

THE ECHUNGA GOLDFIELDS

GEOLOGY, HISTORY AND
SELECTED NEWSPAPER READINGS

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Government of South Australia
Primary Industries and Resources SA
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INTRODUCTION

The Echunga Goldfield preserves a wide range of gold mining activity over period of almost 150 years. The field stretches southwards from Hahndorf and comprises three main areas (Fig. 1):

- Hahndorf to Mylor
- Old Echunga Diggings (including Chapmans Gully)
- Jupiter Creek Diggings.

Although reef gold was first discovered at the Victoria Mine near Montacute in 1846, and alluvial gold in the Onkaparinga River near Balhannah in 1849, Echunga was the first proclaimed goldfield in the State, in 1852.

Gold mining contributed greatly to the development of Australia in the latter half of the 19th century. The gold resources were widely distributed, and towns grew overnight as news of rich finds attracted rushes of thousands of men. However, the gold finds in South Australia were too small (0.25% of the Australian total production) to play a major part in the economic development of the State. Though they stimulated much local excitement and caused significant short term population movements, they could not compete with mineral discoveries in other States which led to mass exodus from South Australia on several occasions.

Even the first major gold discovery only 16 km from Adelaide at Chapmans Gully (Plate 1), near Echunga, in 1852 could not halt a general exodus of about 16 000 men to the Bendigo Goldfields in Victoria. The initial rush to Echunga only delayed about 1000 men for a short period on their journey to the Victorian goldfields, but intermittent gold mining activity was maintained in subsequent years by a succession of new discoveries and minor rushes. By the turn of the century, the Echunga Goldfield had become South Australia's major producer of gold (perhaps up to several hundred thousand ounces), won mainly from an area extending from the initial find at Chapmans Gully, southwards down Long Gully to Jupiter Creek.

The two most significant diggings - Old Echunga (excluding Chapmans Gully) and Jupiter Creek - are fortunately located on Historic Reserves under the control of the Department of Mines and Energy, and have been zoned for recreation including fossicking. Both sites have been exempted from the operations of the Mining Act and placed on the Register of State Heritage Items. The temporary nature of the stores and miner's dwellings, plus the need to recover some of the assets of failed companies, resulted in rapid disappearance of all but some stonework and the diggings themselves. Yet there is enough remaining to piece together a story and imaginatively reconstruct the scene and its events.

GENERAL GEOLOGY (Fig. 2)

The oldest rocks in the area were originally deposited as sediments in a large subsiding trough known as the Adelaide Geosyncline, 800 million years ago.

About 500 million years ago, major earth movements over a period of about 50 million years converted the Adelaide Geosyncline into a north-south trending mountain range.

During the next 400 million years, extensive erosion produced a flat landscape. During the beginning of the Tertiary Period (about 65 million years ago) old faults became active again and certain areas began to subside, forming basins in which sediments could accumulate. By contrast, the present day Mount Lofty Ranges were generally above sea level as a series of uplifted fault blocks (horsts).

Further block faulting in the late Tertiary accentuated the horsts and grabens and initiated further extensive erosion of areas such as the Meadows Basin where freshwater sands and gravels (along with gold) were deposited in ancient river channels 5 to 15 million years ago. In the Echunga area, Tertiary sediments of the Meadows Basin were deposited on deeply weathered shale and sandstone. Further uplift along the old fault lines about 2 million years ago resulted in dissection of the once continuous Tertiary deposits; this process continues to the present day. This has resulted in the present relief which is generally rounded with flat-topped ridges which formed part of the early Tertiary erosional surface before block faulting and erosion brought about dissection.

The alluvial gold of the original rush at Chapmans Gully was found near the surface on the hill slopes and at shallow depths in modern alluvium of the gully (Fig. 3). To the west at the head of Long Gully the gold was found at the base of cemented Tertiary gravels (conglomerate) along ancient water courses (leads) at depths up to 12 m below the present land surface.

At Jupiter Creek the alluvial gold was found at shallow depths in reworked Tertiary gravels and sands on the hillside and to depths of 5 m at the bottom of the gully. The source of the alluvial gold was the numerous thin quartz-ironstone veins (reefs) on adjacent hillsides which contain finely disseminated gold. Once the alluvial deposits were worked out attention turned to the reefs, but although a few rich patches were encountered, they were never an economic proposition.

OLD ECHUNGA DIGGINGS (Fig. 4)

Discovery and Early History

In 1839, Thomas Hack purchased the Three Brothers or Echunga Survey and erected a house near a creek he named Echunga Creek after the aboriginal word 'Eechunga' meaning 'close to'. In 1844 Jacob Hagen acquired the Echunga estate and rented out small blocks of land on the property. By 1848, Hagen saw the need for a planned village and divided part of his property into town allotments. This became the township of Echunga.

In 1849, William Chapman arrived in South Australia and assisted his father in farming operations at Echunga. Following the discovery of gold in Victoria in 1851, Chapman, then aged 20, joined the rush and gained gold mining experience in the Bendigo district. He returned to his father's farm at Echunga in late 1851 and because the surrounding country reminded him of the Victorian Fields he commenced prospecting. He may also have been prompted by the Government's announcement in December 1851 of a reward of £1000 to the discoverer of a payable goldfield in South Australia. At this time, the first regulations relating to the issue of Licences to search and dig for alluvial gold on Crown land were proclaimed and served as an inducement to individual miners who did not have the capital to bid at auctions for 80 acre sections. The reward and the regulations were attempts to stem the exodus of men to the Victorian goldfields.

The first gold was found by Chapman in early 1852 on the alluvial flats of the Onkaparinga River near Warland's Wheatshaf Hotel (this building was later the home of Surveyor-General Goyder and still stands). Chapman made his discovery known to his father and two mates, Hampton and Hardiman, because they were more familiar with the countryside. Further surface gold was found nearby on Crown land at Donkey Gully and traced to what is now known as Chapmans Hill. There Chapman and his father discovered gold on the surface at the base of a stringy-bark tree, laid bare by the water dripping from the leaves.

Several ounces of gold were washed from the roots of the tree and several bullock-dray loads of the surrounding alluvium were carted away in sacks and washed yielding about 1 oz. to the sack. By this time people in the neighbourhood had begun to suspect that Chapman and party had found gold, so it was decided to lay claim to the £1000 reward offered by the Government to the discoverer of a payable goldfield. Chapman Sen. and Hampton travelled to Adelaide on August 23, 1852 to claim the reward, taking with them about 7 oz. of rough gold. At the Treasury they made an oath that the gold had been found in South Australia. The following day they returned to Chapmans Hill with the Colonial Secretary Mr Finniss and a number of police in a party of 50 to 60 horsemen.

William Chapman was told to wash out a dish of the alluvium by Mr Finniss and in order to render fraud more difficult he was made to take off his coat and roll up his shirt sleeves. Chapman gathered up a dish of alluvium from an undisturbed part of the surface and began to wash it. He was closely hemmed in by an eager and excited crowd. The dirt was slowly panned off but no sign of gold was seen. Fearing a swindle the crowd became impatient and started to express their feelings with cries such as 'lynch him' and 'string him up'. But Chapman was confident of success and of police protection. As he neared the bottom of the dish a quick twist of the dish revealed the gleam of gold in the bottom, which he held up for Mr Finniss' inspection.

Immediately there was a great excitement and the shouting and noise was so great the horses tied to nearby trees broke their bridles and galloped away. Everyone began to wash and kettles, billies, saucepan-lids, pannikans and even hats were used, each finding a small amount of gold. Chapman washed out several more pans for Mr Finniss, who returned to Adelaide with about 0.5 oz. of gold and proclaimed the find to be genuine.

According to the first gold mining regulations in South Australia, which were issued on 17 December 1851, gold licences allowed the holder to dig, search for and remove alluvial gold from Crown land only (minerals on private property belonged to the landowner at that time). The licences cost 30 shillings per month and the area allotted to each licence holder was 6 m square. The conditions of the reward were that licences to the value of £1000 and £10 000 worth of gold (valued at £3.11 per ounce) had to be found in the first two months.

The excitement over the Victorian goldfields was then at its peak and endless streams of wagons passed on the main road through Echunga and Strathalbyn to Victoria. The new rush at Chapmans Gully stopped some of these even if only temporarily, and within a few days 80 licences had been issued by the Commissioner of Crown Lands, Mr. Bonney. The diggings were restricted to Chapmans Hill until the nearby gullies were sufficiently dry to be worked. Some parties prospected for distances of several miles from the original discovery site and tents had been erected in all directions.

By the middle of September, Bonney was replaced on the field by Assistant Commissioner Murray and police troopers went around the diggings warning the men that no unlicensed person would be permitted in future. The unlicensed diggers complained that this was harsh and unjust and would have the effect of driving them away and retarding exploration. Surfacing on Chapmans Hill had given way to sinking in the adjacent gully, known as Chapmans Gully, and one party had produced 53 oz. at a depth of 2 m. However many were dissatisfied with their returns and the amount of gold being found was insufficient to stem the steady migration to Victoria.

By early October, less than 7 weeks after the commencement of the run, about 600 people including women and children were living on the diggings with an additional 70 to 80 coming from the neighbourhood. About 130 tents (some forming a little village at Wattle Flat) and some wattle and daub huts had been erected. A number of stores including a blacksmith and several butchers and bakers had commenced business. The diggings were still confined to Chapmans Gully and Hill and small nuggets up to 4.5 oz. had been found. The washdirt (gold bearing alluvium) was composed of cemented quartz, ironstone and sand, up to 12 cm in thickness lying on top of the pipeclay (weathered bedrock). The depth varied from 2 m in the upper part of Chapmans Gully to 4 m at the lower end.

Two months after commencement of the rush, 684 licences valued at £1026 had been taken out but many had left the diggings hoping to make their fortunes in Victoria. The main part of Chapmans Gully was thought to be worked out and was nearly deserted, but Chapmans Hill was still proving profitable and the adjacent Windlass Hill had been rushed and completed marked out in claims. Between 200 and 300 diggers still remained on the field and some parties had commenced prospecting in hard conglomerate to the west of Chapmans Gully. Windlass hill and its northern slope (known as Feltus Flat) proved better than the diggers had expected, with yields averaging 3 to 6 oz. per cart load of alluvium and one party producing 60 oz. from one week's work. The population on the diggings was still around 600 to 700 with about 240 tents but unlike Victorian fields they were very orderly and no difficulties were encountered in enforcing the regulations.

By late December 1852, the diggings were nearly deserted, many returning to their farms, and the Assistant Commissioner was recalled to Adelaide. In the first three months of the rush more than 1000 licences had been taken out and it was estimated that about £18 000 worth of gold (about 5 000 oz.) had been purchased by goldbuyers on the diggings. This did not include that purchased by the banks or taken to Victoria by the miners. Chapman and party now decided to apply for the reward of £1 000 but were refused, the Government arguing that there was no proof that £10 000 worth of gold had been raised. Following a petition sent by diggers to the Legislative Council in 1854 requesting that the reward should be paid to Messrs Chapman, Hardiman and Hampton, the Government ultimately paid a reward of £500.

Other Rushes

As the original rush in the Chapmans Gully area began to diminish, diggers commenced prospecting to the west at the head of Long Gully. Here the gold was associated with ancient buried water courses (Tertiary in age) in cemented gravels at depths of up to 9 m below the present land surface. In January 1853 a rush involving about 150 diggers took place to Bells Hill. This however proved somewhat of a failure and only about 50 men remained on the rush, which was abandoned by July, each earning an average of less than 10s per week. Commissioner Bonney now issued licences only once a month at the Wheatsheaf Hotel and a request for a reduction in the licence fee to 10s per month, due to the depressed state of the diggings, were refused.

More than a year later following further rich discoveries at the head of Long Gully west of Bells Hill in December 1854, more than 200 diggers again petitioned the Governor for a reduction of the licence fee to 10s. As the new discoveries were being made at depths up to 11m and encouragement was needed, their request this time was granted. The reduction in the licence fee had an immediate effect and by Christmas 1854, more than 500 people were on the field and the new rush called Christmas Rush, was established.

Wattle Flat was still the most populous area with 2 butchers and 6 stores but operations were mainly confined to the head of Long Gully.

The yields of the 200 to 300 diggers who worked on Christmas Rush varied widely. There were reports of yields between 0.5 and 12 oz. per bucket of washdirt, and of 120 oz. from one hole, but many were not even making wages. The sinking however was relatively soft and many small nuggets up to 0.25 oz. were found.

Early in 1855, diggers moved west from Christmas Rush to Poor Mans Hill (Fig. 5) where the sinking was through hard cemented conglomerate to depths up to 9 m. Small nuggets up to 1.5 oz. were recovered from the bottom of some shafts. The rush was shortlived however and by February 1855 the diggers began to disperse to rework old diggings and follow the rush to Donkey Gully. The discovery of gold at Forest Range resulted in the Echunga diggings being virtually deserted by late 1855.

Early in 1858, a party of 8 prospectors, including Simpson and Brown, subsidised by a grant from the Government discovered payable gold south of Poor Mans Hill. A small rush, named New Rush, took place with about 50 men taking up claims. The sinking was through hard conglomerate to depths of 8 to 11 m, with yields averaging 0.25 oz. per tub.

In the late 1860s, companies erected treatment plants on the upper reaches of Long Gully and the National, Prince Alfred and German dams were erected to provide water to treat the alluvial material, but operations were shortlived. During 1868 and subsequently, rushes occurred at Jupiter Creek, and these are described elsewhere in this report.

In the 1880s and 1890s, further alluvial mining took place on the old rushes near National Dam and Chapmans Gully. A gold dredge operated with little success on National Dam in 1909. Up to 30 men reworked the Old Echunga Diggings in the Depression years of the 1930s but only small amounts of gold were recovered. The total production of the Old Echunga Diggings is possibly about 100 000 oz.

Other small rushes took place in the Echunga-Hahndorf area at Donkey Gully (1855), Hahndorf Gully (1858), Sailors, Sawmill and German gullies (1872), Little Bendigo Gully (1873), Biggs Flat (1877) and Houghs Diggings (1893).

Reef Mining and Company Operations

Echunga Mine

Following the alluvial rush at Chapmans Gully in 1852 attempts were made by the diggers to find the reefs from which the alluvial gold was derived. By 1854, a quartz reef on Chapmans Hill was known to contain gold but was too hard to be worked by the diggers. In 1857, a lease was taken out by 3 miners on a quartz reef about Chapmans Gully and a crushing machine installed. A shaft was sunk and a pocket containing about 100 oz. of gold was discovered at 9 m. This prompted the formation of the Echunga Gold Washing and Quartz Crushing Company in November 1858, the mine being named the Echunga Quartz Blow. They erected a horse puddler, 16 hp steam engine and stamp battery, blacksmith's shop and several cottages, but the venture proved unsuccessful and operations ceased in 1860.

The Echunga Mine and the adjoining Big Ben Mine, which was first worked in 1858, were reworked at various times up to the 1890s and again in the 1930s. It is estimated that about 1000 oz. of reef gold were produced from small quartz veins in the vicinity of Chapmans Hill.

National Gold Mining Company

In 1866, the National Gold Mining Company purchased the lease and machinery of the Echunga Company. In addition to testing the reefs on Chapmans Hill the company planned to rework the alluvial diggings in the vicinity of Poor Mans Hill on a large scale. A boiler, steam engine and a 10-head stamp battery were housed in a stone building connected by an underground flue to a chimney at the foot of Poor Mans Hill. A large dam (National Dam) was erected across the creek in front of the enginehouse and two adits were driven at the base of the conglomerate into the hill behind. The adits connected with older alluvial shafts of Poor Mans Hill Rush of 1855. A large amount of alluvial material was removed and treated but results were unsatisfactory and the company was liquidated in 1869.

Diamonds

The discovery of the first diamond on the Echunga diggings was made by Robert Foreshaw on New Rush in 1859 at a depth of 2 m near a small gold nugget. Other diamonds were later discovered on Poor Mans Hill Rush and Christmas Rush particularly in the 1890s. By the turn of the century it was estimated that about 50 diamonds had been found mainly in the vicinity of Poor Mans Hill. The most famous of these was Rennals' Vision Diamond found at the foot of Poor Mans hill. Rennals, an experienced prospector, apparently dreamt that he saw an angel pointing to the spot and heard a voice telling him to dig. His mate, to whom he told the story, insisted that he should continue with their usual work or he would throw Rennals into the dam. A struggle took place near the edge of the water and the ground giving way, his mate fell into it thus ending his objections. Rennals persevered with his search and soon after found a diamond then valued at £90. All the other diamonds were discovered through chance by diggers searching for gold.

The Historical Trail (Fig. 5)

1. Typical Alluvial Shafts

The track to National Dam passes many well preserved alluvial shafts of poor Mans Hill Rush. These shafts were sunk to depths of 9 m through the ferruginised Tertiary gravels to the weathered Precambrian bedrock where gold was concentrated along ancient stream channels. When the shafts reached the base of the gravels, tunnels (drives) were put out to each part of the claim and washdirt hauled to the surface to extract the gold. The claims were usually worked by syndicates, the men alternating between shaft-sinking and hauling by windlass. The toe holds cut in the sides of the shaft to assist the diggers climb them can still be seen in many shafts.

2. Enginehouse (Plate 2)

This building was erected by the National Gold Mining Company in about 1866 to treat the alluvial deposits of Poor Mans Hill on a large scale. It housed a steam engine and boiler, which powered a 10-head stamp battery, and was connected by an underground flue to a stone chimney. Parts of the flue and the base of the chimney can still be seen behind the enginehouse. The dam in front of the ruin is known as National Dam, the dam wall being constructed of alluvial material from nearby workings.

