

# Arltunga: A Minor Goldfield in Arid Central Australia

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*The Arltunga Goldfield lies over 110 kilometres east and slightly north of Alice Springs, in rugged country at the eastern end of the MacDonnell Ranges. Fieldwork has been carried out over several years, between 1977 and 1985. This article discusses the fieldwork briefly, with particular reference to the effects of isolation and the arid environment on the lives of the Arltunga residents as they can be detected from the archaeological record.*

## INTRODUCTION

An historical background to the site is given in the first volume of this Journal.<sup>1</sup> Most mining activity occurred between 1887 and 1917, with intermittent prospecting and mining since then. The original discovery of gold came as a result of a rush to the gemstone fields in the vicinity, and another rush in 1903 to nearby Winnecke's Depot (Fig. 1) provided additional manpower and interest. Despite covering an area of almost forty square kilometres, the goldfield was of minor interest in terms of population and gold production.

The contemporary records provide a history of mining at Arltunga, and also provide glimpses of everyday life. Petitions from the residents in the Arltunga area were surprisingly effective in getting government funding of over 3000 pounds for the sinking of wells, provision of postal

services (which always ran at a loss), improvements to roads and for setting up the Battery and Cyanide Works (which ran at a loss). Isolation and the environment made such services a necessity, but the funding from the South Australian Government was generous considering the low returns from the field. South Australia was keen to develop the Territory's potential; a rich gold discovery would have been very satisfactory. However, the field did not attract large companies with capital, and during the 1890s and early 1900s, government funding kept Arltunga operating.

Part of the goldfield is reasonably accessible, and since 1975 has been an Historic Reserve managed by the Conservation Commission of the Northern Territory (Fig. 2). This Reserve covers the southern and western areas of the original goldfield and includes the Government Works area at the Star of the North well, for treating the ore, and the Police Station at Kangaroo Creek well, along with other

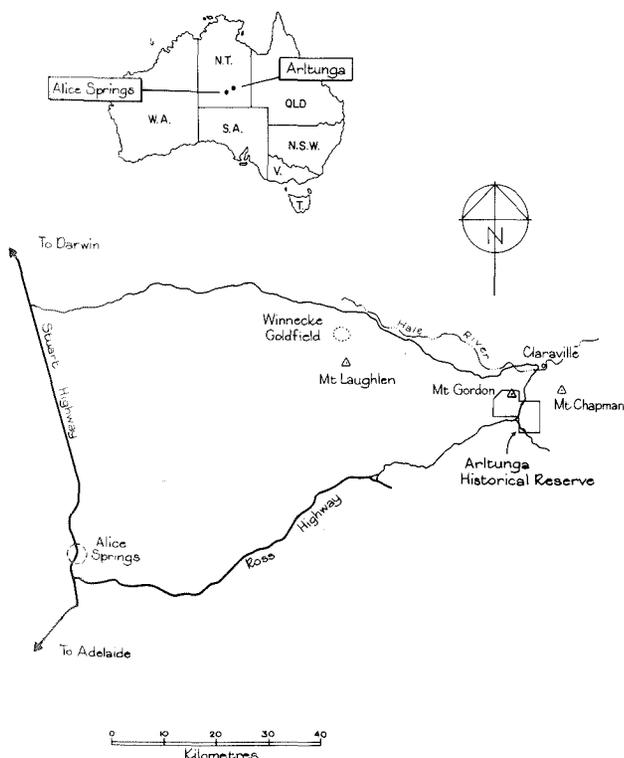


Fig. 1: Location of the Arltunga Goldfield.

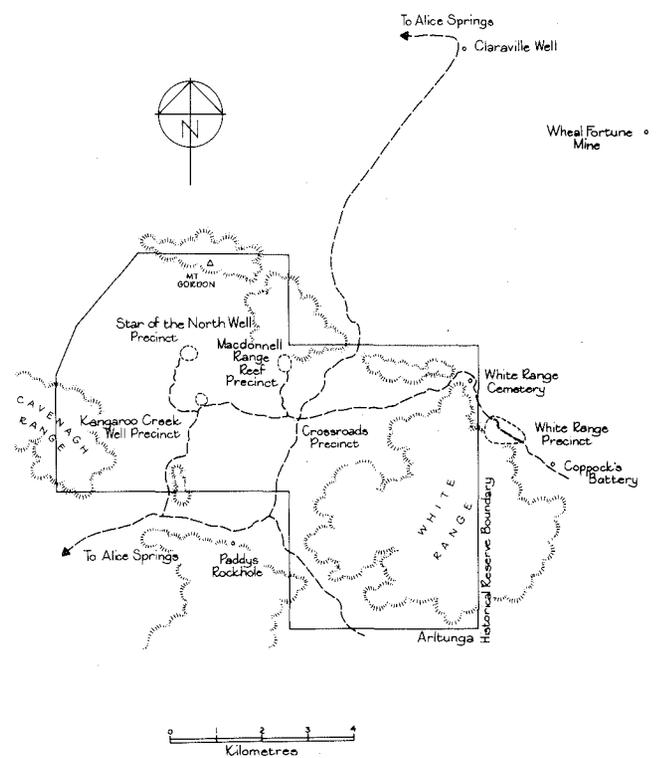


Fig. 2: Arltunga Goldfield, showing the major precinct, wells and roads within the Historic Reserve.

mining and building groups. The Reserve has provided no real protection, with mining now allowed in Northern Territory national parks and reserves. The White Range area, on the eastern boundary of the Reserve, contained the greatest concentration of mines, and associated domestic structures. Most of the mines were found on the quartzite bluff of the Range itself and many of these have now been destroyed by open-cut mining. The dramatic domestic sites, scattered across the foothills below the bluff, have been protected, but have lost some of their significance now that the reason for their use has been destroyed.

