the California diggings and at Arltunga goldfield in the Northern Territory where additional structures were used for sleeping or storage.³²

The tents at Dolly's were built on hill slopes and at both sites ditches had been dug to channel rainwater away from the interior of the buildings, a practice also referred to in written accounts.³³ The ditches show how the residents experimented to find the best way of diverting rainwater around the tents. At C75, the first attempt was a shallow scooped ditch dug along the uphill side of the tent. This soon proved inadequate however and a second, longer, ditch was built which lay further from the tent and which carried the water to a point far from the tent itself. This second ditch was deeper than the first and had straight sides and a flat, level base and was lined with rubble and sheets of iron and tin.

The fireplaces were the dominant architectural feature in both dwellings, occupying one end of the tent, either adjacent to or opposite the door. The fireplaces were built of roughly shaped quartzite blocks held together by mud mortar and stood about one metre high, with wooden or corrugated iron chimneys.³⁴ At B47, an experienced stone mason built a strong and substantial fireplace with a single row of bricks laid around the inside of the firebox to provide a convenient ledge on which to rest a grate or a kettle. The fireplace excavated at C75 was not as expertly nor as substantially built as at B47 but it was carefully maintained and the surface was given a finish of kaolin from the mine shafts, a practice common on the diggings. Elsie Bayard, who grew up at Dolly's in the early