3. Tertiary Conglomerate

This exposure of cemented Tertiary gravel (conglomerate) has resulted from the collapse of underground workings.

4. Adit Entrance (Plate 3)

The adit was driven 75 m into Poor Mans Hill along the contact between the cemented Tertiary gravels and the old landsurface, connecting shafts in alluvium of the 1855 rush.

The contact between the Tertiary sediments and the weathered Precambrian shale, now converted to white clay, is very well exposed along the adit (Plate 4). The base of the Tertiary consists of a cobble conglomerate overlain by cemented ferruginous pebble conglomerate. The basal cobble conglomerate, varying between 0.5 and 2 m in thickness, consists of cobbles of quartz and the underlying bedrock, and gravels set in a ferruginous sandy matrix with abundant staurolite. Cross bedding can be observed in overlying thick sand layers (Plate 5). It is thought that it was deposited in a high energy freshwater channel environment, draining into the Meadows Basin in late Tertiary times.

The adit entrance was originally much closer to the enginehouse and was connected to it by tramroad. Gold bearing material at the base of the gravels was excavated from both sides of the adit leaving large horizontal openings known as stopes, with occasional pillars to support the roof.

Above 30 m from the entrance, the adit passes an older alluvial shaft and associated drive. From this point on the adit is considered unsafe.

5. Circular Shaft

Although most shafts are rectangular in shape to allow the swinging of a pick, there are a few circular shafts scattered throughout the diggings. These are thought to have been dug by Chinese, the circular shape apparently preventing corners in which evil spirits could lurk.

Although the Chinese were common on Victorian goldfields there is no recorded evidence of them at Echunga.

JUPITER CREEK DIGGINGS (Fig. 6)

Discovery and general history

The South Australian Government induced many of the men who had left for the Bendigo Goldfields to return in 1852 by introducing a Bullion Act, which offered armed escorts for returning diggers and made this gold legal tender at £3.11 per ounce, a higher price than obtainable in Victoria. One of the armed constables was Thomas Plane who later settled near Echunga as a farmer, serving also as a butcher and blacksmith to the goldfield and using his spare time as a gold prospector. In July 1868, Thomas Plane and Henry Saunders found payable alluvial gold 5 km from Chapmans Gully at Jupiter Creek and received rewards of £300 and £200 respectively from the Government.

Mining and prospecting of the Jupiter Creek Diggings can be subdivided into four main periods:

1) 1868-1871

This period covers the initial rush to these diggings when most of the overall gold production was won in the first year from the alluvium. Mining activity was first reported in August 1868 and within six weeks there were up to 1 200 people on the diggings. A township was established and included several general stores, butchers, refreshment booths, wineshops, a stable and a hotel. Up to 200 tents and crude huts were scattered throughout the diggings. The richest areas were Whites Gully, Fosters Gully, Golden Point and Surface Point and several nuggets of up to 12 oz. were reported. However, the area was a 'poor man's diggings' by comparison to the Victorian Fields, with no fortunes being made.

By the end of 1868 the population had dwindled to several hundred persons and when the alluvium had been largely worked over by mid 1869, reef mining became the great hope for the continued prosperity of the field. Although prospects were discovered and small companies, such as the Beatrice, were formed to exploit them, all had gone into liquidation by 1871 without producing a significant amount of gold. A small number of alluvial prospectors stayed on the field but further company operations ceased until 1884.

2) 1884-1890s

This period includes the history of the Crystal Gold Mine (1884-1895), the discovery of which sparked renewed interest in reef prospecting at Jupiter Creek. The discovery was first leased by Thomas Plane and John Riddle who found a rich patch, but the Crystal Gold Mining Company (1887) and adjoining South Crystal and Phoenix mines never found gold in payable quantities.

3) 1905-1907

The Echunga Hydraulic Gold Sluicing Company made an attempt to instigate a payable large scale operation by treating the alluvium in bulk. However, this was unsuccessful as the alluvial material was much lower in grade than had been expected. The ground was once again left to individual prospectors to eke out a precarious living.

4) 1930s

Widespread unemployment during the depression years and a change in the gold standard leading to a rise in the price of gold caused interest in old diggings and prospectors at Jupiter Creek recovered a small amount of gold.

The total production of the Jupiter Creek Diggings is estimated to be between 25 000 and 30 000 oz. of mainly alluvial gold.

The Initial Rush (1868-1871)

The Alluvial Rush

The first reports of mining activity at Jupiter Creek (see Newspaper readings) were made in late August 1868 when there were about 30 to 40 diggers working the field and obtaining rough nuggety gold of up to 6 dwts (9 g) on the surface and from alluvial diggings between 1 and 5 metres in depth.

Over the next few weeks, the excitement created by news of the gold discovery drew men from virtually every village and town as far south as Port Elliot and Cape Jervis. By September, the population was between 800 and 900 men with numbers fluctuating considerably on a day to day basis because of a constant flow of visitors. Cobb and Co. had already started a daily coach run from Adelaide to transport sightseers to Jupiter Creek and until the end of September there were regularly over 1 000 men on the diggings, with a peak of about 1 200.

Tradespeople began setting up businesses in the middle of the diggings in early September and within a few weeks there were several general stores, butchers, refreshment booths and wineshops (Business Licences cost £2 for 3 months). However, the industry of claimholders soon demanded that further business premises be built 200 m higher on the hill and by early October there existed on this site Lewis's Jupiter Creek hotel, a restaurant and Cobb and Co.'s stable. A nucleus of another small township, including a wine shop and butcher shop and had also sprung up on the adjoining hill to the south. Up to 200 tents and crude huts, scattered throughout the alluvial diggings amongst a succession of earth mounds and dug over ground completed the township of Jupiter Creek. The site of the old township is now the old council dump.

The effects of the gold rush were mostly felt in the country area south and east of Adelaide, though part of the initial excitement of the rush resulted from the placarding by steamship proprietors in Melbourne of posters encouraging a visit to the field. The diggers were mainly small farmers and out of work labourers from the surrounding districts who had nothing pressing to do at home. They prospected the field during the week and returned home each weekend, coming back with provisions from their farms or local general stores. Thus it was difficult to ascertain the amount of gold being recovered from the field as ready money from the sale of gold to shopkeepers at the diggings was not a necessity for local people and holiday diggers, and therefore large sales were not made to banks or well known dealers in Adelaide.

Consequently when the rush was at its peak there was still no accurate monetary evidence to indicate the actual progress of successful mining at Jupiter Creek.

The alluvial gold occurred throughout the thin veneer of reworked Tertiary freshwater gravels which covered the hillsides, but particularly rich areas were within alluvium of the minor gullies on the eastern side of Long Gully. These were Whites Gully, Fosters Gully, Peg Leg Gully and Golden Point. Another rich area at Surface Point yielded gold from a conglomerate outcrop, probably derived by in situ cementation of the reworked Tertiary gravels. Golden Point was the richest and most heavily worked area and some of the hundreds of shallow shafts yielded more than 30 oz. of gold. The largest nugget found at Jupiter Creek came from the Golden Point and weighed 12 oz. Another nugget of 4 oz. was found nearby but most of the nuggets found on the field were in the vicinity of 0.25 oz.

It was estimated, that in the first few months £300 worth of gold per week was purchased on the field by local tradesmen who paid £3.13 per ounce. Out of 1200 diggers on the field in late September, one third were getting no more than colour, one third were making a bare living, whilst most of the remainder were earning wages, and a few were doing somewhat better. The field was clearly a 'poor mans diggings' by comparison to Victorian fields with no fortunes being made, the highest returns being about £10 per man per week (the average wage in 1868 was about 30s per week). A digger could live on the field for 7 to 8s per week, bread costing 4½d/loaf and mutton 2½d/lb. As it was a period of economic depression it was considered that even if men earned only 7s per day it was better than being unemployed, but those who had steady remunerative employment were not encouraged to go.

There was a feeling amongst experienced diggers however, that the ground was not being fairly tried. During the initial rush to Jupiter Creek, diggers carried washdirt in drays, sacks or wheelbarrows from their claims to the creek so that they could concentrate the gold from the alluvium by panning or cradling.

The only preparation that was sometimes required for these methods was the puddling of washdirt in a puddling tub to break down and eliminate clay which might contain fine gold. All these operations used the principle of gravity concentration, and though unsophisticated, could adequately concentrate even fine gold because of its high specific gravity. The greatest proportion of gold recovered at Jupiter Creek was as small nuggets found within several feet of the surface in the gully alluvium. Hence its mode of occurrence allowed it to be recovered with relative ease by the most inexperienced diggers. However, the operation of panning and cradling required much care to recover finer gold particles. Many careless diggers damned the ground as barren after several days fossicking, while leaving fine gold and even nuggets on their claims, mullock heaps and tailings dumps.

By mid-October the initial excitement began decreasing due to the discovery of the Barossa Goldfield (October 1, 1868) and the approach of harvesting. In November, numbers had settled down to a fairly steady working population of 200 to 300 men; insufficient for the numerous businesses that had sprung up. Greater calm and order prevailed on the field and though activity had dropped off the amount of gold being found was maintained. Many diggers found that abandoned ground and washdirt left by former diggers was still in many places payable.

However, it was recognized by the new year that the known ground would soon be worked out and no new ground was being found to add to the succession of alluvial discoveries made in 1868. Diggers began to look to the future of the field and its ability to support its population. The chief factors relevant to the development of the field were considered to be the need to discover new alluvial ground, the lack of sensible government control and the success of reefing.

Mining regulations of the day required diggers to hold a Miner's Licence. This had cost 2s.6d per year in 1868 (raised to 10s in mid 1869) and allowed the miner to dig, search for and remove gold from Crown land within a radius of 5 km around the township of Echunga. It was considered that the area should be extended to encourage prospecting and that the Government should be represented on the field to enforce regulations and settle disputes. The Government despatched a police trooper to the diggings to issue licences and in October 1868 created the office of Warden of the Goldfields as a regulatory authority. There was still general discontent however, and a meeting of diggers held in November 1868 to consider the formation of a Mining Board of experienced diggers to manage the field and make rules for the regulation of mining, led to the formation of a committee to recommend a better code of regulations to the Commissioner of Crown Lands.

When amended gold regulations appeared in December, extending the proclaimed area for mineral prospecting to all Crown land throughout the State, they excited further discontent. The diggers considered that the regulations were unjust and gave encouragement to the capitalist to the detriment of individual miners. The main contention was that the regulations allowed men of capital to take up the area under mineral leases, thus preventing diggers from searching for gold. A meeting of diggers elected a deputation to put their case to the Commissioner of Crown Lands and a further meeting with representatives of the applicants for mineral licences, intended to harmonize the interests of the two parties, was one of the stormiest meetings ever held at Jupiter Creek.

Amended regulations appeared in June 1869 which allowed diggers to search for and remove gold from land held under Mineral Lease, but the uncertainty caused by the December 1868 regulations was still blamed for placing a restriction on prospecting. However, the real drawback to prospecting was the financial situation of the diggers, which compelled them to rework old ground as they had not sufficient means to enable them to thoroughly prospect new ground. Many considered that the local storekeepers who had so greatly profited from the field should promote prospecting and that the Government should finance a group of experienced prospectors to find new ground. An attempt by diggers themselves to stimulate interest in a Prospecting Committee collapsed when diggers failed to contribute funds. However, the known ground was still producing well in parts, the main centre of interest being Golden Point.

There were some new alluvial discoveries in 1869, the field being extended to the north after alluvial gold was found at Deadhorse Gully (when a group of miners decided to bury the decaying corpse of a horse), and to the south at Peg Leg Gully. But diggers were increasingly forced to concentrate on reworking old ground, sometimes forming larger parties to enable them to strip the deep ground on the flats that had never been thoroughly worked due to the influx of water. In addition, competition from other newly discovered fields was drawing diggers away, and by February 1870 the superior attractions of the newly discovered Onkaparinga River Rush left the field with only 30 diggers at work.

Reef Mining

February 1870 also saw the completion of the Beatrice Mining Company's crushing machinery, thus finally making possible a fair trail of the Jupiter Creek gold reef prospects.

Small parties began sinking for reef gold from the beginning of the rush and several promising prospects had been discovered in 1868. Prospectors found that the rough nuggety gold that was concentrated in the gully alluvium, was also disseminated through the thin veneer of fragmentary ironstone and quartz covering the hillside, with patches of increased richness where a shallow trench could produce several ounces. The gold was obviously derived from the disintegration of reef deposits and consequently they sank shafts in search of the reef below the rich patches. The alluvial gold in Peg Leg Gully was actually found via the discovery of a reef prospect known as the Jupiter Gold Reef on the hillside above.

It was apparent that the future of the diggings lay with reefing ventures, for which optimistic hopes were held. But quartz reefing required capital and machinery, and by the time the gold regulations were amended for the second time in June 1869, it was obvious that the Jupiter Creek diggings was no longer a 'poor mans field in which all could share alike in what is certainly a common blessing'.

An article in the Adelaide Observer; 'The Jupiter Creek Reefs' (July 17th, 1869) anticipated the development of a quartz mining industry at the diggings 'soon to be known only as a series of reefing claims'. There was much prospecting activity throughout the whole district, the embryo township 'had advanced into the 'galvanized iron stage' but with only a 'score or so' of alluvial diggers nearby who 'appear to have outlived the jealousy with which they at first regarded their natural successors'.

The reefing ventures were 'on the eve of bona-fide legitimate start' under the new regulations which would secure them certain tenure of leases on the hillside above the entire length of the alluvial diggings. The reefing claims, each centred on a section of an alluvial gully leading down to the main creek, were the Jupiter (1869), Caledonia (1868-71), Beatrice (1869-71), National (1869), Crest of Wave (1869), Edith (1869), Prince of Wales (1869-70), Ophir (1869-70), Fergusson (1869), Inkermann (1869) and Sebastopol (1869). Reef prospecting 'in a very crude stage' with 'no certainty as to anything better than leaders' had in the hands of the more energetic companies met with encouraging results, but as yet they could only be described as 'prospecting experiments' deep sinking being 'likely to precede dividends in almost every case'.

The companies sank shafts ranging from 12 to 25 m in search of reefs where shallow trenches and costeans identified patches of increased richness in the veneer of quartz rubble. The lode material consisted mainly of small veins of gossaneous and ferruginous quartz with bands of kaolinized clay (decomposed feldspathic veins) in quartzite and slate bedrock. Few of the companies struck payable reefs and due to lack of finance most of them were forced into liquidation within a year of their inception. The Beatrice, Caledonian and Ophir Companies were the most prominent.

Beatrice Company

In October 1868, the Beatrice Company set out to methodically exploit both alluvial and reef deposits on their lease at Battery Creek. After nine months work by 4 to 6 men, 4 shafts had been sunk longitudinally along the centre of the claim.

Bakers Shaft was sunk at the northern end of the claim where material from a costeaning pit had assayed at 0.75 oz. to the ton. A reef was struck at 20 m and a drive commenced, but an unexpected influx of water rendered work difficult. Hoping that the reef might be more easily encountered elsewhere, Pound's Shaft (19 m), Wiles Shaft (11 m) and the Wet Shaft (13 m) were consecutively sunk in positions to the south. The Wet Shaft also struck a reef, but in each new shaft they encountered the same difficulty with water.

The Company also installed a 10-head stamp battery, ripple table, 2 puddlers and steam engine and boiler on the banks of the creek, connected by an underground flue to a stone chimney erected on the hillside. The foundation stone was laid in September, 1869, when 20 men were employed, and work was completed by February 1870. Unfortunately, the alluvial mining proved unsuccessful and having overspent on this aspect, the company was left with insufficient capital to develop its reef prospect. Therefore operations were suspended at the end of June 1870 and the company dissolved in the following December.

Caledonian Company

The Caledonian Gold Mining Company had taken out the first gold lease in South Australia at Golden Point and consequently its efforts were widely publicized in the press. They first worked the alluvials but did not commence reefing operations until after the Beatrice. Five shafts were sunk into gold bearing leaders and the first crushing of 1.5 tons of ore yielded 8 oz. of gold. However, being so low on the hillside, all the shafts were soon flooded by groundwater at a shallow depth and unable to finance the purchase of a pump, the company ceased operations in June 1871.

Ophir Company

The Ophir Gold Mining Company was formed in June 1869, consisting of 4 000 shares at £2 each. It took up 12 reefing Company's claims. Adits were driven into the hillside and a shaft sunk. A small quantity of gold was found but work ceased in 1870.

After the liquidation of the Beatrice Company in 1871, there were no further extensive company operations until 1882 when the SA Mining and Prospecting Company took up almost the entire field under claims, annoying local prospectors who had operated a handful of minor claims and leases on the field through the 1870s. The company sank a number of shafts but no payable results were obtained and the claims were cancelled at the end of 1883, leaving the ground once more open to prospectors.

The Crystal Mine Era (1884-1890s)

Crystal Mine

After the early period of reef mining (1869-71) there was little activity on the reefs other than occasional prospecting.

In April 1884, Thomas Plane's son, whilst driving a flock of sheep down a track through the deserted diggings, noticed some gold washed clear of mullock near an old shaft. He collected a few small pieces and ran home and showed his father. Thomas Plane in partnership with John Riddle immediately took out a Lease (No. 129) over the area and commenced sinking several new shafts. At a depth of 20 m in an underlie shaft a decomposed reef was encountered, yielding 2 oz. per ton. They immediately began to remove this material leaving an irregular excavation (stope). About 25 tons were brought to the surface and washed, yielded 428 oz. of gold much of which was in the form of small nuggets and could be handpicked out of the reef. The news of this discovery stimulated renewed interest in the old goldfield and new reef claims were opened up for some distance both north and south of Plane and Riddle's claim.