## SITE DESCRIPTION

The physical remains of European settlement present a pattern of scattered clusters over the landscape. Mines, workings, wells, building remains and tracks are found dotted all over the goldfield area, in groups varying from a few to a hundred. Mines are the major focal point, and such remains vary from a single small shaft, cut or tunnel, to groups of related workings, and finally to a concentration of mines within a defined area, such as at White Range. Associated with these workings, which are mostly shallow, are mullock heaps of discarded ore, minor structures, artefacts and occasionally domestic structures. Most building groups centre on the wells, for in this arid environment water was extremely important, and natural supplies very limited. These building remains, usually of stone, vary from obvious and well built stone houses through to less formal house types, single chimneys, paved floors and low stone walls, either rectangular or semi-circular in shape. The clusters or groups have been designated precincts. Connecting the mine areas to wells, domestic buildings, stores, the government treatment works and the police station were a series of tracks. Some of these survive in the modern roads (shown by broken lines in figure 2), others have been partially lost in the bush, and others bulldozed out of existence.

These precincts vary in both size and function. The White Range is the largest, with its concentration of mines and domestic buildings along the eastern face of the Range. The other mine precinct, at MacDonnell Range Reef mine, is the smallest with six small structures associated with a number of shallow shafts and tunnels. The two precincts containing government buildings also have the only formal house structures – the main police buildings, and the treatment plant offices and residences. In addition, both precincts have other less formal domestic structures. It is interesting to note that the police station is sited at the northern end of the Kangaroo Creek Well precinct, and the three other domestic structures are well away to the south.

The use of stone for building purposes may be partly cultural, and partly environmental. As far as the contemporary documents provide such information, it seems that most of the Arltunga prospectors came from South Australia. In that colony the use of stone was very common, and stone buildings in a mining context was emphasised by the use of Cornish miners in early South Australian copper mines.<sup>2</sup> The slow opening up of the arid Far North may have reinforced this cultural use, as timber was scarce. Stone also helped control the high temperatures in a long, hot summer. While early arrivals at Arltunga would have managed with tents, the arid climate, high temperatures and availability of outcropping schist, doubtless explains the numerous stone remains.

Even with tents, it was common practice to make a more substantial chimney of timber or stone, and the fear of bushfires would have made stone a priority.<sup>3</sup> Local timber

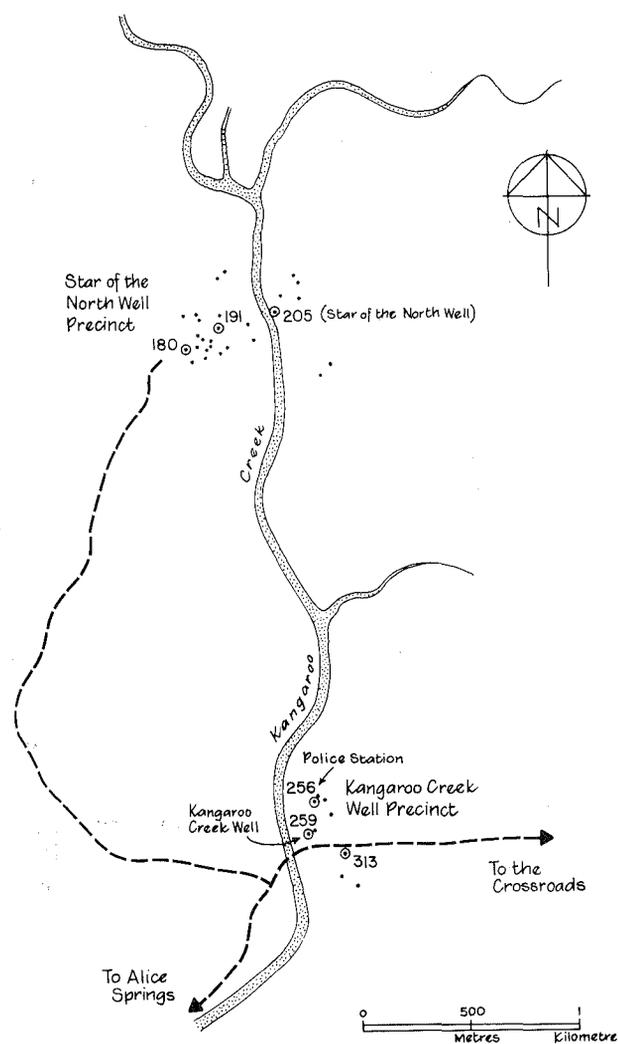


Fig. 3: Relationships within and between buildings at the Star of the North well and Kangaroo Creek well precincts.

was scarce, with relatively few large trees appropriate for building purposes. The contemporary mining records show that a small core of Arltunga miners remained on the goldfield for periods of between five and fifteen years. The reasons for such tenacity in the face of relatively poor returns remains a mystery, but helps to explain the surviving remains. A fleeting visitor may have coped with the limitations of a simple camp, and open fire for cooking, but someone prepared to stay for months, and then years, would have made some concessions to practical considerations, if not comfort. Those few who did make some profit, and/or brought wives to the field, would have been prepared to give extra time or money to providing more substantial quarters.