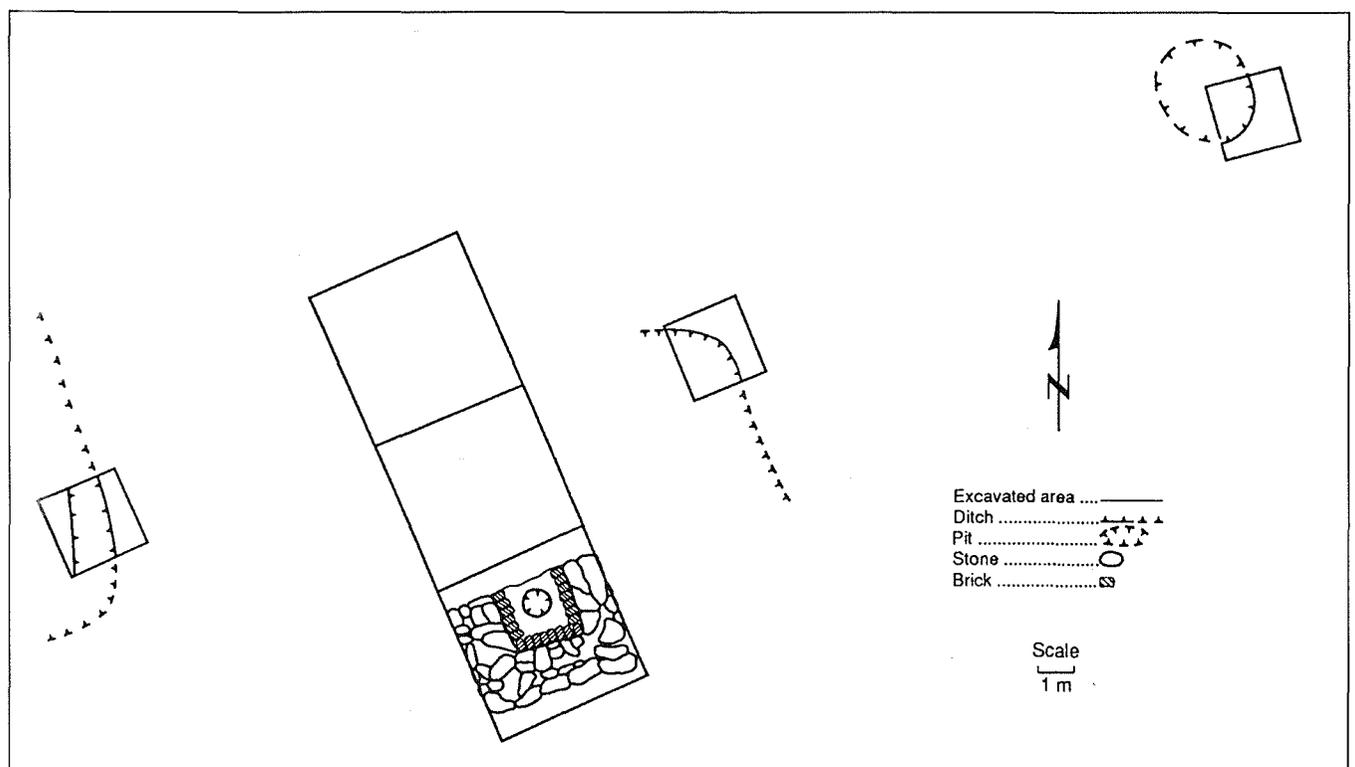


Fig. 5: Plan of C75.

years of the twentieth century, recalls her mother's daily chore of whitewashing the fireplace with pipeclay brought from her father's mine in a hessian sack.³⁵ Other women on other goldfields also cleaned and brightened their homes in this way. One woman on Tasmania's Lisle goldfield recalled that

The whitest of pipeclay was used as a wash for the fireplaces and housekeepers would search for the best and carefully remove any yellow pieces from their whitening buckets so that the final result would be most immaculately snowy.³⁶

Architectural items such as nails, tacks, and fragments of window glass made up 77 percent of the assemblage from B47 and were also the largest category at C75 where 37 percent of the assemblage was architectural items (Table 1). Tablewares and faunal remains were also large categories in both assemblages. Ceramic items represented included at least 17 vessels at B47 and a minimum of 43 vessels at C75, more vessels than at either of the other two sites, C45 and A27. Tablewares, consisting of plates, teacups, saucers and teapots were the most common forms and a small number of food storage and preparation vessels such as jugs and bowls was also represented. There were no toiletry items in either assemblage. All of the tablewares were common, inexpensive earthenwares but the decorative patterns were diverse and colourful. The majority of the 43 different designs were transfer printed in blue, mauve, sepia, green, or mulberry. Faunal remains, seven percent of the assemblage at C75 and nine percent of the assemblage at B47, were also diverse and included chicken, cow, goat, pig, and sheep bone. Personal items such as buttons, jewellery and footwear comprised less than one percent of either assemblage. A small quantity of tools and equipment made up 20 percent of the assemblage at C75 but less than one percent of the assemblage at B47, and included a horsehoe, harness rings, sheets of tin, and heavy iron hooks. Alcohol bottles were also represented, but made up less than 10 percent of the assemblages, in marked contrast to the commercial/residential assemblages at the other two sites. Only five alcohol bottles and one medicine bottle were represented at B47 while four alcohol bottles and one medicine bottle were represented at C75.

Residential/commercial sites, represented by A27 and C45, shared the basic features of the residential sites, including the ceramics, faunal remains, and personal items, but had significantly more alcohol bottles in the assemblages, and in

one case, C45, also had duplicate items and more complex architectural forms. At A27 a minimum of 20 alcohol bottles and one medicine bottle are represented in the assemblage, 70 percent of which is alcohol bottle glass. The lack of architectural remains other than a fireplace suggests that it was a tent structure with a fireplace similar to those at the residential-only sites but poor preservation has made more detailed analysis of either structure or artefacts impossible.

Preservation was much better at the fourth site, C45 which has been identified as a pub, and possibly one which operated as a shop as well, a not uncommon practise. Both the assemblage and the architecture at C45 are markedly different to the residential pattern. The remains of two buildings have been identified on the site and both incorporate stone in their construction (Fig. 6). Only a corner of one building survives but the footings of the other remain, indicating a one room structure 3.5 metres long and 2 metres wide, with at least two glass windows and a wooden door with iron hinges, a lock, and a brass doorknob. Gaps in the stonework and fragments of window glass in situ as they had fallen indicated that the door and one window were located along one long wall of the building. A stone and brick fireplace formed the short wall to the right of the door. The lower part of the walls consisted of roughly cut blocks of quartz, quartzite, and conglomerate bound with mud mortar, and would have stood to a height of between half a metre and a metre.