Further shafts were sunk over the next two years and in 1887 the lease worked by Plane and Riddle was formed into the Crystal Gold Mining Company. The company appointed Steven Lean, an experienced Cornish mining Captain, as manager and work commenced in October 1887 on sinking a new vertical shaft (Crystal Whip Shaft) and driving in the old shaft (Crystal Main Underlie Shaft). By early 1888, 6 miners and 6 windlass men were at work on the main shaft and shortly after a horsewhip was erected over this shaft. The main shaft was sunk to 48 m, drives put out north and south at the 24 m and 46 m levels and wines sunk to connect the two levels. Water level was reached at 33 m and barrels were used to remove the water.

The No. 2 underlie shaft was commenced in June 1888 reaching 17 m by August. A puddler was erected and treating ore by September 1888, using water from the main shaft. Although a number of gold bearing leaders and reefs were found, none were payable and operations ceased at the end of 1888.

At the half yearly meeting of the company in February 1889, it was reported that £2 224 has been spent on operating the mine, leaving a balance of only £50.

In June 1889, the company went into liquidation and the mine lease was sold at auction. The New Crystal Gold Mining Company was formed and Captain Plane appointed as manager and work recommenced on the underlie shaft in 1890. In accordance with Government policy seeking to alleviate the depressed economy of the State by gold discoveries, this company was to receive £500 in subsidies. During the middle of 1890, several hundred ounces of gold were produced and a dividend of 6d per share was paid but operations were again shortlived.

Mining resumed in June 1891, with the sinking of a new shaft (Crystal Engine Shaft) and when water level was reached, a 12 hp steam pumping engine was purchased. The aim of the company was to work below 61 m where it was thought a large reef would be found. However, the engine which consumed 1 ton of wood every 19 hours, continually broke down and little work could be done at depth, although the shaft eventually reached a depth of 61 m. As a result, the main activity during the period 1893-1895 was the sinking of a number of shallow shafts with little production. The company eventually went into liquidation in January 1895. The total production of the mine is thought to be of the order of 1 500 oz.

The property continued to be worked by Captain Plane and other miners in 1895 and 1896 but nothing of any value was found. Further unsuccessful shaft sinking (State Express and New Crystal Syndicate shafts) was carried out between 1931 and 1940 in an attempt to locate the ore shoot found in the Whip Shaft.

South Crystal Mine

The South Crystal Gold Mining Company was formed in April 1888. A considerable amount of costeaning was done on the hillside before the sinking of the first shaft to a depth of 34 m. After completing a second shaft the Company decided to suspend operations pending advice from the Inspector of Mines, Captain Rosewarne, after which it was planned to apply for a Government subsidy for further work. Captain Rosewarne advised them to suspend operations pending the sinking of a deep trial shaft by the Crystal Company. In this view, the situation at Jupiter Creek required a company with sufficient capital to sink to a depth of 150 m in order to fully test the prospect. The Company decided to suspend operations for 6 months but several months later wound up due to lack of finance.

In 1895, the property was reworked and some gold was recovered from a shallow depth amongst the fragmentary quartz covering the hill.

Phoenix Mine

Between 1884 and 1887, Frederick Walters worked a claim and sunk a small vertical and underlie shaft. In 1888, drives from the prospecting shaft struck gold bearing stone and the Phoenix Gold Mining Co. was formed. A main shaft 3.4 m x 1.7 m was sunk to 66 m, which at the time was described as one of the best shafts in the colony. A 61 m drive was put in at the 61 m level and a gold prospect obtained. However, the original capital of the Company having been expended and calls on shareholders being met with no response, the company went into liquidation. At the final meeting in September 1889, it was stated that the company was floated in a very loose manner during the excitement of the mining boom on the strength of specimens of doubtful origin, and that the faith of the shareholders had been abused by an individual whom they had trusted, but who had deceived them. Just prior to this meeting the Inspector of Mines released a report recommending that the property was well worth having £2500 spent on it for systematic working, the mine being on the same reef that the Crystal Gold Mining Co. was then working.

This property was repegged in 1895, 1898, 1915 and 1916-17, but each time only minor prospecting was carried out with poor results. In the 1960s, Tom Burgess sank a shaft to 9 m and put out a drive intersecting gold bearing leads, but he died before any production was recorded.

Gold Dredging (1905-1907)

Unlike the severe economic conditions which accompanied previous gold prospecting activity at Jupiter Creek, 1905 was a relatively buoyant period for the State. The high price of copper created optimism for a general revival in the mineral industry. It was also thought that well directed application of new scientific knowledge and the use of modern machinery by companies with enough capital and under competent management could be successful on ground previously worked out by individuals using primitive techniques.

The passage of a Gold Dredging Act in the previous year and attention directed to the success of gold dredging in Victoria following an inspection by Government Geologist H.Y.L. Brown, led to interest in the possibility of gold dredging and hydraulic sluicing operations in South Australia. One report showed dredging in the Castlemaine district of Victoria had won £300 000 worth of gold in 7 years. Mr Brown released a report on the prospects of such operations at old alluvial diggings throughout the State and consequently 25 gold dredging leases were applied for by early 1906.

At Jupiter Creek a 'considerable number' of prospecting holes were put down to appraise the richness of the alluvium and as a result 300 acres were pegged out and the Echunga Proprietary Hydraulic and Gold Sluicing Company formed. Pegging had taken place by more than one party and the Wardens Court had to be called upon to decide the rights of ownership.

The Echunga Proprietary Hydraulic and Gold Sluicing Company had capital of £15 000 and estimated it had about 2 million cubic yards of highly payable wash with the cost of recovering the gold estimate at 3d to 6d per cubic yard. A plant was envisaged that could handle 20 000 cubic yards per month and as a grain of fine gold was worth 2d handsome profits were anticipated at an average of at least 10 grains per cubic yard.

Mr. John Walsh, who had extensive experience in this class of mining was appointed manager and operations commenced in February 1906. A hydraulic sluicing plant capable of treating 100 cubic yards of wash per hour was ordered from Ballarat and this included a complete electric light plant enabling day and night shifts requiring 30 men. Work proceeded smoothly and quickly under the management of Mr Walsh and all preparations, including the excavating of dams, building of a pontoon, collection of a massive supply of firewood (1500 tons) for the boiler and transportation of the boiler and plant from Ballarat were completed by May 1906, and awaiting a good rainfall to fill the reservoir.

Much interest was shown in the preparations, especially the mammoth task of transporting the large boiler from Aldgate to Jupiter Creek, first towed by 14 horses and finally by 30 bullocks. The first contractor using horses, travelled little more than a mile after leaving the main road and the second effort using oxen attracted many sightseers.

During June the rain fell and operations were well underway in July. The ground worked was part of the Golden Point alluvial rush area of 1869 and a partial clean up from the top end of the sluice boxes on August 14th yielded 32.5 oz. of smelted gold (worth £3.18 per oz.). This was regarded as very satisfactory. Upon completion of sluicing in the first paddock a final clean up of all the ground worked, about 0.5 acre, was carried out on August 29th, making a total of 90 oz. of 6 dwt of smelted gold valued at £360.

The barge was then floated onto a new site where sluicing operations continued until September, when a passage was opened in the dam to allow the pontoon back into the creek bed. However, while this was being accomplished a torrential downpour of rain caused a considerable amount of the dam's embankment to give way and a large body of water rushed down upon the pontoon which listed over on an angle and became partially water logged. When the stormy weather subsided, the flood waters were pumped out and the pontoon put back in working order, the existing reservoir strengthened and a site for a third sluice dam selected and pegged out.

Sluicing continued in November but a disappointing clean up resulted in only 15.5 oz. of gold being recovered. This was a bitter blow for the Company, whose directors had admitted in the first general meeting in September that they had probably started with too little capital. Initial expenses were high and a large labour force was required for the enterprise and thus they were already in a position where they required a steady production of gold. In December 1906 the Phoenix factory at Ballarat which had supplied the plant and boiler went into liquidation and demanded instant payment of the purchase money for the plant, instead of the period of time originally agreed upon. The Company owed £1 000 and had a bank overdraft of £750. A general meeting of directors and shareholders was held a few days before Christmas and a liquidator was appointed to promote a new company.

Following the reorganisation of the company, work recommenced in 1907 but proved unremunerative and the company went into liquidation during 1908. The three dams built in Long Gully remain as evidence of the work done by the Echunga Proprietary Hydraulic Gold Sluicing Company, which produced 222 oz. of gold from 3 acres.

The 1930s

The depression of the 1930s led to a minor revival of interest in prospecting the Jupiter Creek Diggings and in 1931, 25 to 30 men were working on the field and collecting their Unemployment Relief Ration at Echunga. Quite a number of the prospectors built timber and iron shacks rather than live in tents and some brought their wives and families.

Most of the men were working the alluvium, but some were engaged in deep prospecting with efforts once again centred on the Crystal Mine area. Most of this work had ceased by 1940 but a few old timers remained on the field until 1960.

New Crystal Syndicate

In 1931, the New Crystal Syndicate was formed to sink a shaft in an effort to locate the old ore shoot at the Crystal Mine on its northern side. Three men were employed and a 20 acre claim was taken up over the Crystal workings. The vertical shaft was sunk 19 m to just below water level and about 12 m of crosscutting and 23 m of driving was done but not a trace of gold was recovered.

State Express

This syndicate was managed by Michael Brogan who had originally been employed at the Crystal Mine between 1888 and 1895. Between 1933 and 1935, he formed the State Express Gold Mining Syndicate to take up the same property. Several shafts were sunk and the New Crystal Syndicate shaft was extended to 52 m, passing through old workings at 46 m, but nothing of any value was found.

New Phoenix

In 1932 Frederick Gee, employing five men, drove a tunnel 79 m through the hill from Battery Creek to connect with 2 shafts in Fosters Gully. Several leaders were cut through in driving but these contained no gold. When the tunnel connected with the old shaft and drive, a reef formation containing gold was struck but it had been well worked and nothing payable was found. A new drive almost parallel with the old one was commenced but work stopped in 1933.

Excelsior Adit

A quartz reef was first prospected here in 1869 by shallow holes but was not developed. Further shafts were sunk between 1895 and 1900 with varying results. In the 1930s more work was done and small quantities of gold were found in quartz leaders. An adit was commenced to prospect under the hill between the gully and the Crystal Mine, but was soon abandoned due to the hardness of the rock.

Burgess Claim

Tom Burgess began working this claim in 1932. Three shafts up to 15 m deep with drives were sunk but nothing of any value was found. A fourth shaft struck the capping of a reef at 2 m but pannings from this gave no return. Burgess then amalgamated with Herbert Hunt's claim and continued working in partnership until 1933.

The Historical Trail Points of Interest (Fig. 7)

1. Tertiary Conglomerate (Plate 6)

An outcrop of Tertiary conglomerate containing waterworn quartz pebbles in a matrix of sand and cemented by iron oxides. This was originally deposited in a river bed between 5 and 10 million years ago and later cemented by iron oxides. Uplift along old fault lines about 2 million years ago has resulted in the deposits now occurring as a capping on the hilltop.

2. Crystal Mine (1884-1895)

The mine derived its name from the locally abundant quartz crystals (Plate 7). The gold was obtained from two pipe-like quartz ironstone shoots 15 to 18 m apart in weathered shale. One of the reefs yielded 428 oz. of gold from 25 tons in one pocket 20 m from the surface.

- 2a. *Whip Shaft* is 48 m deep with drives north and south at the 24 m and 46 m levels (Fig. 8). It was commenced in 1887 by 6 miners, with 6 windlass men hauling the material to the surface. Barrels were used to remove water when the water table was reached at 33 m. The windlass was eventually replaced by a horsewhip for haulage as the shaft was deepened. The collar of the shaft has collapsed due to the rotting of the timber supports and the layers of soft weathered shale can be seen dipping to the east near the top of the shaft.
- 2b. *Horse haulage run*. This is the remains of the pathway running northwards from the shaft along which the horse walked raising and lowering the bucket (generally known as a kibble) in the shaft. The path has a gentle gradient away from the shaft and its total length approximates the depth of the shaft (about 50 m).
- 2c. *The New Crystal Syndicate Shaft* was sunk in the 1930s in an unsuccessful attempt to locate the ore shoot found in the Whip Shaft.
- 2d. *Shallow underground workings*. Near vertical gold bearing quartz-ironstone veins have been mined leaving a cavity known as a stope. The bedrock consists of shale that has been so extensively weathered that it has been altered to soft clay.
- 2e. *Remains of a Horse Puddler* (Fig. 9, Plate 8). This circular depression is the remains of a horse puddler erected in 1888 to treat ore from the nearby shafts. Ore associated with stiff clay was placed in a water-filled circular wooden trough set into the ground. A horse was harnessed to rotate a rake through the mixture, separating ore from clay which was carried away in suspension as water from the Whip Shaft drained through the puddler. Several of these devices would have been on the field during the initial alluvial rush in 1869.

3. South Crystal Mine (1888)

In 1888, the South Crystal Gold Mining Company dug a long costean, or exploration trench, up the hillside in an attempt to uncover a payable lode on their property. Two shafts were sunk and drives commenced, but nothing payable was found and the Company went into liquidation in 1889.

- 3a. *No. 1 Shaft* is 34 m deep with drives east, west and south at the 29 m level.
- 3b. *Costean* or exploratory trench.
- 3c. *No. 2 Shaft* is 29 m deep with a drive at the 12 m level. The toe holds cut in the sides of the shaft to provide access for the miners can still be seen.

4. Excelsior Adit (Plate 9)

- 4a. This *adit* was commenced in the 1930s to prospect under the hill between the gully and the Crystal Mine reef. Due to the hardness of the quartzite it was soon abandoned without intersecting any gold bearing material.

- 4b. *White Gully* was a rich alluvial area in the initial alluvial rush, and numerous shallow workings can be seen. These are sunk through unconsolidated sediment up to 3 m in depth and derived from the erosion of the surrounding hillsides.

5. Surface Point

This area is part of the 1868 alluvial rush. In the depression of the 1930s about 30 men reworked the alluvial deposits between Surface Point and Golden Point, but relied for sustenance on the Unemployment Relief Ration. A number of the prospectors built timber and iron huts and some brought their wives and families.

- 5a. *Hewlett's Hut* (Plate 10), is the only survivor of a number of similar huts which formed part of a small township centred around the cleared area in the 1930s. Constructed from flattened out bitumen drum and lined with linoleum it was abandoned in 1957.
- 5b. *Alluvial workings*. The bottom of the alluvial material varies from 1 to 5 m and the gold bearing alluvium was worked by short drives put out from the bottom of the shafts.

6. Beatrice Mine (1869-1871)

The Beatrice Company, one of the first companies on the diggings, worked both the alluvial and reef deposits on their lease at Battery Creek. Four shafts were sunk along the length of the lease, the creek was dammed and machinery erected in 1869 to treat the ore.

- 6a. *Dam* erected on Battery Creek to supply water to the boiler and machinery.
- 6b. *Beatrice Engine Shaft* sunk to a depth of 30 m in an attempt to locate a payable reef.
- 6c. *Circular Stone Chimney* (Plate 11): built in 1869 is the most significant relic of the diggings. It was to provide updraught for the boiler and was connected to it by an underground stone flue, parts of which are still visible. The flue and chimney are of typical Cornish construction.
- 6d. *Site of the Engine House*. The machinery, including a Cornish tubular boiler, 20 hp steam engine and 10-head stamp battery, was housed in this building. Fuel for the boiler and timber for the shafts completely denuded the surrounding hillsides. Alluvial material was treated in two 3.7 m diameter puddlers, which were also powered by the steam engine. Gold bearing rock was crushed in the stamp battery and then passed over a series of mercury coated tables and ripples totalling 10.4 m in length, which extracted the liberated gold.

7. New Phoenix Adit (Plate 13)

In 1932, Frederick Gee and party drove a tunnel 79 m into the hill from the banks of Battery Creek close to the old chimney. The tunnel traverses a sequence of sandstone with thin interbedded shale layers and is in excellent condition. No gold bearing leaders were intersected until the tunnel connected with two old shafts on the southern side of Fosters Gully.

- 7a. *Adit entrance*.
- 7b. *Connection of adit with shaft* (Plate 12).

8. Middle Sluice Dam (1906)

Following the passing of the Gold Dredging Act in 1905, the Echunga Proprietary Hydraulic and Gold Sluicing Company was formed in 1905 to treat the alluvial deposits in the vicinity of Golden Point on a larger scale. Three dams were constructed and a barge containing a boiler, engine, pumps and sluicing plant was floated (Plate 14). The plant cost £2 994 and was opened by the Premier in July 1906. Nearly 100 men were employed but the operation proved uneconomic and the company went into liquidation in 1908 after producing only 222 oz. of gold.

SELECTED NEWSPAPER READINGS

Old Echunga Diggings

Observer, 12 February 1887

'It was on August 23, 1852, that my father and Hampton set off to claim the reward, and they took with them about 7 oz. of rough gold. At the Treasury they had to make oath and say that this gold had been found in the province of South Australia. The colony was then ruled by a Legislative Council, part nominated and part elected, Mr. Boyle Travers Finniss being Colonial Secretary.