## FIELDWORK

Fieldwork has concentrated on the excavations of specific buildings and on the systematic collection of surface artefacts at those precincts most affected by visitors. The precinct-wide surveys were made easier by detailed mapping done by the then Lands Branch in Alice Springs, based on 50-metre square quadrats. These were marked on the ground, and reduced to a one-metre grid over building and artefact scatter sites. In the event of subsequent excavations, the grid could be re-established, and surface artefacts related to underlying deposits and finds. At White Range each of the four excavation sites was laid out on a site specific grid, using two-metre or one-metre squares.

The Star of the North well precinct, which includes the government battery and cyanide works, covers an area of some 700 by approximately 300 metres, only part of which has seen the collection of surface artefacts. The precinct includes the well on the eastern side of Kangaroo Creek along with some six structures. West of the creek, strung out along a small flat, are first the remains of machinery, foundations and substantial stone buildings; further west, and slightly south, are two fine residential buildings among the more informal partial structures found all over Arltunga – sixteen buildings in all (Fig. 3). The building remains are sufficient to suggest either work or domestic use, and the artefact scatter tended to confirm this. Those buildings closely related to the actual remains of the battery, though not completely surveyed, included a much higher percentage of items such as pottery crucibles, and bottles that may have contained chemicals. Otherwise, the surface artefacts show that the buildings were used at times after the final closure of the Works in 1917. At this precinct, almost 30 per cent of the datable bottles were made between 1910 and 1930. An increasing use of Australian made bottles, particularly after the First World War, with changes to the Australian Glass Manufacturer's base embossings with other body lettering has enabled precise dating, to within two or three years in some cases. Such use also fits the historical record, as prospecting continued in this area after the war, and particularly in the late 1920s and early 1930s, during the Depression.<sup>4</sup>

The nearby Kangaroo Creek Well precinct, some two kilometres downstream from the Works is smaller, some 500 by 150 metres, with fewer buildings. The precinct includes a small cluster of buildings making up the police station in the north, and three minor domestic structures well to the south (Fig. 3). Only the northern area, including the police station buildings, has so far been surveyed. As with the Works area, some of the buildings are formal, well built structures, while others are more casual types. It is

interesting to note that it is only at the official buildings, the Works and part of the police station, that these formal structures are found.

The collection of surface artefacts at this precinct has also shown a wide date range, as at the Star of the North. Here the greatest number of datable bottles occur in the relatively recent past, with 60 per cent from the 1950s or later, and 30 per cent from the 1930s and 1940s. Less than two per cent can be dated to before the First World War occupation, but the results have been affected by the presence of a 1950s rubbish dump close to the buildings, while the police station dump is well to the north east and yet to be excavated. The police station remained open until 1944, and occupation by the MacIntyre family in the mid-1950s is well documented.<sup>5</sup> It is also likely that the prospectors using the area in the Depression and mica miners from the Harts Range to the north would have camped near the station whenever they had occasion to carry out official business.

A partial excavation of site 256, one of the police station buildings, was required before major conservation work was carried out. This structure was built comparatively late in Arltunga's first occupation phase, in 1912-13, and was a recognisable house type. Photographic evidence and contemporary documents showed that this building survived in reasonably good condition until the 1950s, though by then without a roof. By the 1970s most of the walls had been reduced to a third of their original height. This destruction appears to have been deliberate, the result of prospectors in the 1960s and 1970s being told that the building stone contained gold. As this was the only one of several formal buildings so affected, and there was a comparatively good photographic record, this site was chosen for more complete restoration than any other Arltunga structure. The main aim of the excavation was to uncover the exact position of the original verandah posts.