Above the stonework the upper part of the walls and the roof were probably made of bark or calico supported by a wooden frame, as is suggested by the presence of nails, tacks and several large iron spikes. Further evidence of the building technique was provided by one fragment of wall covering found. The fragment consisted of multiple layers of differing material. On the exterior was a sheet of tin followed by a layer of stiff embossed cardboard, several layers of newspaper, a layer of hessian and finally, on the interior surface, patterned wallpaper. The building may have begun as canvas with tin added on the exterior as waterproofing and card, newspaper, and then wallpaper successively added. The sturdy construction of the buildings would have provided security which was of particular concern to storekeepers and publicans. Tent stores on the goldfields were frequently robbed by thieves who used knives to cut through the canvas walls at the back of the store and then pulled goods through the holes.³⁷ At C45 the

Table 1. Artefacts found at the four sites.

Identification	C75	%	B47	%	A27	%	C45	%
nails	629	33.5	915	77.5	70	5.53	1077	14.6
door hardware	1	0.05	1	0.08	0	0	22	0.3
window glass	61	3.25	1	0.08	11	0.87	144	1.95
tableware	193	10.3	51	4.32	20	1.58	154	2.08
cookware	1	0.05	0	0	0	0	17	0.23
metal containers	4	0.21	0	0	16	1.26	415	5.61
glass containers	306	16.3	24	2.03	226	17.9	229	3.1
ceramic contain.	43	2.29	2	0.17	0	0	25	0.34
soda water	6	0.32	1	0.08	0	0	23	0.31
condiments	0	0	0	0	0	0	16	0.22
medicine	9	0.48	1	0.08	0	0	63	0.85
faunal remains	119	6.35	105	8.9	26	2.05	38	0.51
lamp parts	0	0	0	0	2	0.16	150	2.03
furnishings	1	0.05	0	0	0	0	2	0.03
clothing	6	0.32	3	0.25	0	0	20	0.27
footwear	1	0.05	1	0.08	0	0	17	0.23
tobacco items	19	1.01	13	1.1	1	0.08	9	0.12
alcohol items	135	7.2	57	4.83	888	70.1	3767	51
ammunition	0	0	1	0.08	0	0	0	0
horse items	5	0.27	0	0	0	0	6	0.08
stationery	18	0.96	2	0.17	0	0	3	0.04
sewing items	2	0.11	1	0.08	0	0	1	0.01
tools	316	16.9	1	0.08	6	0.47	1121	15.2
coins	0	0	0	0	0	0	2	0.03
TOTAL	1875	100	1180	100	1266	100	7391	100