Hardiman and I were left on the ground. While we were busily at work on the day following the departure of our two mates, we saw a party of from fifty to sixty horsemen galloping towards us through the stringybark. At their head rode Mr. Finniss, my father, Mr. Hampton, and a body of police. As soon as they came to where I was working Mr. Finniss told me to wash out a dish of stuff. He first took the precaution to make me strip of my coat and turn up my shirtsleeves. I gathered up a dish of stuff from a part of the surface that had never before been disturbed, and began to wash it in the valley below. I knew from previous prospects taken out that morning from the same lay that one part was as good as another, although the particular place I filled the dish from had not been touched. A digger can wash right to the bottom of his pan without letting any gold be seen even although the prospect is unusually rich - till it is all brought together by the final twirl of the dish. I knew, there must be gold in the stuff I had got, and I kept it from the eye to the very last. The people who were craning over me on all sides were getting excited as the washdirt got lower in the dish without disclosing colour. Ominous cries arose, such as "This is all a damned sell!" "Lynch him!" "String him up!" The police were all around me, so that I had hardly room to wash, and I felt sure that I would be protected, even if what appeared to me impossible should happen, and no gold should be in this particular dish. When I came to the bottom I gave a swill over, and held the dish up to Mr. Finniss with "There you are" as an introduction to the gold which shone from the bottom of it. Immediately ensued a scene of great confusion. Shoutings, hootings, cooeings split the air, and such a row was made that horses which had been tied to the trees close by broke their bridles and bolted away as from a new Pandemonium. Every one began to wash at once. Kettles, billies, saucepan-lids, pannikins, and even hats were called into requisition, and by all a little gold was found. For hours after the utmost excitement prevailed. After he had seen the first dish Mr. Finniss made me wash several others, and out of one of them I got nearly a quarter of an oz. of gold. He took away with him more than half an ounce, and directly he got to Adelaide proclaimed ours to be a genuine find'.

Adelaide Mining Chronicle, 26 August 1852

'On Tuesday, the Colonial Secretary, accompanied by several other Government officers, and attended by a party of police, went to the spot indicated by the claimants, and conducted a careful and tolerably extensive examination of the soil. Among other operations an ounce of gold was washed out from nine dishes of earth in about an hour. The result of the investigation was so satisfactory, that the Colonial Secretary expressed himself perfectly satisfied that the place would prove to be a profitable Gold Field, and that the discoveries would become entitled to the reward.

Yesterday, a large number of people, chiefly horsemen, proceeded to the scene of action, and many of them were induced by the result of their observation to remain and prosecute a search for gold. From our own reporter we learn that there were about fifty men actually working, scattered over about two miles of ground. They were engaged in washing surface soil with tin dishes, and every man obtained something. Our reporter saw one man get three-quarters of an ounce of gold from four dishes of earth, and many others were said to have been equally successful. Perhaps the most remarkable fact ascertained yesterday was, that a hole being sunk to the depth of nine feet, and the stuff washed for trial all down, gold was found throughout the whole'.

Observer, 4 September 1852

August 28

'The number of tents now erected at the diggings gives it quite the appearance of a place where men had it their interest to congregate and sojourn. The side of the hill where operations first commenced is being rapidly denuded of its surface; while the small stream of drainage in the swampy ground at the bottom of the gully, evidences, in its turbid hue and sluggish movement, that it carries away much of the "dross of the earth" that worshippers "puddling" about, and who, like many others in the effort to attain wealth have to do a great deal of dirty work before they gain the end so universally desired.

The men who have cradles, and even some who wash with tin dishes, are doing well. The Gold runs large, and is found in such quantities as not only to remunerate amply the search for it, but other surfacing equally rich, which will, I have no doubt, be soon found by some of our active and enterprising prospectors, in many parts of the broad expanse of country, which presents the same appearance as that which is now so successfully worked.

During the day Capt. Freeling, Mr. McLaren, and Dr. Marshall visited the Surveying party, and walked over the defined boundaries of the purchased lands. They were accompanied by Mr. Assistant Commissioner Murray, Mr. Bonney having returned to town in the morning. It is now established that the surfacing hill is on Crown Land; but Mr. Harris, of the survey department, informed me that he found Gold on Section 3892, and he is convinced that all the purchased land in the vicinity is auriferous. With this report I send in a rough sketch of the relative positions of the Diggings, the purchased lands adjacent, and the township of Echunga, copied from the Surveyor's tracings.

Towards evening the road was studded with the vehicles of parties proceeding to the Diggings with proper supplies. Many of them state their intention to give the ground a month's trial, thus offering a pleasing contrast to the hap-hazard adventurers who went unprepared to work, and who were driven home by a thunder storm. At night every hill between Crafer's and Warland's was illuminated by the watch-fires of the numerous parties encamped en route, all of whom will reach the Diggings and commence work on Monday'.

August 30

'There is now no lack of cradles on the works, and the capacious tents that stud the hills in every direction, appear to be occupied by men well provided to carry on the work of digging when the weather and the state of the ground will permit them. I made enquiries as to the success of several parties, and received widely different answers. I will give the substance of them, that your readers may draw their deductions. One tin-dish man exhibited a curious piece of Gold about two inches and a half long, but slender as a bodkin, except at one end, where it swelled out into a fantastic but highly ornamental form. This person told me he could easily wash an ounce a day with a tin dish, but he was contradicted by the men who were working near him, who declared he did not procure anything like the quantity he stated; one of them, a respectable young man, a German, showed me about four dwts. of Gold, as the produce of his washing in the same manner from morning up to that hour (half-past 2 o'clock). Some of the men working cradles seemed dissatisfied with their gains, while on the other hand, others were highly elated at their success. Mr. Ladd told me that he and two mates washed a pound and a quarter on Saturday last.

There seems to be a general desire to avoid taking up licences until the real capabilities of the fields are tested by digging; nevertheless sixteen or seventeen parties waited on Mr. Assistant Commissioner Murray this day, and obtained the necessary legal protection on payment of the prescribed fees. The greatest harmony and good feeling exists among the men, all are intent apparently on their work, but no one seems disposed to encroach on or quarrel with his neighbour'.

September 1

'At about mid-day Wednesday the total number of licences issued at the Diggings was 123, exclusive of those issued in town; and in the afternoon it was reported that some men had sunk to a depth of three feet on the top of the hill, and had there procured from one third to half of an ounce each; the consequence was such a rush that as many as 200 claims must have been marked off within a quarter of an hour'.

Observer, 25 September 1852

September 18

'The work has assumed a different form within the last few days; heretofore it was principally surfacing; now a considerable number of holes have been sunk at the base of the surfacing hill, and men may be seen "getting down", "going under", "scraping the bottom", and "nuggetting". Several of those holes appear as if they were abandoned when the clay bottom was arrived at, whilst others are worked under, and into adjoining excavations; thus presenting precisely the same appearances as meet the eye in the far-famed Golden, Long, or Eagle-Hawk Gullies of Bendigo. The abandoned pits prove that there were many blanks here, but some of the holes paid well for sinking, and as the clay is soft and the depth trifling, varying from three to seven feet, the men now at work appear satisfied.

Two Germans, named respectively Rudolph Miller, and Federick Wrinkle, obtained in eight days 1 lb. 4 oz. of Gold, among which were several large nuggets, and one a particularly fine sample, which weighed exactly one ounce. Pockets, as they are termed, are occasionally dropped on, and I was assured on Friday that a single dishful of the earth that enveloped one of those deposits had no less than 5 oz. of Gold in it'.

Adelaide Morning Chronicle, 27 September 1852

Adelaide Gold Circular

'The favourable change mentioned in my last report has been maintained at the Echunga Diggings this week, and many parties are doing well. I have heard of no instances of extraordinary success but the diggers appear to be satisfied that their, present gettings will pay: this has had the effect of a large number of additional licences being taken out. One party is said to have averaged 1½ ounces per man per day, during the time they have been at work; another party washed 8 ounces in one day, and several parcels of from 20 to 30 ounces have been brought to town and sold.

There seems no doubt that a workable gold-field has been found at our own doors, at it would be well that our diggers would calmly consider whether it would not be better to try their fortune at Echunga, from which they might return to visit their families every week, than to be at all the expense and trouble of proceeding to Mount Alexander Bendigo, where the chance of success, owing to the greatly increased number at work will be much less this season than it was before. At present the vessels laid on for Melbourne are filling up with passengers, and the Port presents a scene of the most animated description, every one seeming more eager than another to be off to commence their summer campaign'.

Observer, 2 October 1852

September 30

'The opinions here are still various as to the profitable nature of the Diggings. Some parties are paying expenses and a little over, while others who are less energetic, perhaps, grumble at their lack of remuneration. The best indication of the prevailing sentiment after all is the taking up of licences, the number of which was yesterday, extended to 310; and there are some 30 to 40 persons more who intend taking licences tomorrow, being the first of the month. The opinion is that there are about 400 persons here at present, and that four out of every six are not only paying expenses but earning very good wages.

Messrs. Dunn and Son have two stores, where provisions are sold at very moderate prices, and I also noticed a blacksmith, who appeared to be doing well'.

Observer, 9 October 1852

October 2

'There are now at least 400 persons on the ground, which is not confined to the original gully and hill side, but has been extended by prospectors for a considerable distance in every direction. The number of tents is about a hundred, some of which form a complete little suburban village upon Wattle Flat, half-a-mile from Chapman's hill in the direction of the Onkaparinga, and about a mile from the latter.

The appearance of everything is becoming more permanent. The tents are in many instances of a substantial kind; there are several sod and bark huts; some of the diggers have their teams with them; the claims are carefully marked out and preserved; the holes are deeper, and many are undermined and timbered; and the adventurers are, for the most part, satisfied with what they are doing. One with whom I spoke today said "There is no doubt that this is now established as a Gold-field".

This afternoon, a man washing with a cradle, found several nuggets which would not pass through the hopper. This soon got wind, and there was a sudden rush to the place, causing a little quarrel about the "claims", and some threats of an appeal to the Commissioner; but the proverbial good humour of the diggers prevailed, and they were soon at work again as busily as ever.

It is impossible to form any idea of the entire quantity of gold which has been taken: it must be judged of from individual results, and of these I will cite a few that may be relied upon.

One of the earliest adventurers has a pound and a-half, the result of a month's work, besides a few little nuggets, weighing about an ounce more.

Yesterday afternoon, a nugget was found on the hill side weighing an ounce and a-half. The Commissioner took it into Adelaide with him this morning.

This morning, three boys took four ounces and a half from a hole five feet deep.

A farmer living at Echunga, who is working at a hole with two boys, states, as I understand, that he has made two, three, and even four ounces in a day. I heard, upon good authority, that on one occasion he got an ounce from a single dish'.

Observer, 6 November 1852

November 3

'The largest nugget which has yet been produced from the south Australia Gold-fields was found this week. It weighed in its original state 4 oz. 10 dwts. It is flat, of irregular shape, upwards of two inches in length by one broad, and has one small piece of quartz and a few particles of ironstone attached to it. The fortunate possessor of it is Mr. J. T. Scown, of the Greenhills, who with his son is working in Chapman's Gully, near the elbow.

Mr. Scown and his son realised for their first seven days' labour 7.5 oz. of Gold; but as they have not washed any since, it is impossible to say what is the result of their labours to the found, and from what was seen and taken out in working their claims, they are not likely to regret the time they have spent on these diggings.

The return being now made out by Mr. Chapman, the discoverer of the Gold-field, of the quantity of Gold produced by the successful diggers, with the strength of their parties, and the time consumed in procuring it, will, if made public, show that Chapman's Hill and Gully have yielded a very considerable amount of the precious metal. It is only now and then you can hear of particular instances of success, and in the majority of cases prudential motives - principally the fear of being crowded in their claims - cause the Gold-miners to be chary of giving information of their earnings. One party of three, I was told yesterday, divided 11 ounces a-piece for three weeks' work from surfacing; and another party, for seven weeks' labour, earned 73 ounces. A person named Wilson, working with the assistance of a coloured person, washed out on Saturday least two ounce of Gold, and on Monday procured three ounces, two tubsful alone yielded one ounce and a half. This was from Chapman's Gully'.

November 4

'The notion that Chapman's Gully is worked out is being practically disproved by the number of persons still employed on it, ransacking that part of it which is known to have been most productive, particularly in the vicinity of the claim whence the large nugget of 4.5 oz. was taken. The quantity of Gold also taken from the part of the rise recently opened, known as "Windlass Hill", has induced the diggers generally to turn their attention to it; and yesterday it was observed that the whole of the neighbourhood was marked out in claims. It is said that as much as 4 oz. to the load has been got from this quarter.

Observer, 13 November 1852

November 11

'The slope from that part of Chapman's Hill named Windlass Hill, and which has obtained the designation of Feltus's Flat, is in some instances surpassing the expectations of the diggers. The hill and slope have an eastern aspect, the slope leading off into a narrow gully running parallel to the lower part of the Chapman's Gully, being divided from it by the Quartz Hill. All this ground is marked off in claims, and from 200 to 300 people are sinking upon it as far as the Crown land extends. The lower part of the gully is on the section occupied by Mr. Hardiman. A rich vein has been found on the northern side of the Flat, and all the holes sunk over it are said to be yielding well. The best as yet that I have heard of is one belonging to Messrs. Hampton, Hardiman, jun., and another person, six tubsful from which turned out, on being washed yesterday afternoon, between 5 and 6 ozs. of Gold. One piece about two inches in length and weighing from 12 to 15 dwts. was picked out of the hole'.

Observer, 20 November 1852

November 13

'During the past week few people have arrived at, and only one or two departed from the diggings; - those who I have known to have left have done so from necessity: their hay crops and other farming operations requiring their attention. Most licences issues this week are renewable.

"Windlass Hill" and "Feltus's Gully" have turned out to be most valuable diggings. To particularize instances of success related to me would be difficult, not only from their number, but because the amount of Gold stated to have been raised is so considerable, that it would be indiscreet to include in an official report statements which have nothing but bare assertion to substantiate their truth.

Pounds weight of Gold are spoken of now as commonly as ounces were formerly. I have seen that which is evidence of the truth of some accounts of large gains, and the great activity and energy with which the work is prosecuted, is some guarantee for the truth of the rest of the reports.

Chapman's Gully is almost deserted; that it is not entirely so proves that Gold even now is to be procured there in large and repaying quantities.

Windlass Hill has surpassed all other places here that I have heard of in productiveness. Mr. Brooks and another person, both from Yankalilla, procured from a hole near the top of the hill, in the fortnight ended on Thursday week, 9 lbs. weight of Gold, the washing-stuff having produced at the rate of 8 oz. to the load. I got this information from Messrs. George Harvey and George Willie who had the hole given to them in payment for carting three loads of washing stuff. These two men and a boy immediately went to work at the old hole, and out of about a load and three-quarters of washing-stuff they got what I took to be from weight and bulk, at least 2 lbs. weight of Gold; and they are still working the claim with profit'.

Observer, 4 December 1852

December 2

'Scarcely anything of interest sufficient has occurred this week worthy of record. The old hands still continue to work, apparently well satisfied with their earnings, and show no disposition to forsake the Gold-field. Not so, however, with many of the newcomers, not a few of whom, instead of going to work manfully at once, spend their time in going about the diggings, making enquiries of those who are better employed, and, as might naturally be expected, receive very little encouragement from what they hear. If a man happens to be doing well, he is not likely to say so to every stranger who asks him, as the probability would be that he would be surrounded by fresh aspirants for Fortune's favours, and so lose the chance of securing what the Gold miners call "a good run of ground". The would-be digger, on the other hand, will always meet sufficient to discourage him from those who really have done nothing, or happen at the time to be "out of the run" of precious metal. People are arriving and departing daily by fifties; those who are returning not forgetting to give the aspiring diggers a fearful picture of their two or three days' experience of the value of our Gold-field.

To all appearance in a few days there will scarcely be on Windlass Hill space for a claim but will be taken up. There seems to be a series of veins nearly parallel to each other, from 20 to 30 feet apart, running from the crown of the hill to the lower ground, and those who happen to hit upon the centre of a vein generally do very well; the intermediate space are generally worthless. These veins are being now discovered and worked, the yield being from an ounce to four or more ounces to the cart-load. In one of them three brothers picks up in the course of working their claim, five ounces of Gold, and the washing-stuff yielded, I am told, at the rate of from three to six ounces to the load. Others did nearly as well on other parts of the same run last week.

The present population of the diggings might be estimated as 700. The number of tents, including those on the Onkaparinga, amount to 244.

The present Police regulations here are those whereby all licensed and unlicensed men on the ground can be easily ascertained, and as every thing connected with order on the Diggings is more immediately under surveillance, I find that so long as regulations are essentially respected similar strictness is unnecessary".

Observer, 11 December 1852

December 8

'Where are all the diggers going to? The place is almost deserted, is the observation a person is sure to make on viewing the Windlass Hill and its vicinity, who saw the place a few days ago, when it presented a busy scene of activity. The number of tents on the creek and near the diggings does not appear to be diminished, and no new discovery has been made which would draw off the men to another place. Still, not a tithe of the people are at work in the old places who were visible in the early part of last week. The partial desert may be accounted for partly from the fact that all the holiday diggers, who were induced to come up on learning of the successful efforts of some of the working Gold-miners, having gone away until they shall hear of some new discovery, when they will of course pay us another visit, with the hope of sharing in the good luck. The present slackness of Gold-finding, combined with the tempting offers of the farmers, has induced a number of men to leave the diggings for a while to share in reaping the abundant harvest with which Providence has blessed us; and the small farmers have also generally left the Gold-field to gather in their crops. The influenza has in some instances either confined some men to their tents, or its unwelcome presence in their families compelled their attendance at home. In the meantime the tents of the harvesters and the epidemic-stricken diggers remain on the ground, showing an intention to resume their occupation here as soon as the causes of absence shall be removed.

Some parties are out prospecting, and a considerable number of men have been this week endeavouring to find a paying quantity of Gold in Tea-Tree Gully, the head of which is in a line with Chapman's Gully, and divided from it by a low hill or ridge, over which the road passes to the village of Echunga. The Tea-Tree Gully (called already by the miners "Long Gully", after the valley of that name of Bendigo) is several miles long, and a number of smaller gullies lead into it, in two of which, on the northern side, Gold was found three months ago'.