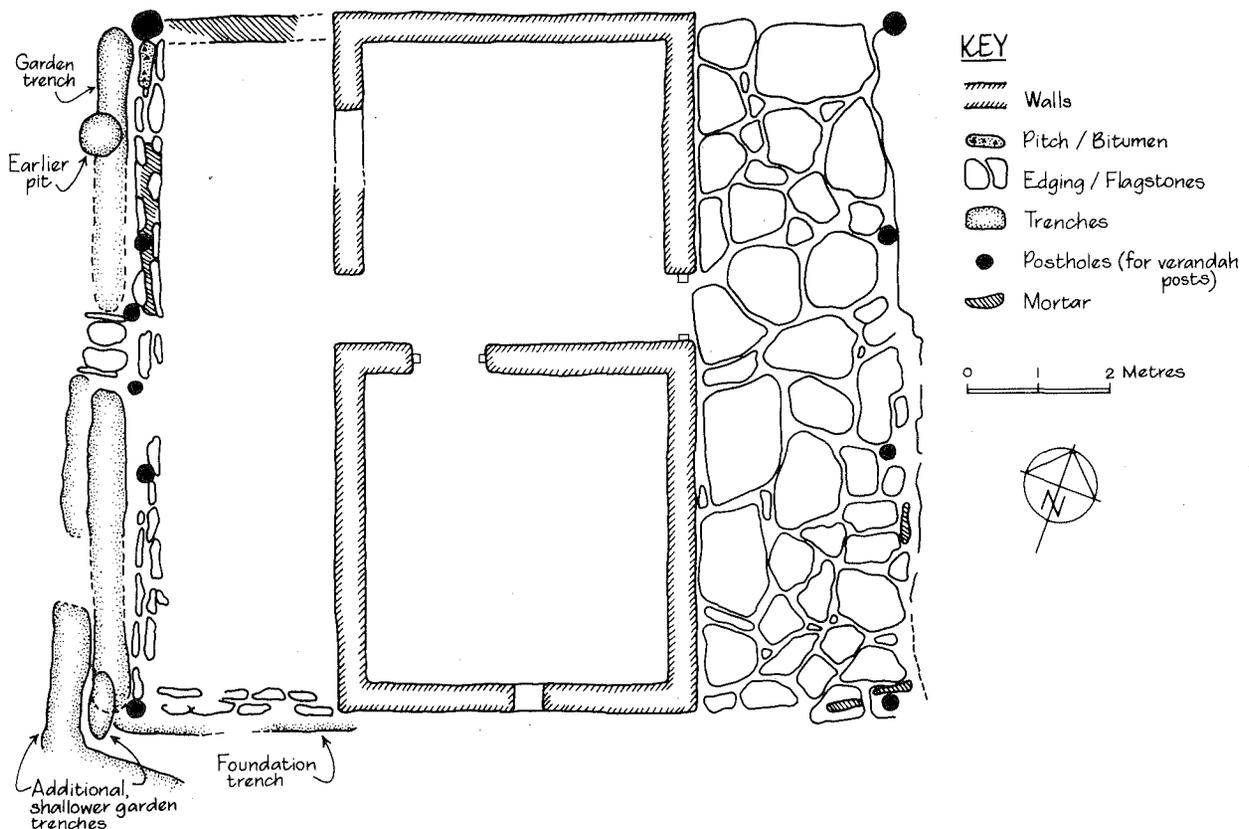
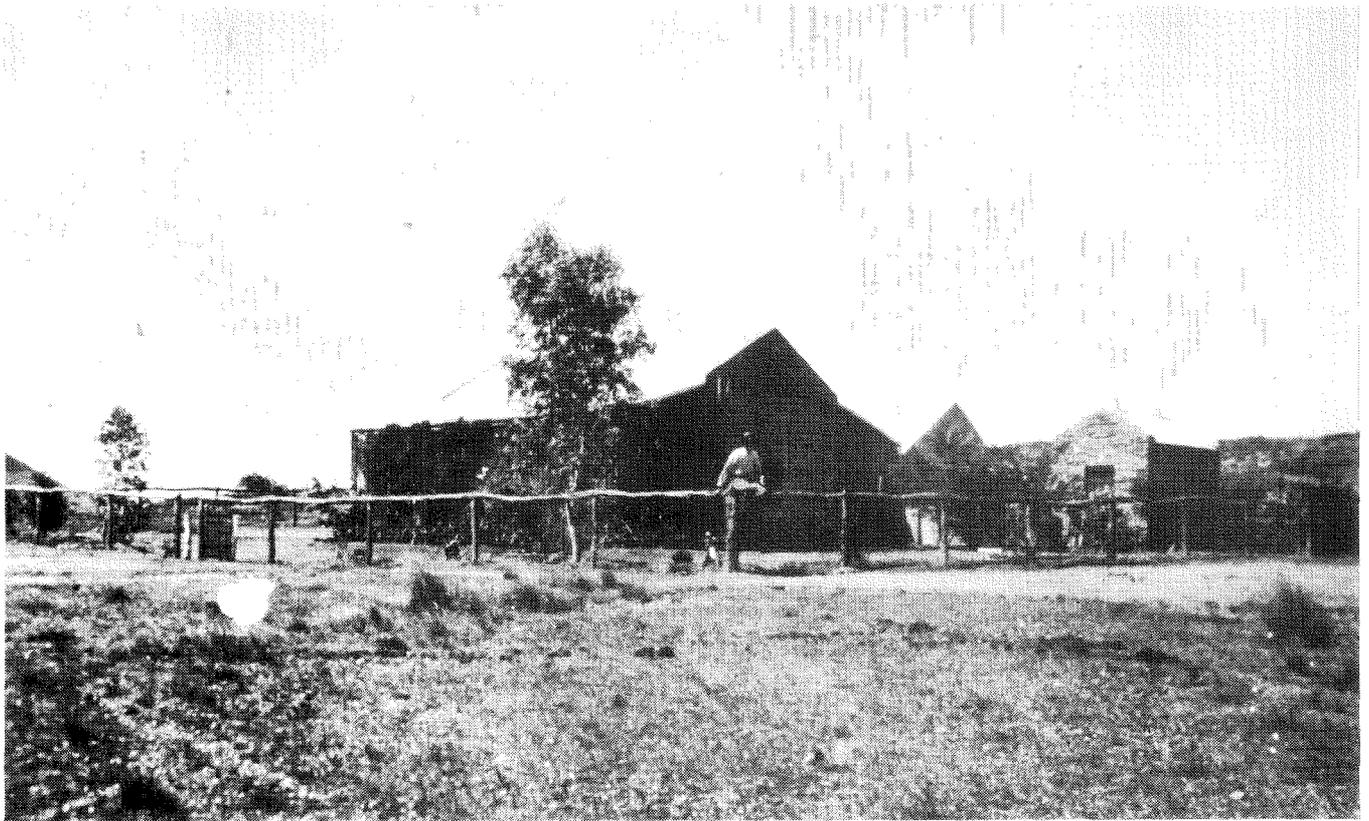


Fig. 4: Plan of site 256, the police station showing the position of the garden trench, the earlier pit and verandah postholes.