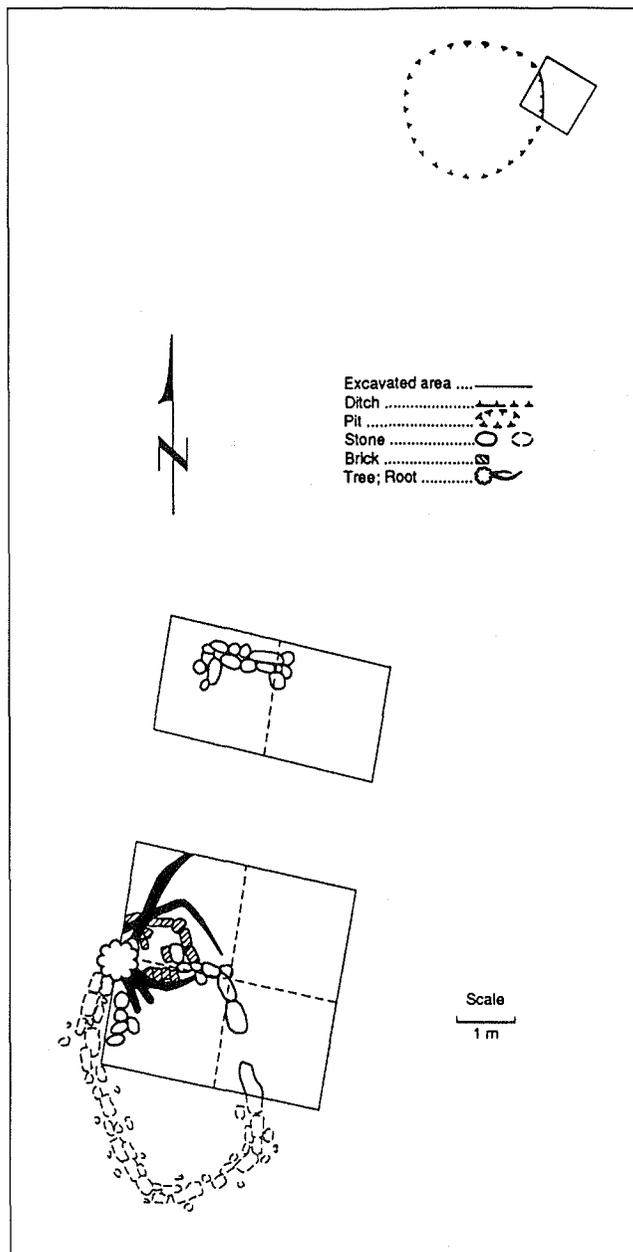


Fig. 6: Plan of C45.

stone walls and the strong locks and doors were most probably security measures taken to protect a shop and its contents.

The artefact assemblage indicates the nature of the building's contents and provides further evidence of commercial activities at this site. As at A27, a major proportion of the assemblage is alcohol bottle glass, in this case 48 percent of the assemblage, with at least 85 bottles represented. It is this preponderance of alcohol bottles which suggests that the site was a pub but the variety and quantity of other goods, including the presence of multiples of many items, suggests it was a store as well. Evidence of stock includes five shovels, three wedges, four food tins, four salad oil bottles and six medicine bottles. None of the other assemblages included duplication of items on this scale. Bulk packaging of foodstuffs is also evident in the presence of iron hoops from wooden casks and a brass tap used for dispensing liquids from casks. Other aspects of the assemblage are similar to those at C75 and B47, suggesting that the site had a residential role as well as a commercial one, but it was common for storekeepers to live in their shops.³⁸ Fragmented crockery and faunal remains suggest household rubbish rather than shop goods, and a number of personal items including buttons, jewellery and footwear also suggest a residence.

Because dress and adornment are attributes directly related to gender identities, personal artefacts are the clearest archaeological indicators of the presence of men, women, or children. At B47 the only gender-specific personal possessions were buttons from mens' underwear and the heel plate of a man's work boot. Both men's and women's items were found at C45 and C75, which also had women's items. At C75 the heel of a woman's shoe and a pressed tin brooch were found, while at C45, a black glass ball button, a pressed tin clasp, and a woman's gold wedding band were found. In addition to these gender-specific items, the assemblages from the two households which included women were qualitatively different to those of the single-sex households. Both assemblages included a greater variety of artefacts associated with home furnishings and tablewares. While the tablewares from the single-sex households consisted only of fragmentary transfer printed underglazed ceramic plates, teacups, and saucers, at C75 they also included a stemmed glass serving dish, two pressed glass bowls, a tumbler, a teapot, and a knife and fork and at C45 tablewares also included glass tumblers, a stemmed glass, a fork and two spoons. Furnishings at C45 included several parts of a kerosene lamp, two different styles of drawer pull and a fragment of wallpaper while at C75 an ornate cast brass mantel clock case was found and the fireplace was given an interior coating of pipeclay. Neither of the other assemblages contained any furnishing items.