Observer, 29 January 1853

January 22

'On a hill to the west of Chapman's Hill, and adjoining the Echunga-road, Gold has at last been discovered in what is considered a remunerative quantity. Already there are about 70 claims, about 15 of which have been sunk to the rock, and all engaged in them are saving their stuff for washing. None of them have yet tried it, I am told; but from what they have proved by washing in the dish they expect the stuff will yield from an ounce to an ounce and a-half to the cart-load, which, after what they have been doing lately, is considered first-rate, and has put them all in good spirits. The news of this discovery has attracted the diggers from most of the other places, and being concentrated on one spot, we have resumed our former busy appearance, and I am in hopes we shall now progress a little; for we have been going back long enough; and if this discovery had been a week later, I think there would have been but few to work it. A great number had left during the week, and many more intended leaving, but they have not delayed their departure until this is proved. There are not more than 150 men on the diggings and if this is a failure the majority of them will leave'.

Observer, 12 February 1853

February 5

'Although we still have everything to indicate Gold in large quantities, none have yet succeeded in realizing their hopes. We have not more than fifty to sixty men left, and though some of them are most energetic and persevering in their efforts, I am fearful they will be further disappointed. I know some parties who for the last two months have been sinking in every likely spot within five or six miles, but have never yet found a place that would pay. If there were a few more such men they might be likely to succeed; but the majority content themselves for the knowing that if a fresh place is discovered, they will stand as good a chance as those that have spent months of labour in trying to find better ground'.

Observer, 9 July 1853

July 5

'A few days have made quite a change in the affairs of things here. Bell's Hill rush, which this day week was a scene of busy life and industry, is now almost abandoned, and the majority of the diggers are scattered about in various directions, once more to bestow their labour and to try their fortunes.

This locality required deep sinking generally, but not in every case. Those who had the good fortune to obtain gold at between six and seven feet deep were better rewarded for their labour than those who had to sink 12 feet; and those whose holes had to be sunk from 20 to 25 feet, obtained scarcely any gold whatever, and this deep sinking was almost always through hard clay, ironstone and flinty quartz.

The first appearance of this rush was decidedly favourable, and I was quite correct in deferring till now my opinion as to how it was anticipated it might turn out. It is now, I may say, abandoned, having been found to be not worth working. Some few men are still there washing out their stuff; when that is finished, all will leave. I deeply regret to say that there is a general aspect of depression here now; the diggers are getting, upon an average, not enough gold to purchase the common necessities of life, very different indeed as compared with what it was some eight or ten months ago, as alluded to in my last report; and it has been intimated to me by more than one of the old hands that, admitting some few (and very few indeed that number must be) be even now doing well, were all the earnings for the last week for fortnight to be equally divided, there would not be 10s per week for each man'.

Observer, 25 November 1854

'Some parties have recently, at the head of the Long Gully, come upon some deposits of the precious metal of more than ordinary richness. Accounts speak of the newly bottom holes as yielding from half an ounce to one pound to the bucket; and, without pretending to know which account is true, there is unmistakeable evidence of something doing. All are in good spirits; and many of the old diggers who had left the diggings and taken to other employment in the surrounding neighbourhood have returned. Whether this new discovery will connect itself with any "leading ground", and be permanent, or prove merely a "patch", as many former discoveries of the kind have done, we must wait to see. You may rely upon the truth of this. A reduction of the licence fee to 10s. at the present time would be a great boon'.

Observer, 23 December 1854

December 20

'The reduction of the licence-fee to 10s. per month has fully realised my expectations with regard to our population. About 320 licences have been issued this month, and the population, including women and children, cannot be much less than 500. We have two butchers and some half a dozen stores already on the diggings, and the whole scene is one of life and bustle, contrasting strangely with the almost inanimate state of the place a few weeks ago. Very conflicting accounts are, however, in circulation respecting the character of the present workings. Many seem to have visited the place with the most extravagant hopes of success, and because they cannot turn nuggets with their toes as they walk about, without either the trouble or labour of a search are very loud in their condemnation of the diggings. On the other hand, it is satisfactory to know that very many are satisfied with their success, and that others not as yet so fortunate, knowing as they do that many are doing well around them, persevere with the hope of ere long being themselves successful. That rich deposits of the precious metal exist in the neighbourhood no one at all acquainted with the ground is disposed to doubt; and very sanguine expectations are entertained that they will soon be found. Since my last communication the following instances of success are well authenticated - From one dish of stuff 6½ ozs. of gold was obtained, and 13 ozs. from five buckets-full; 3 lbs. was also taken from one hole. The hole was bottomed late in the day; the party worked all night, and by breakfast time next morning they had obtained the above-named quantity. Of large nuggets I am not aware that any have been found above the weight of 4 or 5 pennyweights. It deserves notice, however, that the higher the diggers get up the hill the heavier the gold becomes. At first it was very fine, now it is quite nuggety. But few are prospecting, and those few I believe as yet with little success. The principal operations are confined to the same locality. The holes continue about the same average depth, and the character of the ground remains the same. Among the casualties may be named one from the effects of foul air. On Saturday a man was brought up from a hole almost dead; he recovered, I am glad to say, but from this cause it is folly to suffer any inconvenience, as a little calico or canvas would so early obviate the difficulty'.

Observer, 27 January 1855

January 19

'Nothing particular has occurred during the past week. I have heard of no remarkable instances of success, nor any particular complaints of the want of it. We have still the same routine - many doing well, others complaining, some leaving the diggings, and others arriving to supply their places. For the present month about 190 licences have been issued, and a few more are expected to be taken. Some of the old claims are worked out, or nearly so, and others are becoming unsafe and must be abandoned, so that new ground must soon be broken by many.

Cases of dysentery are common on the diggings, and one death has occurred, a child of Mr. Watt's, aged 3 years and 6 months.

A party of police, consisting of two men, have arrived from Adelaide, and Mr. Buttrose has also left the station of Echunga to take charge of the one of the diggings. Our sly-grog sellers and other evil-doers, therefore, had better look out. I mentioned in a former communication that it was in contemplation to open an evening school on the diggings. The Central Board of Education have, however, refused any additional aid for this purpose, and the matter now rests in a great measure with the diggers themselves'.

January 24

'During the last two months the principal operations have been confined to the head of the "Long Gully", on and in the vicinity of "Poor Man's Hill". This has been the scene of the great success that has of late attended the efforts of many. A number of the old claims are however worked out, and the diggers are dispersing themselves through the surrounding neighbourhood. "Wattle Flat" and "German Gully" and its vicinity are again the scene of active operations, but of so recent a date that I cannot as yet report any result. At both places gold was found in the early days of the diggings, and in the opinion of many gold in paying quantities will be found there'.

JUPITER CREEK DIGGINGS

Observer, 22 August 1868

'The diggings, which are about five miles from here and three from Echunga, are situated near the Echunga Creek, some distance above its junction with Jupiter Creek, and consist of surfacing and shallow sinkings ranging from two to 15 feet, though some of the holes are considerably deeper; and in one place a party has commenced reefing. While there I saw the parties on whose veracity I could depend, and asked them their opinions, and the reply was in both instances very convincing, for they gave us ocular demonstration that the precious metal was to be found there, and that not in insignificant pieces. It is good rough nuggety gold, with very little dust. It has all the appearance of having been forced into all sorts of rough crevices, and in some instances is found embedded in a kind of rotten ironstone. Between 30 and 40 are at work, and there is room for plenty more. It would not be advisable for persons in regular work to abandon it for these diggings, but they offer for willing hands, to say the least, a good prospect of fair remuneration for their labour - a thing not to be despised in such times as the present'.

Observer, 5 September 1868

'Two of the party are about to put up substantial huts and bring their families here. They showed me some good rough gold, and further permitted me to wash two dishes of their washing stuff; from which I obtained, I should judge, about one and half grains. They have a lot more wash-dirt ready for the cradle. The opinion of one of the party - an old Ballarat hand - is that there is a good payable gold-field. Some are doing very well, many are making good wages, and some are only getting what they call 'tucker gold' - that is paying their living expenses - and others again are not even getting the 'colour'. Some are pleased, some sanguine, and some disgusted; but this of course, is always the case on the diggings, as many go there who never knew what it was to do a day's work, and because they do not break their necks over a nugget they bring back an evil report. There are now about from 150 to 200 there. Two stores are opened and a butcher's shop, and I understand the storekeepers at Meadows intend taking goods over. I counted 43 tents and huts, which extend I should say about three miles right from the rush that took place about two years ago just below the old Echunga diggings, and extend to the old diggings near Jupiter Creek. I was informed by one person, who said he had himself seen it, that one nugget was picked up the other day weighing over an ounce. It is very wet just now, and the diggers are thus prevented from working in the flats, which some think will turn out the best'.

Observer, 12 September 1868

'A gentleman who has just visited the goldfield estimates those in the neighbourhood at over a thousand and states that persons in all kinds of vehicles were arriving hourly. Any one going about among the diggers can hear of gold being in their possession and can see it found in the washing up, but so large a body of men, it is thought, should have a good pile to show. The field is within a very short distance of the homes of the great majority of those engaged in working it'.

Meadows, September 9

'I was greatly surprised by the number of tents that have been pitched since my last visit-numbering altogether, I should think about 200 with a population of at least from 800 to 900. This township is getting quite deserted. Several carts have passed through the town this week with all the necessary paraphernalia of a digger, and numbers of pedestrians with swags, picks, shovels, tin dishes etc, may be daily seen wending their way to the diggings. Drays are passing all hours of the night. There are several blacksmiths on the ground, stores, etc., so that you can obtain almost anything you want'.

Clarendon, September 9

'The Jupiter Creek Diggings continue to be the centre of attraction and numbers are to be seen daily passing through here on their way thither'.

McLaren Vale, September 9

'Almost every man in the Vale has been to Jupiter Creek. Numbers of our farmers, tradesmen and labourers are on the diggings. Some have returned disgusted. as this is a poor man's diggings, the very best regulations ought to be adopted, that all may share alike in what is certainly a common blessing'.

Port Elliot, September 9

'During the past week a great number of persons have left this neighbourhood for the Jupiter Creek diggings. Since yesterday upwards of 60 have gone, and others are preparing to follow'.

Yankalilla, September 9

'The gold fever has spread to this district. Many have already left for the new diggings, and others are preparing to follow'.

Observer, 12 September 1868

'From O'Halloran Hill to Cape Jervis every hamlet, village and town is furnishing its quota of adventurers, who, in quest of the precious metal are wending their way to the Jupiter Creek Diggings. The inhabitants en route are, in these dull times, busy counting the number of laden drays, spring-carts and other traps, with horsemen and foot travellers who pour across the Tiers so as to reach the point of attraction. The country round the Jupiter Creek Diggings is for the most identical with the well known features of the long established but now almost deserted Echunga Diggings proper. The sinking is shallow - two or three to 10 or 12 feet, fewer reaching 20, even on the sides of the gullies, which are scrubby and timbered with stringy bark. The holes are sunk in a matrix of quartz gravel and clay. The gold found is nuggety and rough, has the appearance of having been forced through crevices, some, but not much is shotty and others waterworn. As to average earnings, we met with men averaging £10 to £12 per man each of a party of four. This party is, however, an exception and in all probability no others equal this average. Several sets will, however, reach £4 to £6 weekly, and a large number £2 to £4. Some have not yet even got the colour, but this must of necessity be expected for a variety of obvious reasons. We would repeat previous intimation, that none should leave steady remunerative employment for the chances of success here'.

Observer, 12 September 1868

'The new diggings have begun to excite considerable interest in Adelaide, and many parties have been formed within the past day or two to visit them. Police-trooper Tyrrel having been the means of furnishing copies of the regulations and any other information required by intending diggers. We subjoin a copy of the gold regulations now in force.

Observer, 19 September 1868

'Captain Tyrrel, Trooper Cochrane and a large number of others witnessed the finding of the largest nugget yet reported here -over 4 ozs. There is no disguising the fact, however, that whilst many are getting good wages a number do not get either "tucker gold", or even the "colour". Over 400 licences have been issued on the ground in addition to those previously obtained in Adelaide.

The Postmaster-General visited the goldfield to endeavour to provide postal facilities. The exodus from some places has had, according to our advices, a depressing effect upon local institutions'.

Meadows, September 16

'The Jupiter Creek Diggings are still the principle topic of conversation and source of attraction. I have just returned from my usual weekly visit to them and must say that on the whole the reports are not quite so encouraging as heretofore. I should say there is out of from ten to twelve hundred now on the diggings, I say one-third not getting more than the colour, one-third making a bare living, whilst the remainder are earning wages and a few of them doing something more. There are several stores and butchers, also refreshment-booths and a retail wine store, the evil results of which were but too palpable on my visit today. Several substantial buildings are being erected of slabs and iron along what I presume will eventually be the main street of Jupiter. Town arrivals and departures are almost incessant. In one place they may be seen erecting their wurleys, with eager anticipation depicted on their features, while others may be seen the very features of woe and disgust, tearing down or packing up'.

Observer, 26 September 1868

'A DAYS TRIP TO THE DIGGINGS. Last Friday, wishing for a day's relaxation, I determined on taking a trip to the gold-fields at Jupiter Creek. Leaving home at an early hour, I reached Adelaide in time to get a seat in one of Cobb's omnibuses, three of which each containing a full complement of passengers, and drawn by four horses, started at intervals of a few minutes for the new El Dorado. The morning being fine, I found that most of my fellow-travellers were like myself "on pleasure bent".

Having a splendid team, good whip, and very easy conveyance, our ride along the picturesque road beyond Glen Osmond was most enjoyable. On reaching the spot known by the classical name of the Devil's Elbow, we were politely requested by our jehu to do him the favour of walking up the hill; so bearing in mind that "a merciful man is merciful to his beast", we climbed the deep ascent at some little personal discomfort. After this we pursued our way at a good speed, stopping once to change horses, and once to refresh the inner man at the Aldgate Pump. The three omnibusses above referred to arriving and discharging their passengers almost simultaneously gave the place quite a busy appearance and it looked as though Host Hawkins was driving a very brisk trade. A few miles further on we left smooth macadamized Strathalbyn-road and turned aside into a bush-path, after due admonition on the part of our driver to "hold-on", a caution the need for which was afterwards sufficiently apparent. A mazy labyrinth of about two miles with park-like scenery and between trees which none but a practised hand could have driven through scathless, brought us to the old Echunga Diggings, where out of respect to our horses, we again alighted, and had thus a better opportunity of looking about us. Deep yawning chasms, like open graves, and deserted huts, met our eyes in every direction, the former giving to pedestrians dangerous proofs of the industry of a former generation of South Australian diggers, and the whole scene being anything but inspiring. On resuming our seats we soon arrived at our destination - a long array of tents and various other nondescript erections first meeting our eye. Flags of many shapes and colours floated in the breeze, indicating the existence of stores of all kinds, there being enough of these already to supply the wants of ten times the present population. "The Diggings" themselves have been so often described that I am afraid I shall not be able to say much for the information of your readers. The ground immediately in front of where our carriages came to anchor gradually slopes down towards the creek, and as the majority of the diggers seemed to be concentrated in that locality, I directed my steps thither. At first sight it seemed to me astonishing that so large a number of persons should have been gathered together in so short a time, all intent on the one object - getting gold. If any readers imagine that to obtain the precious metal at Jupiter Creek is an easy task, allow me to inform them that they are altogether mistaken. Holes dug through very hard ground, varying in depth from 10 to 20 feet, plainly show the labour which has been already expended, and I am sorry to say that as far as I could learn those who had worked the hardest had not always been the most fortunate, or, in other words, the greatest part of the gold had been found very near the surface. Lest I should be thought to contradict myself, allow me to add that digging forms but one item of the work, the subsequent washing requiring great care and watchfulness.

It was rather amusing to see great brawny men so assiduously rocking their cradles, by this means separating the larger stones from the gold and sand, which fall into a tin receptacle beneath. On removing the latter, however, the unfortunate rocker too often finds plenty of sand, but very little gold. I saw a great many dishes washed in various places, and in almost every instance that came under my notice gold was found at the bottom of the tin-sometimes a little nugget weighing perhaps half a pennyweight or more, but very frequently a few small particles, only mere specks, and these adhering so firmly to the tin that they were not worth removing. I did not see any large nuggets washed out, and I am afraid they are very few and far between; but I still hope for better times and that the toil and perseverance of my fellow-colonists will not be unrewarded. I conversed with a few diggers, who expressed themselves as perfectly satisfied, but most of those I saw spoke otherwise and yet they were, some of them, possibly only exercising an Englishman's privilege, i.e., to grumble. I did not see any of the intemperance casually referred to by a correspondent to the Register recently. Those who were not working themselves all seemed intent on watching the operations of the rest. With the exception of a wine-store, no means of getting intoxicated are yet apparent, and I sincerely hope our Magistrates will be very cautious how far they extend the opportunities of getting strong drink among such a community." Sept. 19, 1868.

"On Wednesday the gold fever was materially increased by the report that a 7 oz. nugget had been discovered but from enquiries which we have made we are led to believe that the report is without foundation. The exodus to the Jupiter diggings from the Southern townships still continues unabated, notwithstanding the unfavourable reports of scores who have returned disappointed.

Places of business and refreshment are being proceeded with the latest being another store near the entrance to Long Gully; and Mr. Barron, late of King William Street, proposes adding to the conveniences of the "township" of Jupiter, a restaurant. A well known Adelaide licensed victualler proposes to vend refreshments in his booth, and, we hear, intends adding sleeping accommodation'.