*Fig. 5: The police station, circa 1923, showing the successful growth of vines along the western verandah. Cavenagh Collection, courtesy of the Conservation Commission of the Northern Territory.*

The verandahs were on the east and west sides of the building, and on the east side, closely abutted earlier buildings were two small huts, which at some point had the original floors (stone paved and dirt) covered in concrete. Since the verandahs of site 256 were flagged and complete on the eastern side, the verandah posts were easily found in the few gaps in the flagstones, before the concrete floors began. On the western side, very little of the original flagstones had survived, though a slight slope meant that the verandah edge became clear when the collapsed wall material was removed. The posts were also quite easy to find along this western edge, but in the process, the excavation uncovered the trench for what must have been a garden bed, exactly the length of the western verandah (Fig. 4).

This garden bed was not completely excavated, owing to lack of time, but enough was uncovered to show that it was dug out of the underlying bedrock some time after the construction of the building. The verandah has a small entrance step in the middle, and excavation to the south of this showed the garden bed finishing at that point. On the northern side the trench was found to have cut through an earlier, deeper, but quite small pit. This pit may have been the first attempt at gardening, and the bottom was lined with bones, identified from the seven jaws as goat carcasses. Goats were an important source of meat, and possibly milk, at Arltunga, and the police constable certainly had his own herd in 1913.<sup>6</sup> This was the Arltunga version of adding blood and bone, the remaining pit fill being a somewhat gravelly reddish brown soil of source unknown. The fill of the garden bed contained a narrow band of woody material, followed by what may have been manure from the police horses and goats, and a fine brown fill. The success of this venture is shown in some of the historic photos (Fig. 5) and seems to have been an attempt to shade the building from the worst of the summer heat.

Relatively little detailed work has been directed towards the mines themselves. During the early years of fieldwork at the White Range precinct some photographic work was done, and since 1985 at least two field surveys have more completely recorded the mine area. Otherwise, a surface scatter collection has been carried out at the small MacDonnell Range Reef precinct. Few artefacts were found in close association with the mines, but on the eastern side, an area 200 by 100 metres including six very small structures, was surveyed (Fig. 6).

Two structures were found close to the mines, in the small area of flat ground available for use (square 52 in Fig. 6). One is a semi-circular stone building, with walls approximately one metre high possibly used for overnight storage of tools or a day-shelter from the sun, or in winter from the cool breezes. The other was a small rectangular foundation, apparently related to the rubbish found scattered down the slope to the north. This site and rubbish dump were the most obvious signs of domestic use of this precinct, and possibly date to a minor occupation of the site. One particular pharmacy bottle with its helpful lettering was datable. The bottle was made in Adelaide and embossed with the chemist's name, A.K. Newbery, and his address, 66 Rundle Street. Newbery appears in the Sands and McDougal directories of Adelaide between 1901 and 1912, but was at 66 Rundle Street only between 1905 and 1911. The mining records show that Fritz (Frederick) Klau worked the mine briefly in 1906, and William Russell in 1907 and 1908. It seems that one of these men lived and worked here, and left behind his rubbish.<sup>7</sup> The earlier history of the mine, dating from 1892, suggests that several men worked the claim, with Henry Luce being either an agent for the owner, or the owner of the claim, from then until 1898.<sup>8</sup> There is no archaeological evidence for the long-term occupation of this particular mining area by several men over a number of years. It seems likely that