DISCUSSION

On diggings around the country people continued to prospect and work small claims long after the initial rush phase had passed. As mining was transformed from a short-term adventure to a long-term way of life, the changes that took place led to the emergence of a distinctive kind of community known by contemporaries as poor man's diggings. Poor man's diggings were sustained by a system of subsistence mining characterised by modes of industrial organisation, settlement patterns, and material culture that are distinct from those of large-scale capital mining and from the preceding gold rush. The structures of subsistence mining were influenced by the low grade of the ores worked, the small amount of capital involved, the demographic composition of the community that included women and children, the need for mobility, and the persistence of the gold rush ideology that valued freedom and independence. The pattern of subsistence mining identified at Dolly's Creek is consistent with evidence reported on similar small fields including Spring Creek Jacqua in New South Wales, Lisle in Tasmania, the Blue Tier tin field, also in Tasmania, and the Arltunga field in the Northern Territory.³⁹ All of these are fields where the ore was predominantly low grade and worked principally by individual enterprise and where most of the miners were European rather than Chinese. All have also been the subject of archaeological investigation in recent years.

Archaeological sites associated with subsistence mining fields share a number of common features. Unlike large company mines which are localised complexes centred on a rich deposit and its associated processing areas, poor man's diggings were inter-related cultural landscapes of numerous small claims, together covering large areas and regional in scale. Dolly's Creek field is four kilometres long by three kilometres wide, and the Lisle goldfield is five kilometres long and three kilometres wide, while the Spring Creek Jacqua field in New South Wales covers almost 100 km². Within those large areas the evidence of individual smaller diggings can be identified as landscape features including race networks, dams, tracts of mullocky ground, tailings piles, and sluiced areas.

Gaughwin observes that the remains indicate the lack of available capital to work the deposits and that there is little evidence of the use of sophisticated equipment or introduced

materials.⁴⁰ Locally available materials such as wood, earth, and stone predominate, with some metal and only the occasional presence of small batteries, boilers, and machinery mounts, and this pattern is repeated at Dolly's Creek, Spring Creek Jacqua, and Lisle. At Arltunga the principal machinery in use was the public battery and cyanide works established by the South Australian government. The Blue Tier was primarily a hard rock field but there as well the sinkings were shallow and small open cuttings were favoured while industrial plant consisted of five or ten head stamper batteries powered by water or steam. Another feature of subsistence mining was the reuse and recycling of plant, a practise that was also common in the later phases of big commercial fields like the Palmer in north Queensland.⁴¹ When one venture folded parts would be sold or salvaged and set up elsewhere. At the Michael Mine on the Blue Tier, Oregon beams used in the battery came from one mine while the engine used came from another.

Kinship was a strong organising principle in subsistence mining and many of the companies were formed by networks of related individuals. Women who came to the diggings with their fathers and brothers married other miners and further extended family networks. The brothers Thomas and William Argent were among those who owned the Red Jacket mine at Dolly's Creek while on the Blue Tier the Gough, Dishington and Windred brothers regularly alternated ownership of several mines. The Lisle field was discovered by a prospecting party of comprised of four brothers from Launceston and Hugh and John Gibson went to Bethanga to join their brother-in-law John Conness, who had discovered the field, while another person instrumental on the field, William Rhodes, ran the crusher in partnership with his father William Senior and his brother-in-law Jabez Banfield.⁴² The role of kin networks has not been specifically discussed on any of these fields with the exception of the Blue Tier, but from these few examples it is apparent that family ties were a significant element within mining communities.⁴³

The demographic profile of subsistence mining communities included significant numbers of women and children. This is consistent with the population profiles Bell describes in North Queensland mining towns that had reached maturity.⁴⁴ While poor man's diggings never matured as mining centres with diversified economies and stratified social structures, they did achieve stability as long term places of residence, and this is reflected in the number of women and children present. In addition to participating in the extended kin networks described above, women were partners in the combination of mining and farming and worked to form and maintain the community. McGowan writes of the Shoalhaven district that

The vast majority of social activities were probably held at the instigation of the women and the success of the functions was almost totally dependent upon their exertions. They were also active in running businesses such as the post offices, shops and hotels and providing welfare and medical assistance.⁴⁵

Further, the institutions that marked the maturation of the community such as churches and schools, were also frequently organised by women and on behalf of children.