Meadows, September 23

'I have just returned from my regular weekly visit to the Jupiter, and the reports are even more discouraging than my last. ... the majority say they are not getting much more than a living. However some admitted that they were earning from £1 to 30s. per week per man, while they can live there for about 7s. or 8s. per week. Bread is only 4½ d. per loaf and mutton 2½ d. per lb. with other necessities proportionately cheap. I think there are about 1200 or perhaps more on the ground and I counted over 100 huts, tents, wurleys, and nondescripts'.

Observer, 3 October 1868

'The field appears to be overdone with men of business, and those there are complaining of excessive dullness. New arrivals continue, amongst whom on Saturday were an old couple with their household furniture and three months' stock of provisions. Other families are settling down and carrying out their family arrangements as they would in town.

The English, Scottish and Australian Chartered Bank bought on Wednesday, September 30, the largest parcel which any one person has yet brought to Adelaide for sale at one time. On that day Mrs. Peddar sold 27 ozs. of rough nuggety gold, purchased at her store, it is said, since Friday'.

Meadows, September 30

'The diggings are still the principal topic of conversation, although in a much more subdued form than hitherto. I paid them another visit today and from what I could ascertain there are not so many there as on my last visit'.

Observer, 10 October 1868

Saturday, October 3

'The Long Gully Gold Diggings have changed considerably in appearance during the past two or three weeks. Looking north-westward from the township hill nothing is to be seen but a succession of earth mounds. Speaking roughly there were on the ground some 600 to 700 men. There were a few who admitted that they had been making good wages, and there were others who had come by no means so badly off as they would fain have made one believe. The great majority have no doubt had to rest content with a lamentably small recompense for their trouble and toil.

Half a dozen tradespeople have set up business - some as general storekeepers, some as butchers, some as wineshop proprietors. The industry of claim-holders has rather threatened the stability of some of the shops, but the Commissioner of Crown Lands has interposed for their protection, and these early squatters are to be protected in their holdings. A couple of hundred yards higher up the hill is the legitimate site of the village, and here is an hotel (provisional and temporary), a restaurant, and a livery and bait establishment consisting chiefly of a semi-circular breakwind of boughs. On the adjoining hill northward there is the nucleus of another small township, including a wineshop a butcher's shop and other places of business. Provisions are sold almost at Adelaide rates, and 10s. a week would be ample to support an able-bodied digger, who is not too fond of colonial wine.

There is considerable complaint on account of the reduction in the price of gold, and those who have been careful to send in theirs in a proper marketable state are rather indignant that they should have to submit to it through the neglect of others'.

Meadows, October 8

'The gold and the population are becoming less. Many are preparing to leave "Jupiter" for Barossa. Most are getting a little gold but not sufficient to pay'.

Observer, 17 October 1868

'Some must be getting gold, as the storekeepers have made heavy purchases amounting to several pounds weight. The locality where this lump (a 12 oz. nugget), which is rough, oval and somewhat irony-looking in places, was discovered, is called Golden Point, and is not far from where the 4 oz. and other smaller pieces were found'.

Observer, 24 October 1868

'At present the diggings are very quiet, and there are comparatively few men working here, a great many having gone to Barossa or home for harvest. The average of those remaining are doing fairly and some are doing well'.

Observer, 14 November 1868

Jupiter Creek, November 7

'During the week Mr. Barker bought 35 ozs.; some of the other store-keepers are also gold buyers; but besides their purchases good deal of gold is taken off the diggings and sold elsewhere, or kept as a curiosity.

On the diggings themselves there are now at work, say from 200 to 300 men (this is a rough guess, and is open to question). The place now known as Golden Point is that in which the chief interest centres. Here whips may be seen bobbing up and down, regularly and irregularly. Here the new-comer must be very wary, or he may find himself awkwardly situated with regard to some abandoned hole, full to the top with stiff yellow clay. If he is at all nervous he will walk with fear and trembling over ground which, if the truth were known, has been undermined, and is liable at any moment to yield to a gentle pressure and collapse. If he contrives to steer his way safely through all the treacherous snares with which his path is beset, he will reach the creek, or what was the creek, where a very busy scene presents itself. The flats have been excavated in all this spot in order to test their stuff. By some it is carried down in drays, by some in wheelbarrows, and some adopt the more primitive plan of bringing it down in sackfuls on their own sturdy backs. Here cradles, longtoms, tubs, and tin-dishes of all sizes are assiduously kept employed, and here an idea of making something, and others, as before, live in hopes of advancing beyond the "tucker" level, which, on the whole, is a very unsatisfying stage to reach. The earth in many parts is very soft and loose, and this greatly interferes with driving and necessitates the substitution of "paddocking" - a comprehensive term, implying the removal of the whole of the surface earth, in order to expose the auriferous layers within the limits of the holding'.

Observer, 9 January 1869

'Jupiter is again assuming a busy appearance, most of the diggers who left for the holdings having returned. Since the diggings opened here Mr. Wilson has purchased over £2000 worth, the whole of which has passed into the hands of merchants in Adelaide, not to mention the quantity bought by other gold buyers and that taken off the diggings by the diggers themselves'.

Observer, 13 February 1869

Jupiter, February 9

'The goldfield here is looking very quiet, most of the old ground being worked out. At Barker's Store during the last fortnight £140 worth of gold has been bought'.

Observer, 17 July 1869

'The diggings, it is well known are situated in a long narrow gully, with well defined hills on either side. Approached by the usual road from Adelaide via Warlands, they now present a long strip of honeycombed ground, lying almost north and south. The embryo township, which by the way has advanced into a galvanized iron stage, stands on the crown of the eastern hill, and from it the original diggers' claims slope down towards the creek.

Looking across from Lewis's Hotel your line of vision would almost equally divide the principal gold-field, soon to be known only as a series of reefing claims. The northern limit is about half a mile up the gully, terminating on what is now the claim of the Caledonian Company. This starts from the highest ground on which gold has been found in any quantity, and runs thence to the richest part of the gully, though not through it, as its friends on 'Change sometimes rather freely assert. Properly speaking there is no southern limit, for the diggers are still moving down the gully. On Saturday we were informed that a large party had located themselves about a mile or more to the northward, but still retaining their claims at the original diggings. During the past week there has been a rush back to the old ground, induced by the discovery of certain nuggets and cement. With the exception of such occasional spurts the old diggings are, however, practically worked out. A score or so of cradles, and as many men, may still be seen together near the workshop, but it is not the alluvial gold alone that detains them. The men are interested in reefing claims, which they mean to shepherd Micawber-wise until something turns up. The transformation from alluvial to quartz workings is proceeding surely though slowly. The diggers appear to have outlived the jealousy with which they at first regarded their natural successors, and it will be the fault of the reefers themselves if in a short time they have not full possession of the field'.

Observer, 18 September 1869

Jupiter Creek, September 15

'Affairs are extremely dull. The place has been getting worse for some time, and hardly anything has occurred lately worth recording. The low ground is all flooded, so that it cannot be worked without great labour, and the hills are not yielding gold to pay.

But one thing that tends to keep the place back, as it will on all gold-fields, is the restrictive regulations, for the Government seem to place whatever obstacles they can in the way of diggers. The license-fee is raised from 2s 6d (last year) to 10s at present'.

Observer, 26 March 1870

Discover of Jupiter Creek Gold-Field

'On Saturday morning the Hon. the Commissioner of Crown Lands, after considering a number of documents submitted to him on behalf of Mr. C. White and Messrs. Plane and Saunders, rival claimants for the reward, and hearing the statements of witnesses, decided in favour of the latter. The ground upon which the decision was based was that these diggers had shown gold at the Crown Lands Office in July'.

Observer, 14 July 1870

'With regard to the diggings generally, everything looks very dull; the puddlers say they are not making their expenses, and in one case at least the men have gone to digging, which of course proves that they could not live by puddling.

A memorial to both Houses of Parliament against Sunday trading in drink and against night permits has been signed by nearly 70 persons here. There has been a good deal of drinking and carousing during the week, so that it seems some are getting gold'.

Register, 14 July 1906

Sluicing for Gold

Ploughing by Hydraulic Force

R-o-o-s-h; s-spl-ash; thud. The man who is directing the course of the hydraulic hose deflects the nozzle for a moment and attacks the base of the miniature cliff which the stream of water is washing away. A shower of mud in solution is sent feet into the air, and as it descends like a waterspout it almost hides the operator, who is not many yards from the bank, and the next that is seen of him is as he emerges from the involuntary shower covered from top to toe with liquid sludge. Meanwhile the stream of water, which is pouring from the hose at the rate of 80 lb. to the square inch, is making short work of the bank. Its first impact wears a hole into which a man's arm could be easily thrust. As one watches this hole is converted into an excavation which becomes larger every second. Still the relentless flow is kept at the one spot, and while earth and stones come away with the water, the surface roots of vegetation are laid bare, and ever and again a landslip on a small scale occurs. This is the modern method of alluvial goldmining. Instead of sinking potholes and hauling the dirt to the surface to be cradled the powerful hydraulic pump literally

ploughs up the earth, and forces whole acres of ground into solution. The water containing the wash flows by gravitation to a spot where it is elevated to a race, on which are riffle tables, upon which the gold is precipitated. The water and sludge run off at the further end, and ultimately restore the land to its former level. When it is examined the process is simplicity itself, and yet it is easy to understand that by it alluvial fields, which under the old methods of working were abandoned as unpayable, will yet return dividends'.

Other detailed descriptions of the Jupiter Creek Diggings:

Observer,	Oct. 10, 1868	Detailed description of diggings
	Oct. 17, 1868	Detailed description of diggings
	Nov. 7, 1868	Life on the diggings
	Dec. 5, 1868	Description of diggings
	Dec. 26, 1868	Meeting of digger to discuss new gold regulations
	Mar. 20, 1869	Meeting of diggers to discuss mineral leases
	Jul. 17, 1869	Detailed description of the reef mines.
	Feb. 5, 1870	Description of the machinery at the Beatrice Mine.



PLATE 1. View eastward down Chapmans Gully towards thickly timbered Chapmans Hill.
T24360



PLATE 2. Remains of National Gold Mining Company's enginehouse built in 1866 below Poor Mans Hill, Old Echunga Diggings.
T24361



PLATE 3. Entrance to National Gold Mining Company alluvial adit in cemented Tertiary gravels, old Echunga Diggings.
T24362

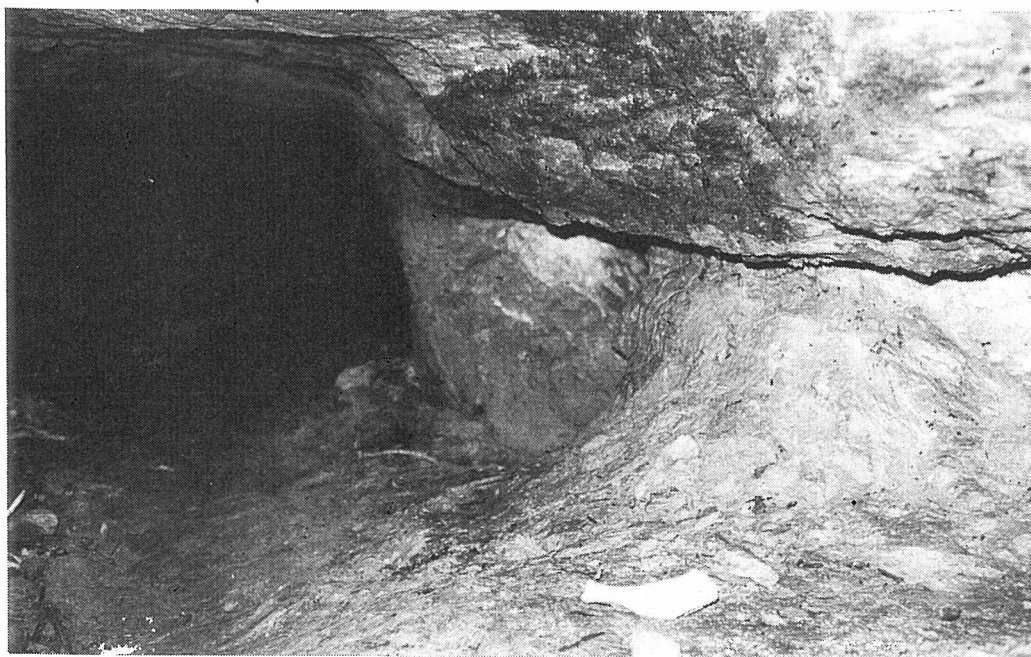


PLATE 4. Contact between cemented Tertiary gravels and weathered Precambrian bedrock in National Adit, Old Echunga Diggings.
T24192

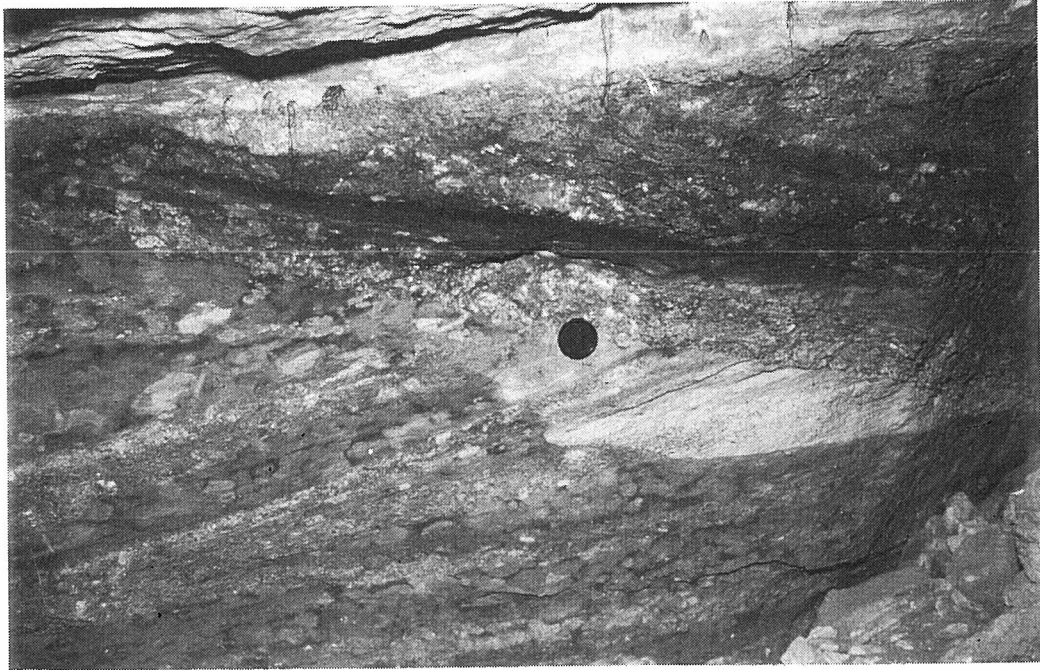


PLATE 5. Cross bedding in Tertiary sands, National Adit, Old Echunga Diggings.
T24363



PLATE 6. Outcrop of Tertiary conglomerate, Jupiter Creek. Diggings.
T24364



PLATE 7. Quartz crystals in reef material, Jupiter Creek.
T24365

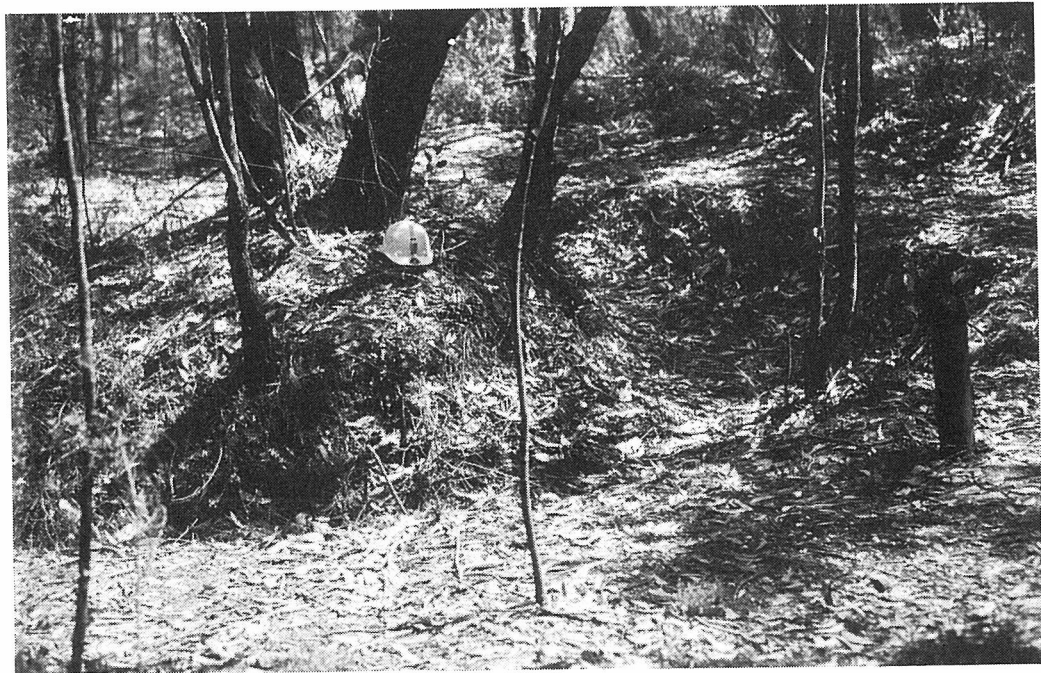


PLATE 8. Site of horse puddler, Jupiter Creek.
T24366



PLATE 9. Excelsior Adit, Jupiter Creek.
T24367

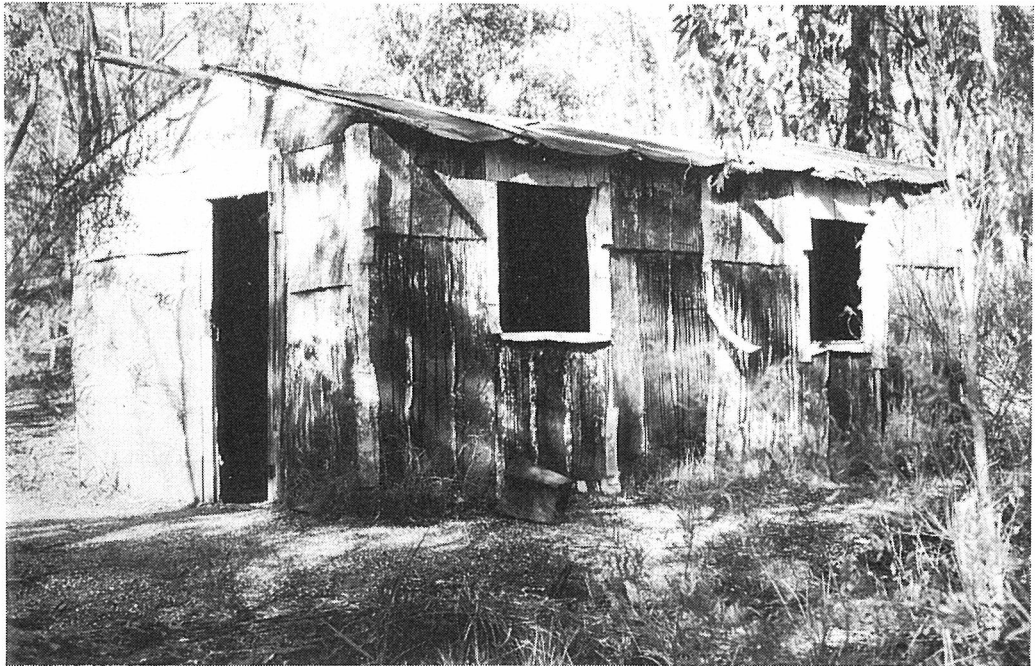


PLATE 10. Hewletts Hut, Jupiter Creek.
Constructed of flattened out bitumen drums and linoleum in the 1930s.
T24368