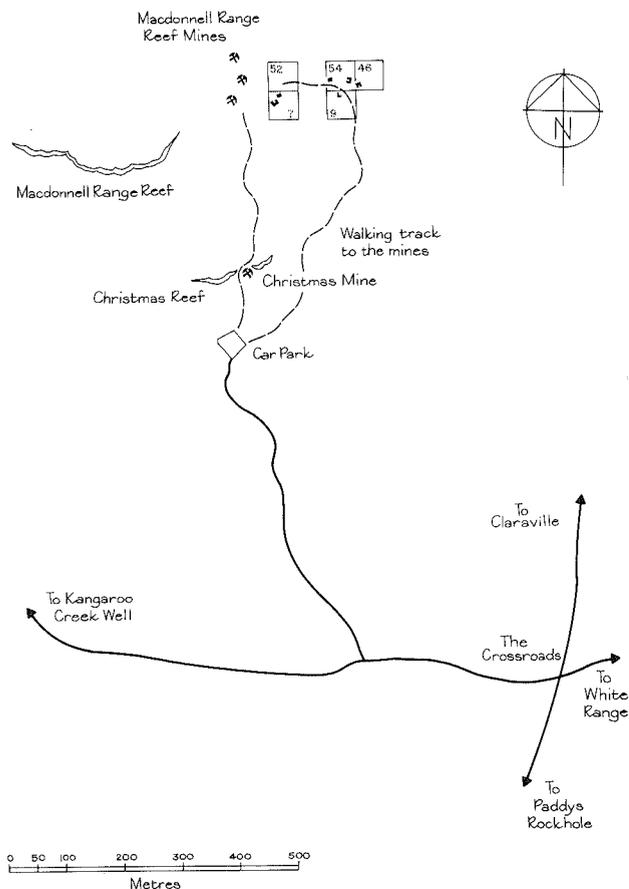


Fig. 6: The small MacDonnell Range Reef mine precinct showing the position of the minor structures in relation to the mine, and its general location.

with the nearest well at the Star of the North (sunk in 1892), less than two kilometres to the west, that the men lived closer to the well.

The remaining buildings at the precinct, a further 75 to 100 metres east of the mines in the next available flat ground, appear to have a working rather than domestic function. One is a small squarish solid stone structure, identified as a forge fireplace, and the remainder were low-walled, roughly semi-circular stone structures. There are many of these buildings scattered over Arltunga, and their exact function has not been established, though they are believed to be some sort of shelter. The artefact scatter was quite light with many metal objects ranging from clothes buttons to wedges, chisels, a pick head and machine parts. A particular feature of this precinct was the number of tin matchboxes, mostly Bell and Black types. Eight complete examples were found, plus ten without their bases, and another 43 lids. There was also a Bryant and May Wax Vesta lid and a plain-lidded box with a textured striking area on the base. These were riches indeed, as the three White Range sites produced only ten incomplete examples, the police station buildings at Kangaroo Creek had one, plus several lids. The extraordinary number here at MacDonnell Range Reef mine may be partly owing to its use as a working area and to its relative seclusion from modern visitors. Very little modern material was found at this precinct, and it is possible that other precincts, more heavily visited, have had the small, light, identifiable and portable matchboxes removed for souvenirs.

Henry Luce seems to have been the man most concerned with the working of the MacDonnell Range Reef mine. His origins are unknown, but he was in Stuart, now Alice Springs in 1889 and at Arltunga by the following year. The

mine was moderately productive, but when the Star of the North well was taken over for the newly arrived government battery late in 1897 living arrangements became more difficult. The Kangaroo Creek well was sunk during 1898 to accommodate those miners affected by the battery takeover, but in the meantime Luce had been considering new areas. He visited the White Range, further east, where one prospector had found alluvial gold; Luce realised the potential for reef gold. He pegged the White Range claim, later known as Luce's, early in 1898, and others soon flocked to join him. Little is known about the number of men employed on any one claim, but the Golfield Warden noted that Luce employed six at MacDonnell Range Reef in 1896, and at White Range in 1901 he employed eight men. Again, little is known about wages, but they may have been between three and four pounds per week. Luce had three claims in all, and they seem to have been productive. He died in December 1903, aged only 39, at which time the claims were valued at almost 3,000 pounds. He spent most of his working life at Arltunga, but either did not make quite the fortune he hoped for or he enjoyed the outback life. He was buried at the small White Range cemetery, possibly the first burial at this site.<sup>9</sup>

There are hundreds of building remains at White Range, many groups of two to six or so small structures making up one camp. Henry Luce's White Range home has not been identified and may never be, but site 100 has been identified with one miner, Patrick O'Neil, and his wife, Elizabeth. This site has been described in the 1983 article, and both the archaeological and the documentary record show that O'Neil was a man of many parts. As well as providing a small service to the community by bringing up a billiard table, the records show that he was involved in sinking the third White Range well between 1907 and 1910. He did comparatively little mining and seems to have been one of the more entrepreneurial residents. His wife's name appears on the electoral roll of 1905 and 1909 and on some of the mining records in 1911 which may suggest that Patrick died in late 1910 or 1911.<sup>10</sup>

The importance of site 100 lies in the diversity and extent of the original camp, compared with the above-ground remains. The added advantage of identifying the inhabitants has raised questions about social and economic standing among Arltunga residents. Stone was readily available, while corrugated iron had to be brought from the south at some extent, but the main living area of the camp was a corrugated iron hut with paved floor and stone chimney. The possible connection between above- and below-ground remains and economic status has yet to be fully explored, but this site has raised interesting possibilities. The site also had a small rubbish dump containing a large number and variety of items. Several bottle and can types have been found only at this site, which might suggest a greater access to consumer goods or the presence of Elizabeth. There are few references to women in the Arltunga records, but the references to her are borne out by some of the artefact evidence, which also suggest the presence of children. A number of small round cans, 8.3 cm tall and 7.5 cm diameter, with two roughly punched holes in one end, have been identified as containing canned milk. At site 100, 301 of these cans have been recorded, both the older hole-in-cap construction, and the later double-seamed types. From a total of 715 cans 503 have been identified as containing milk, fish, vegetables or meat. Very few milk cans have been found at other sites which reinforces the possibility that the O'Neils had children. With the only fresh milk coming from goats, and probably not always available or palatable, the need for canned milk is obvious. While fresh beef would have been available at times, fresh fruit and vegetables were more difficult to

obtain, as the lack of water and poor soils made market gardening almost impossible. It seems that a Chinese market gardener visited the goldfield from Alice Springs, possibly during the 1890s and almost certainly in the early 1900s. The need for such fresh foods was well known, but the price of such items would have been high.<sup>11</sup>