Families and single miners lived in houses dispersed across the diggings but generally located close to either a communication link or a processing facility. At Dolly's Creek most of the houses were strung along two roads through the settlement. At Spring Creek Jacqua small groups of huts were located adjacent to mining areas, tracks, and races and in the village of Spring Creek. On the Blue Tier the townships of Poimena and Lottah were surveyed and provided a focus for settlement, but as many as 16 families also lived on Crown land at the Crystal Hill mine, and many of the smaller, more

isolated claims had two or three huts nearby. There were also huts at isolated claims at Lisle, although there most families lived within the proclaimed township. At Arltunga the lack of water concentrated settlement around wells rather than mines, but there too houses and government buildings were in clusters of five or six. Archaeological remains are the best evidence for this dispersed pattern of settlement because documentary evidence tends to emphasise the main townships to the exclusion of smaller camps. However, it is the smaller camps that characterise the independent ethos of poor man's diggings and the resistance to government influence.

The huts themselves were generally small one or two roomed structures like those at Dolly's Creek, the principal remains of which are levelled pads and collapsed fireplaces of local stone. On early fields like Dolly's the timber-framed huts were covered with bark or calico while on later fields like the Blue Tier timber, corrugated iron and flattened kerosene tins were commonly used and in some instances have survived. At Arltunga stone was used extensively, partly because of the lack of timber and, as Holmes argues, partly because of the tradition of building in stone in South Australia, where many of the miners had come from.

There is little comparative information about artefacts at these sites, but some general conclusions can be drawn based on reported observations of surface scatters and on the excavations at Dolly's Creek and Arltunga. Predictably, the most common artefacts are broken bottles, ceramics, hardware, and pieces of metal scrap, all of which preserve well and are common to everyday life. Mining tools, basic household goods, and drink containers provide evidence of the need for expediency and transience and they also indicate the hardships and privations of subsistence mining. Other goods suggest ways in which the dwellings were decorated and made more comfortable. At Dolly's Creek such goods included wallpaper, pressed glass dishes, and a brass mantel clock case. In the Blanketburn Gully area of the Spring Creek Jacqua goldfield, McGowan reported the remains of a piano near one hut, while at Arltunga Holmes found the remains of a pool table associated with one site, and at another several upholstery tacks, tin 'cups' from the base of chair legs, and a thin strip of ornamental silver.

CONCLUSION

Poor man's diggings were a distinctive form of mining in nineteenth-century Australia that perpetuated a pre-industrial approach in which mining and other subsistence activities were combined. Using the case study of Dolly's Creek, archaeological and documentary evidence has been employed to delineate the archaeological evidence of industry, settlement patterns, and material culture and the model has been extended by comparison with evidence from other metal mining areas. The importance of kin networks and the need to maintain flexible subsistence strategies emerge from the documentary records of the fields, and highlight the integral roles played by women as well as men. The archaeological remains of subsistence mining are characterised by numerous small claims spread over a large area, the working of deposits using labour-intensive methods rather than sophisticated and expensive technology, and the palimpsest created by the repeated re-working of deposits over time. Settlement was dispersed through the region and huts were built clustered around mines and processing areas. Material culture, including small possessions and architectural forms, is consistent with the low incomes and transience of the mining families, but goods also included heavy and fragile items that had decorative, social uses. The longevity of the settlements, some of which were inhabited for thirty and more years, and their presence in all metalliferous regions, suggests that the significance of this form of mining should not be overlooked.