PLATE 11. Chimney and underground flue
constructed in 1869.
Beatrice Mine,
Jupiter Creek.
T24369

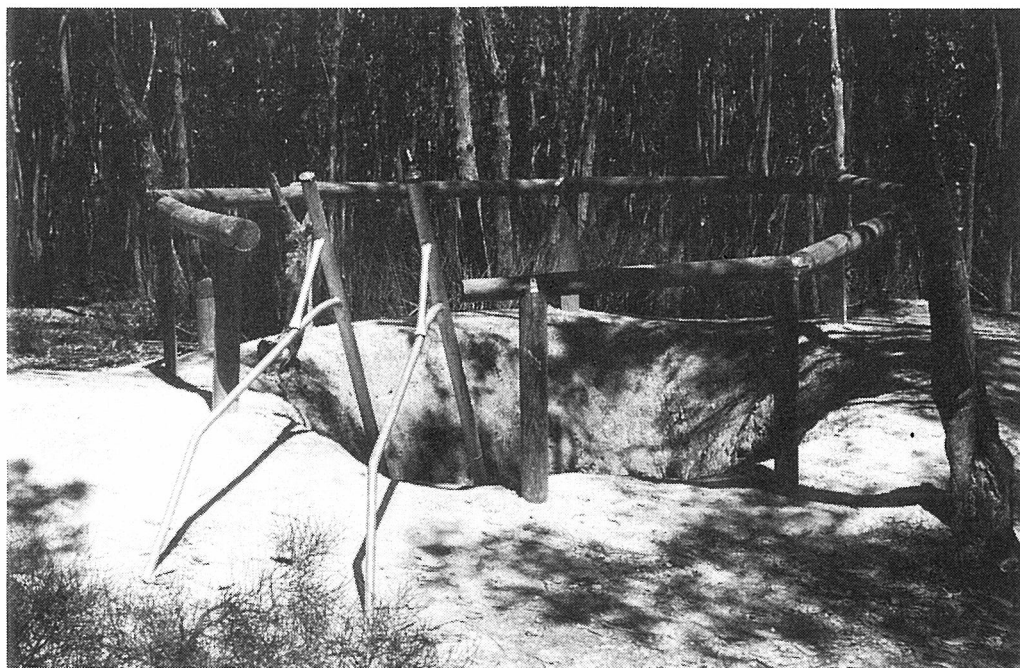


PLATE 12. Fenced shaft with ladder, Jupiter Creek.
T24371

PLATE 13. New Phoenix Adit,
Jupiter Creek.
T24370

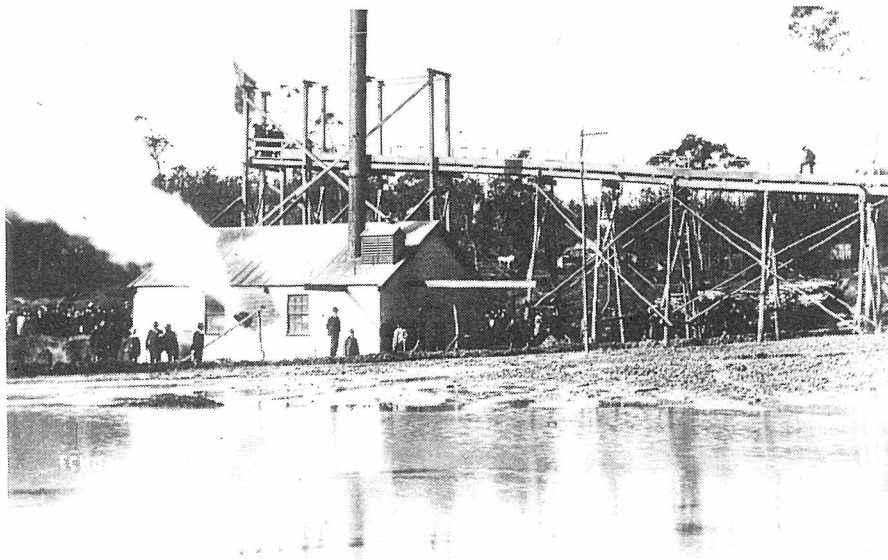
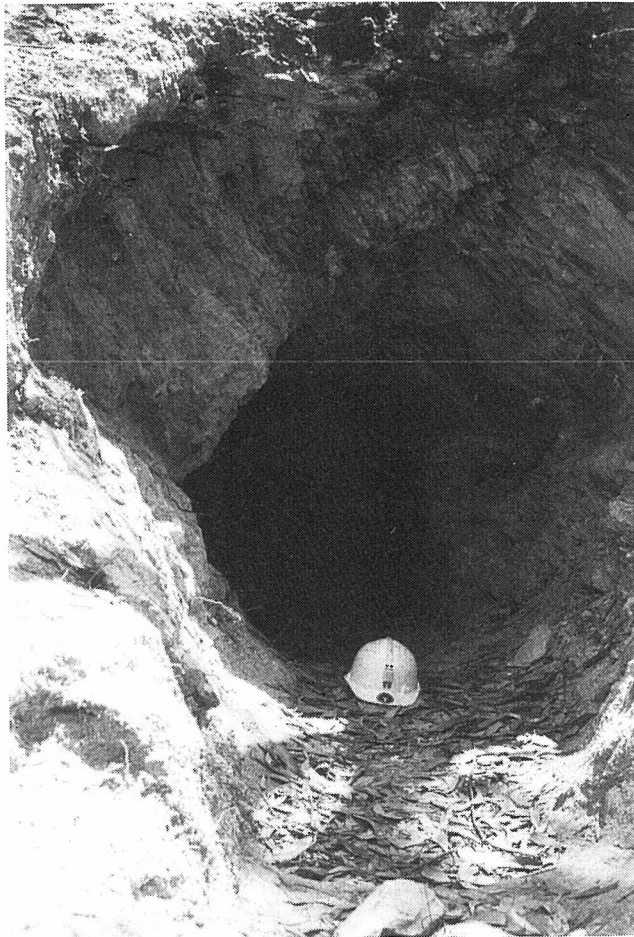


PLATE 14. Echunga Sluicing Works on the Official Opening, July 1906. The building housed a steam engine which pumped alluvial gravel to the top of the sluice. The material then washed over corrugated riffles where any gold collected.
N24062

ECHUNGA GOLDFIELD

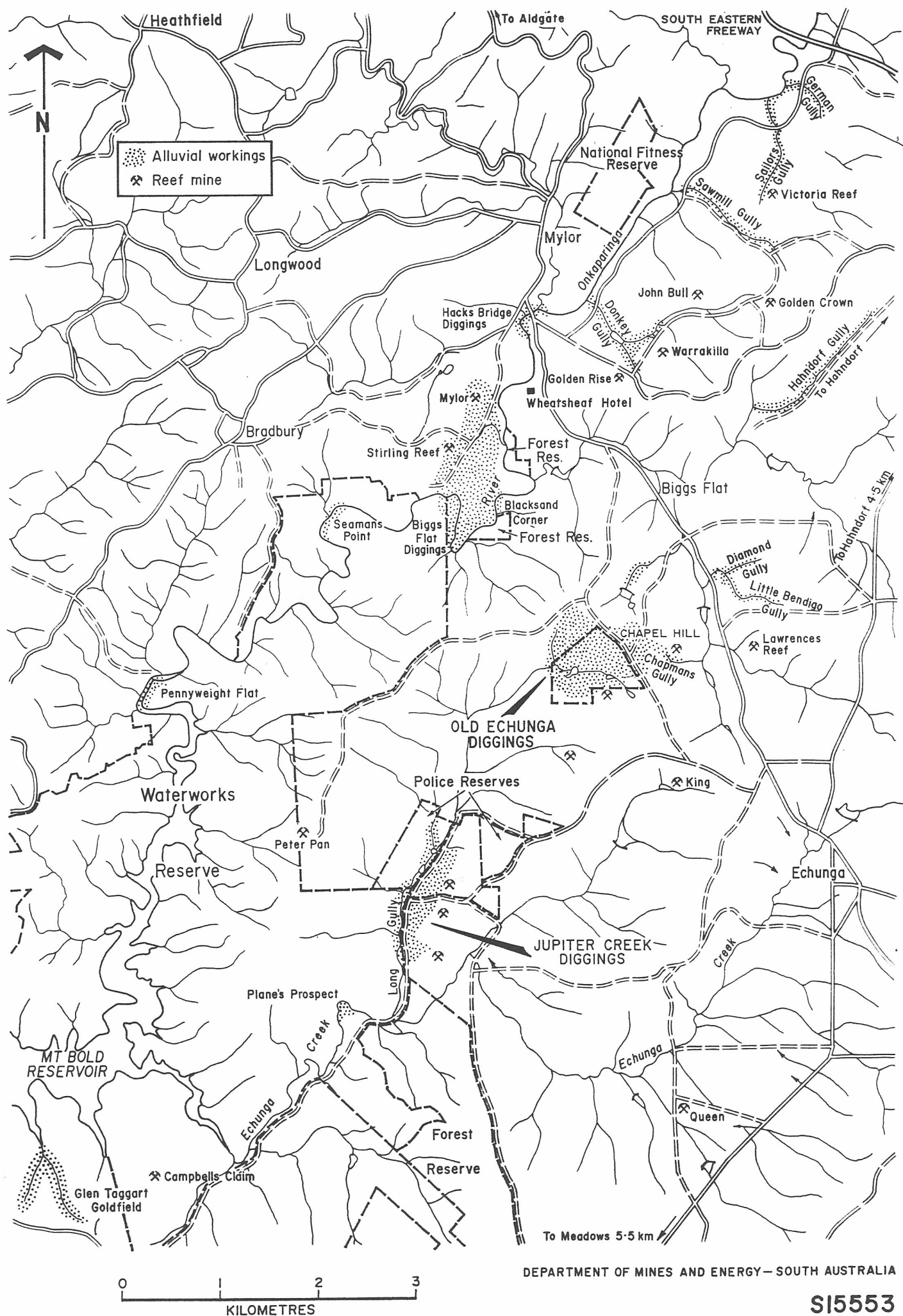
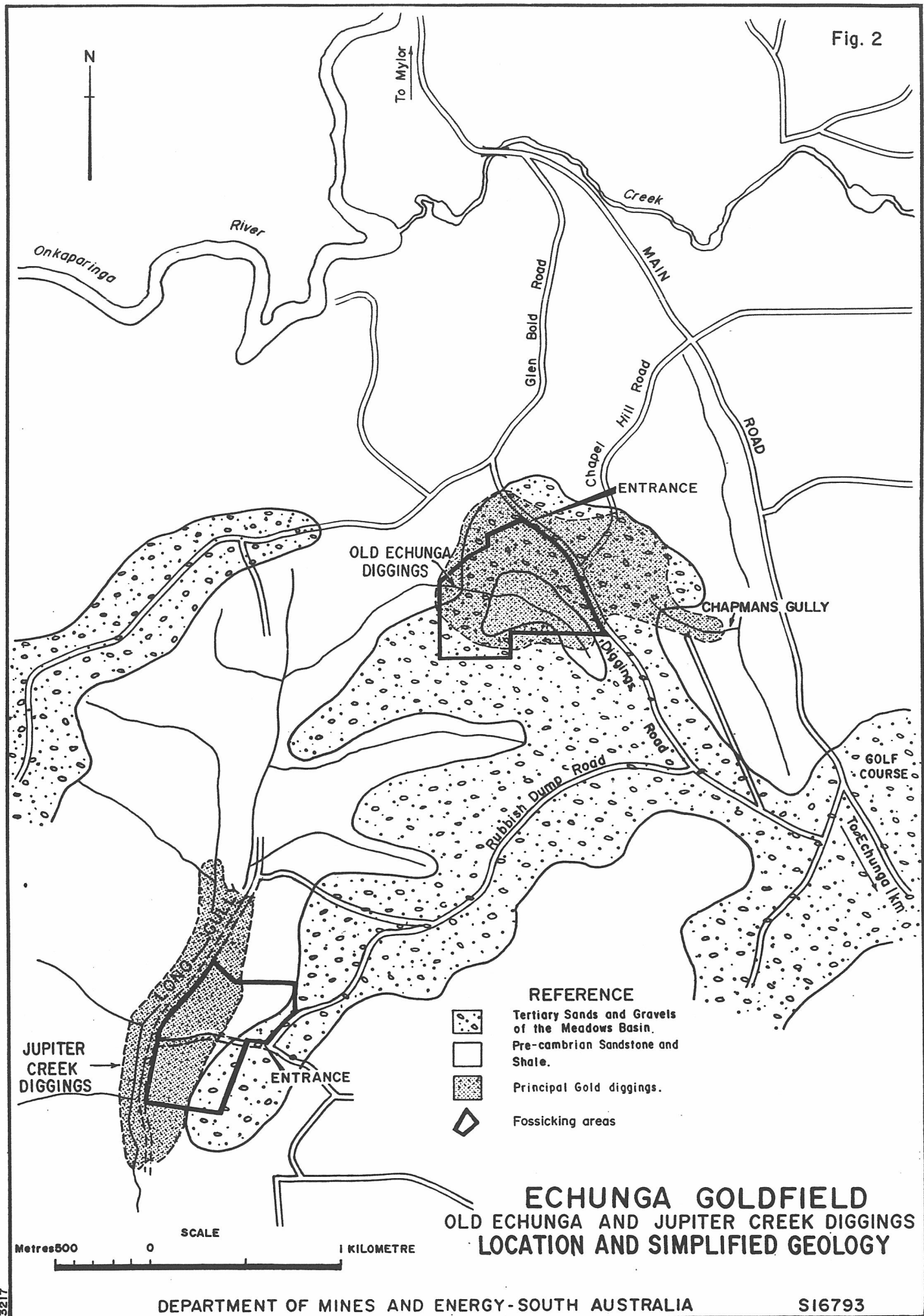