Site 98, also described in the 1983 article, is mentioned again because of the significance of one particular feature, the wind tunnel, discovered during excavation. The site was identified as the store before fieldwork began, and excavation confirmed this function. Its features were a comparative lack of artefacts, the large storage capacity in the timber structure, and the smaller, well built stone structure cooled by the wind tunnel. This neat attempt at passive cooling is one of the most significant expressions of local attempts to cope with the high summer temperatures experienced at Arltunga, and is another indication of the importance of perishable food items on the goldfield. The large timber structure is a physical expression of limited access to stocks, as the records indicate that horse and camel teams arrived at intervals of between six and ten weeks. Mining equipment, including tools and ore buckets, clothes and bulk-foods would all require a fair storage capacity.

Another site excavated at the White Range, site 59, was chosen because its position close to the track leading up to the mines made it accessible to visitors. One of the problems with a short occupation site such as Arltunga in a rocky landscape is that a high proportion of artefacts tend to remain on the surface, and it is hard to estimate how many have been removed. Such disturbance becomes more frustrating when the artefacts may help to establish the function of different building sites. At least one artefact, part of a wagon axle, was removed between the initial discovery in 1978, and minor recording in 1980.

The main structure at this site is unusual in shape (Fig. 7), with approximately one metre high stone walls on three sides, but open on the fourth side. In addition, the eastern end forms a reasonably rectangular shape, while the western end has been opened out by a small room to the north, and an angled addition to the southern wall. Several structures with only three walls have been recorded at Arltunga, but none quite as irregular as site 59. One of the others, at the White Range, is site 110 which has also seen some limited excavation, and it is reasonable to suggest that such buildings were connected with horses, through the services provided by carters and saddlers. Site 59 has a separate small forge fireplace, whereas at site 110 a possible forge was found inside the three walled structure.

The excavation of the major structure found that the major deposit within the eastern section of the building was a 20-30 cm thick layer of ash which gradually disappeared between the 8 and 9 squares. This suggests a bough-shelter roof for this part of the structure. Several postholes were found, more or less marking the centre of the building, including a smaller one in 9G, suggesting that the wider section also had some sort of roof. This may have been canvas, or possibly the original bough roof was lighter, or not affected by the fire at this site. Another feature of the excavation was that to make the northern section, including the extra 'room' it was necessary to cut into the original slope of the land. This was done only to a depth of about 50 cm, but over an area of some six by five metres. It would seem that the advantages of being close to a major access track were greater than the disadvantages of a long, narrow flat and the need to increase the possible living area.

The artefacts were a mixture of domestic and work-related items, so mixed indeed that it is difficult to pinpoint any one area as being just for living or just for working. However, the artefacts do suggest that the occupant was a saddler or carter, as 18 complete rivets, seven with leather fragments still attached, 18 part rivets, and 50 fragments of leather were found. The other White Range sites produced no leather and only six rivets. Only the Works area at the Star of the North precinct which would have seen quite a bit of traffic has so far produced 13 complete and eight part-harness rivets. Only two horseshoes were found at site 59, but several harness buckles and other harness pieces and probable wagon parts support the likelihood of the site being a work place. In addition, a surprising number of cartridges and bullets were found, 65 compared with only seven from the other White Range sites. Most were found in the southeast corner of the major structure, along with a thick black deposit, possibly carbon black, suggesting that the occupant provided a cartridge refilling service. The usefulness of the wide opening of the main structure at site 59 has been affected by the presence of a minor structure, which partly blocks the opening. This smaller structure was marked by two parallel lines of stones set on edge, and the excavation found four corner postholes. It was presumably a shaded work area, but the artefacts were not particularly informative though cartridges, nails, leather rivets and a horseshoe were found.