NOTES

- 1 Philipp (1987) and Coroneos (1993) have both noted the use of this designation in *Mining Surveyors' Reports* and newspaper accounts referring to their respective study areas, Bethanga, Victoria, and the Lisle-Denison goldfield, Tasmania. It was also used by the *Mining Surveyors (MSR June 1860)* in reports concerning Dolly's Creek, Victoria.
- 2 Dolly's Creek was an alluvial field, as was Lisle, Tasmania (Coroneos 1993) while on the Spring Creek Jacqua field in NSW a combination of quartz reefs and alluvial gravels were worked (McGowan 1992) as was the case in the White Ranges, N. T. (Holmes 1983, 1987). The Blue Tier tin field in Tasmania described by Jackman (1996) was essentially a subsistence mining operation, while the poor man's diggings at Bethanga was mined primarily for copper (Philipp 1987).
- 3 *Geelong Advertiser (GA)* 22 January 1859.
- 4 Philipp 1987:43.
- 5 At Dolly's Creek, 87 percent of the men surveyed as part of the Victorian Census of 1861 stated that they were miners.
- 6 McGowan 1992:46.
- 7 Evans 1975:45.
- 8 Louisa Lawson's experience of raising a family, running a farm, and serving as post mistress while her husband mined on the Gulgong field is one example of this division of labour (Matthews 1987), while the *Diary of a Welsh Swagman* (Evans 1975) provides several others.
- 9 MacMillan 1995.
- 10 Knapp forthcoming.
- 11 Griffiths 1988:7; *GA* 3 May 1859.
- 12 This was the case at the sites on the Klondike goldfields excavated by Stevenson (1982) and in Victoria is attested to by the diary of Joseph Jenkins (Evans 1975:37).
- 13 Smith 1992.
- 14 Lawrence 1995.
- 15 Ritchie (1981) has developed a typology of alluvial remains in which pot-holes or individual shafts and mullocky ground are described, and this is further developed by Coroneos (1993). Both these studies and the interpretation of the remains at Dolly's Creek draw heavily on the work of Smyth (1869) and Idriess (1931).
- 16 *MSR* December 1859; February 1860; *GA* 28 February 1859.
- 17 *Dickers Mining Record* October 1863:220.
- 18 Ritchie 1981:55.
- 19 *MSR* December 1874.
- 20 *MSR* 30 June 1879; *GA* 21 May 1883.
- 21 While alluvial workings have not been extensively studied, work by Coroneos (1993), Gaughwin (1992), and McGowan (1992, 1994) provide valuable comparative data on Australian sites while Ritchie (1981) discusses evidence in New Zealand.
- 22 Gaughwin 1992.
- 23 McGowan 1992.
- 24 Later censuses tabulated the information from Dolly's Creek in larger regional groupings, making local figures impossible to determine, while numbers in the *Mining Surveyors Reports* are for miners only.
- 25 Fahey 1983; Grimshaw and Fahey 1982; Grimshaw and Willet 1980.
- 26 *Victorian Government Gazette* 1861:260; Powell 1973:81-83.
- 27 Bannear and Annear 1990:44; *Victorian Government Gazette* 1858:1127; *Miner's Handbook* 1894:81-82.
- 28 Lawrence nd.
- 29 McGowan 1992.
- 30 For the work of women, see Lake (1988), while the archaeological implications are argued for by Hardesty (1994).
- 31 Gill 1982; Griffiths 1988:291; Tippin 1982.
- 32 Holmes 1983; Tordoff and Seldner 1987:58-61.
- 33 Griffiths 1988:304; Korzelinski 1979:57.
- 34 Clacy 1963:63; Griffiths 1988:60; Sussex 1989:24; Tippin 1982:21, 51 and Plate XII.
- 35 E. Bayard, pers. comm.
- 36 Edwards 1952 quoted in Coroneos 1993:166.
- 37 Korzelinski 1979:137.
- 38 Sussex 1989:17, 25.
- 39 McGowan 1992; 1994; Coroneos 1993; Jackman 1996; Holmes 1983; 1989.
- 40 Gaughwin 1992:59.
- 41 Bell 1987:9.
- 42 Philipp 1987:52-54.
- 43 Jackman this volume.
- 44 Bell 1982:6-9.
- 45 McGowan 1994:3.

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