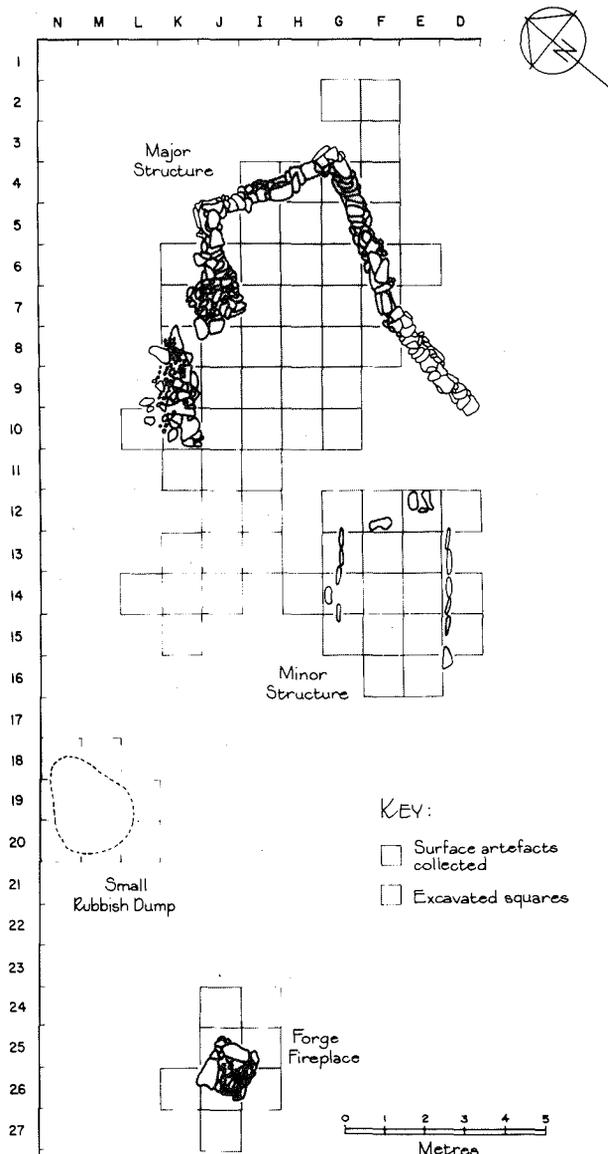


Fig. 7: White Range, site 59, showing the unusual shape of the major structure and its relationship to the minor structure and the forge.

The domestic artefacts from the site included the usual bottles and cans, nails and packing case tin as well as an unusual number of what may be furnishing items. Several upholstery tacks were found, a decorative 'S' hook and small tin 'cups' possibly from chair legs. If these were part of the furnishing of the site, it is an unusually comfortable camp, which may suggest the presence of a woman. Another unusual artefact, also perhaps pointing to a woman's presence, was a small strip of thin silver, possibly from the handle of a carving knife or fork, or an ornament. One edge was scalloped, there is an incised design, and it was stamped at the Birmingham Mint in 1903. Several of the Arltunga residents were known to have been carters but only one, J.T. Kinnear, is known to have had a wife. He had arrived at Arltunga late in 1902 and carted ore from all over Arltunga until 1907 when he began working at the government Works. Another possible occupant is Thomas Young who was a saddler, blacksmith and carter with apparent connections with White Range in the early 1900s. George Fairclough was a blacksmith and miner at White Range between 1904 and 1910, and William Russell was also known as a blacksmith, saddler and prospector. Russell was mentioned as a saddler in 1893, as the discover of payable gold at Star Creek, well to the east of White Range in 1894, is also credited with discovery the alluvial gold at Winnecke's Depot. He is the same Russell connected with the MacDonnell Range Reef mine, and carried out various repairs to wells apart from his harness work. He is not especially connected with the White Range area, and the relative comfort of this camp does not seem to fit Russell's roving image.<sup>12</sup> In this case the probable occupants cannot be identified definitely, but the probable function of structures with only three walls and an open fourth being related to carting or blacksmithing seems established.

## CONCLUSIONS

This paper is, of necessity, only a brief review of fieldwork carried out at Arltunga. The archaeological remains at first sight suggest that it was occupied by a largely male population in a relatively isolated part of the arid interior which has visibly left its mark. Individual sites excavated so far show that effort was often made to use both the natural landscape and the prevailing south-easterly winds to alleviate extremes in temperature. The presence of women and children rarely mentioned in the contemporary documents can be teased out from gender-specific and age-specific artefacts found in surface collections and from the range of canned foods needed to cope with the deficiencies of an outback diet dependent on salt beef, damper and tea.

Some of the most interesting information gleaned from both structures and surface collections relates to the question of diet and how health was maintained in Arltunga's testing climate. Dietary evidence from Arltunga has been collected and analysed in some detail, although results are too complex for presentation here. When comparative data from rural and urban settlements become available this must surely be a new and important area of investigation for which the Arltunga evidence will be a major contribution.

## ACKNOWLEDGMENTS

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## NOTES

1. Holmes, 1983:78-80.
2. See Selby J. (ed), 1987:63-100, 157-172; Chilmun 1982 chapter 25.
3. For earlier examples, see von Guerard's drawings and paintings, in Tipping, 1982:17, 21, 46 etc.
4. AAC CRS A1 30/5562, 35/11471; AAD CRS F1086.
5. AAC CRS A1 30/9562, 31/668, Information from Darwin police; Mines Branch, Alice Springs and MacIntyre Photographic Collection, CCNT.
6. AAC CRS A3 15/1650.
7. SAA PRO GRS 1 1906/43, 44; 1907/35, 56, 1908/6, 94.
8. SAA PRO 820, GRS 1 1893/259, 352, 1895/150, 1896/16, 1898/34.
9. SA PRO GRS 1 1889/586, 1890/393, 1896/16, 1901/ 34, 1902/399, 1904/37 and 305.
10. SA PRO GRG 67/14; GRS 1 1907/35, 1908/6, 1910/50; Dept. of Mines, Darwin, NT Gold Leases No. 1.
11. Kimber, 1986:3; Coulthard, 1903:March and April; Muskett, 1893:chapter VI, XI.
12. SA PRO GRS 1 1903/38, 1907/35, information from Old Timers Museum, Alice Springs; 1897/12, 1900/13 and 308, 1905/11; 1904/20 and 256, 1906/44, 1908/6; 1893/451, 1894/130, 1900/460, 1902/77, 1907/35.

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