Fig. 2



ECHUNGA GOLDFIELD TYPES OF GOLD DEPOSITS

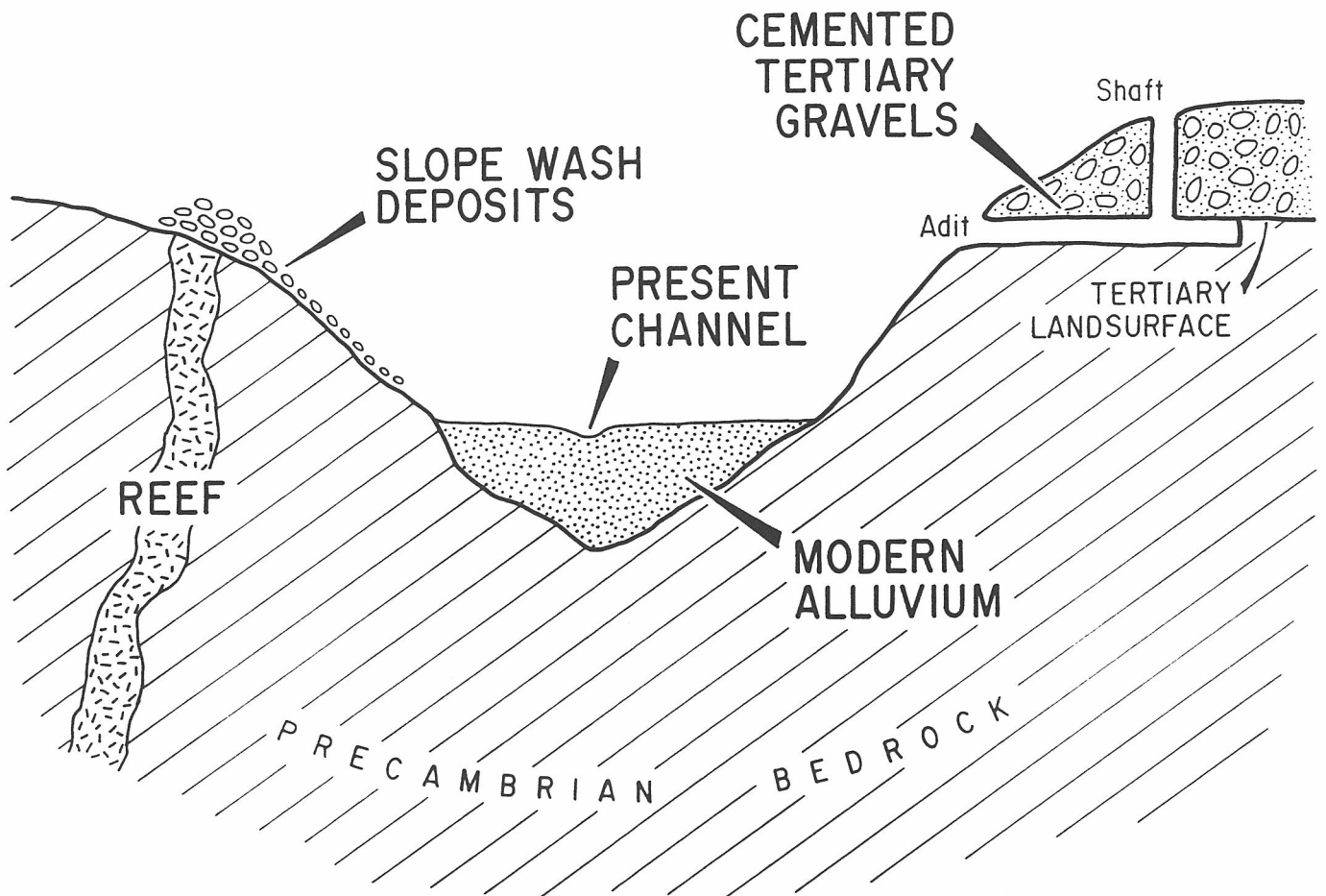


Fig. 4

ECHUNGA GOLDFIELD OLD ECHUNGA DIGGINGS

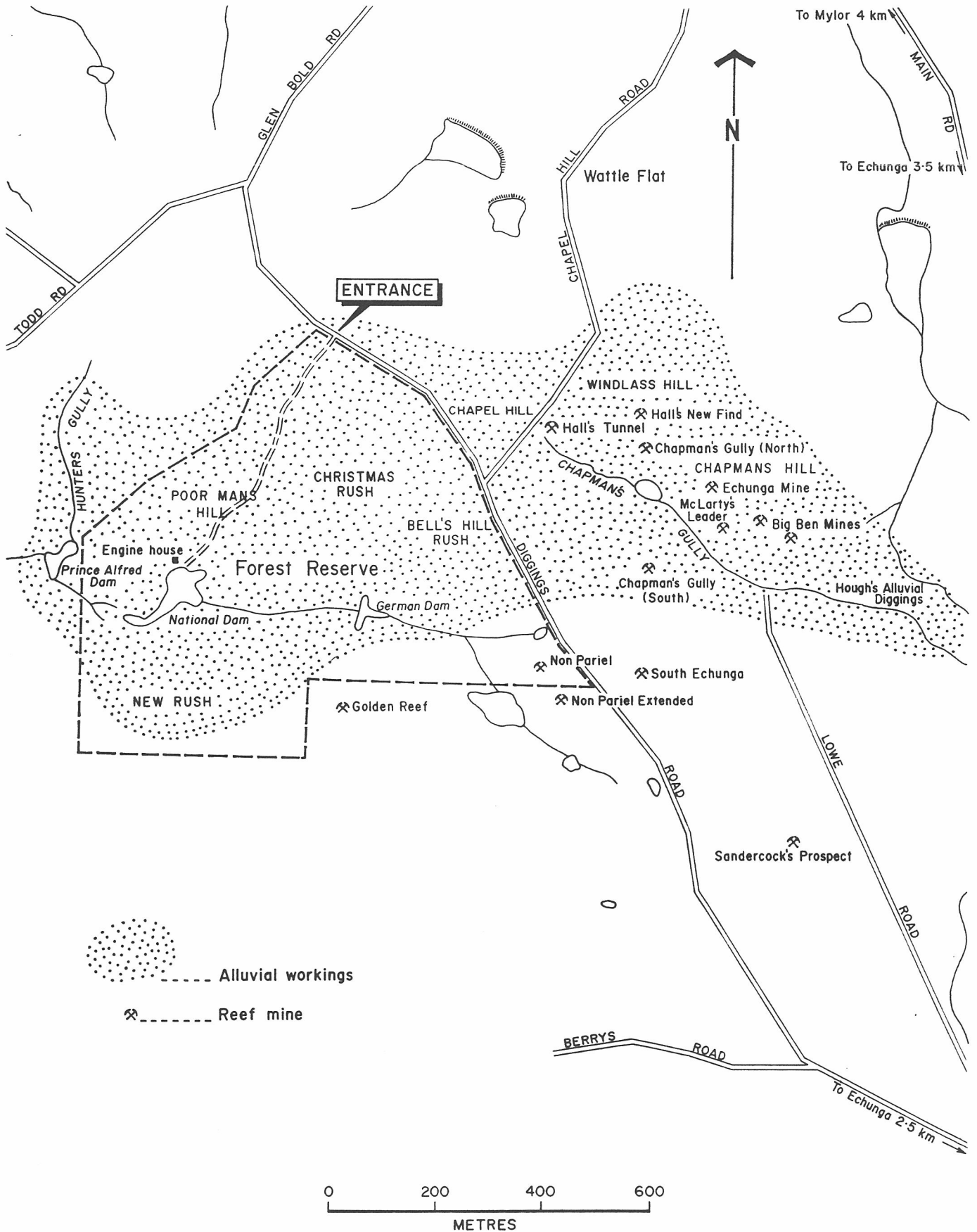
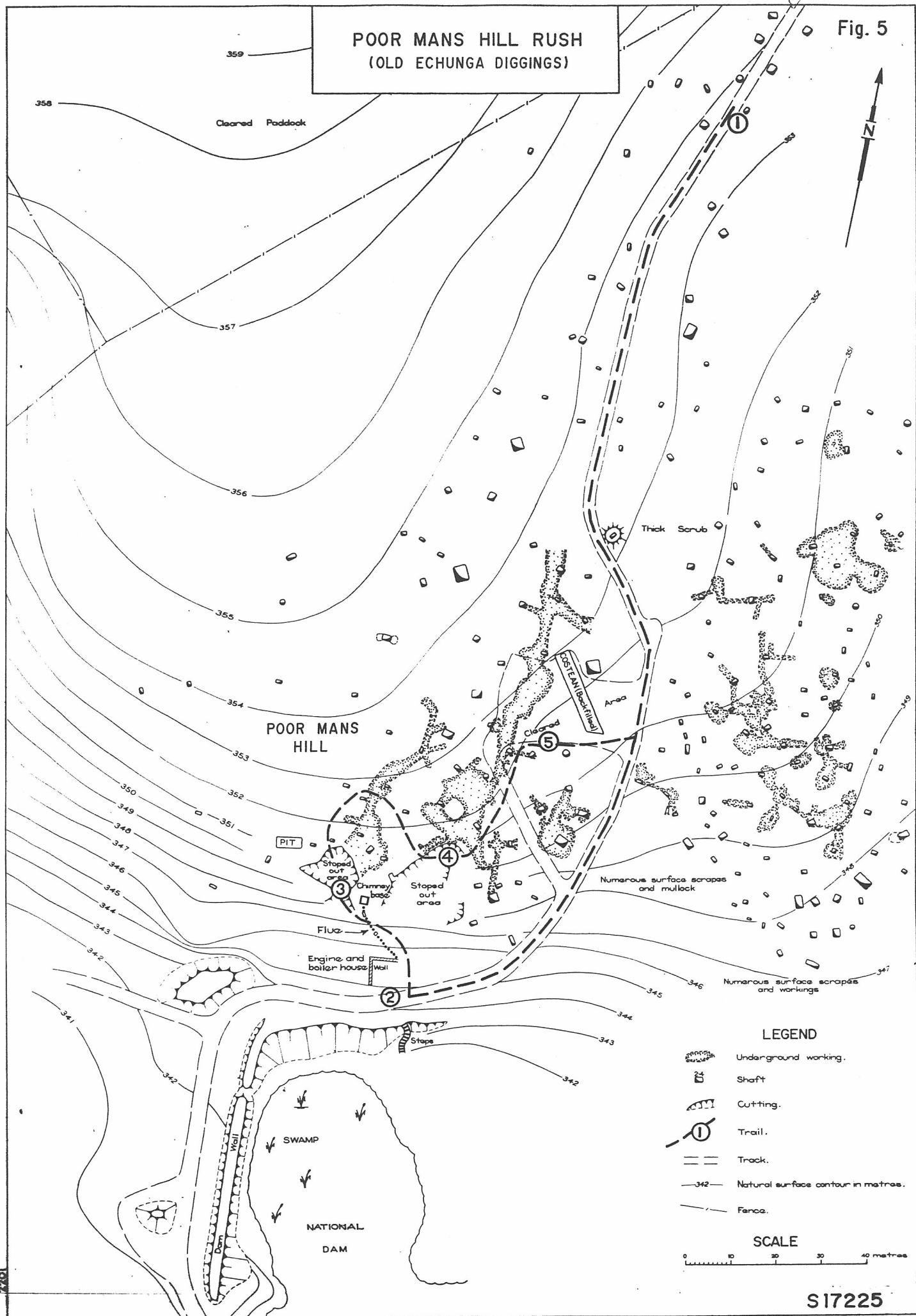









Fig. 5

POOR MANS HILL RUSH
(OLD ECHUNGA DIGGINGS)



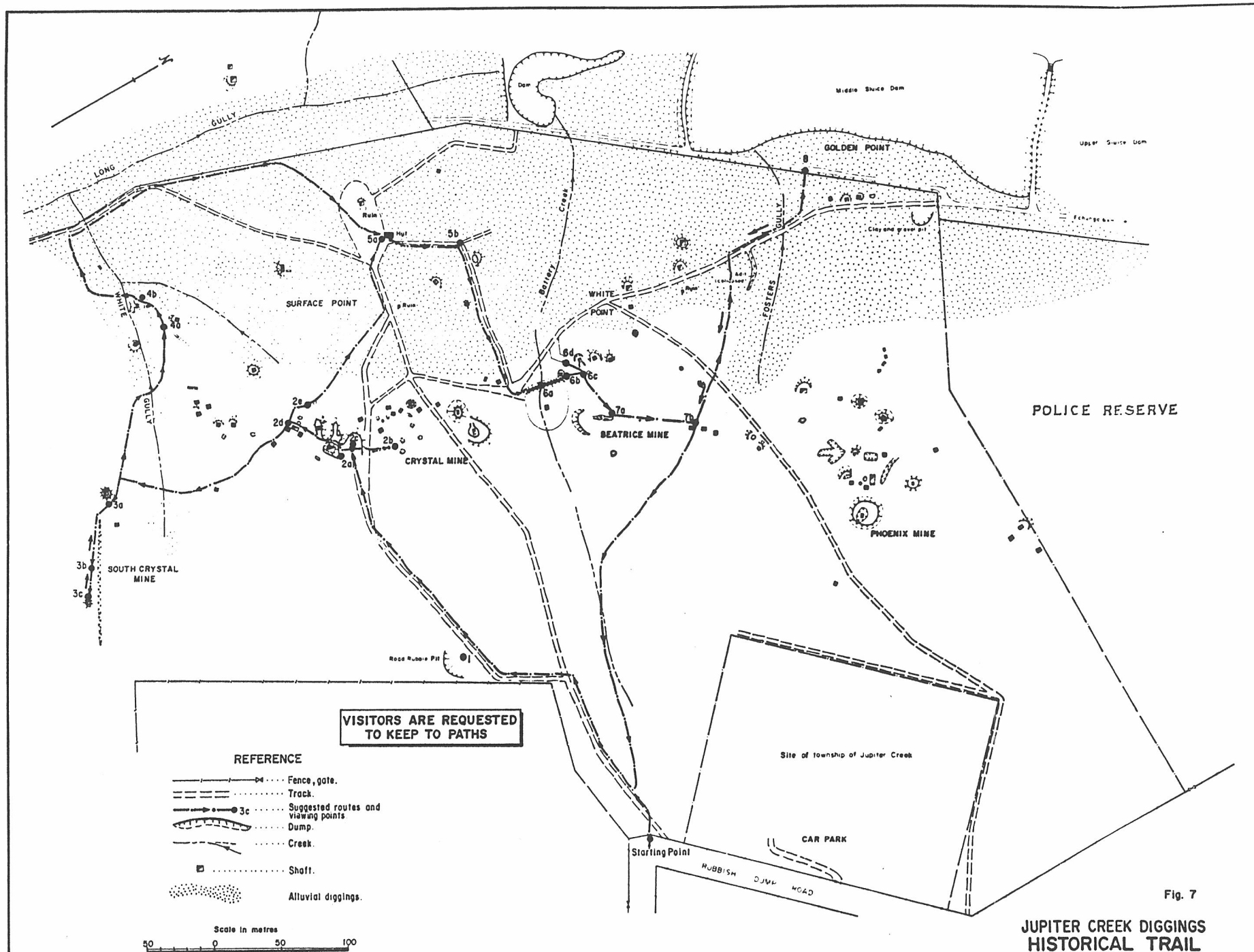
LEGEND

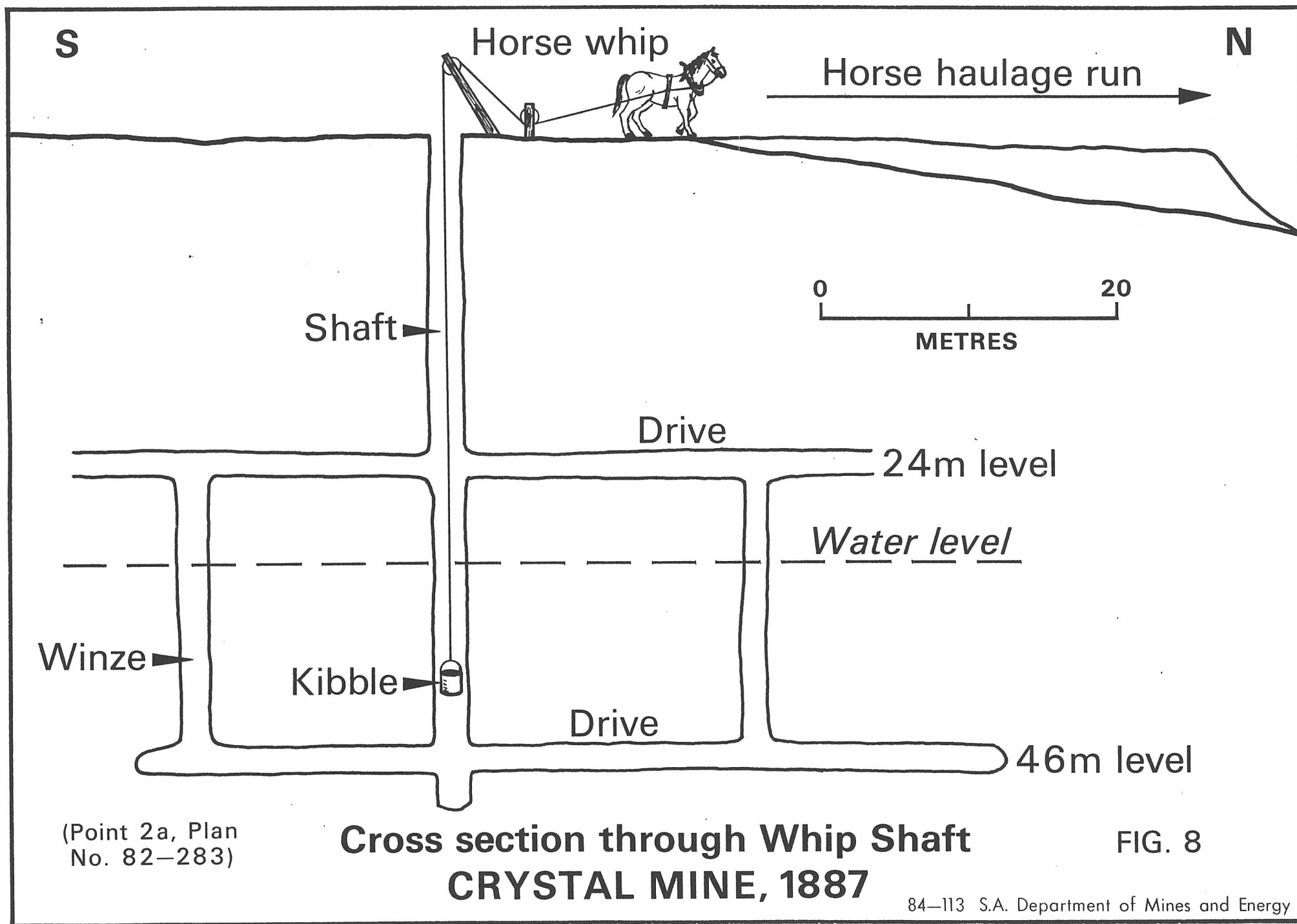
-  Underground workings.
-  Shaft
-  Cutting.
-  Trail.
-  Track.
-  Natural surface contour in metres.
-  Fence.

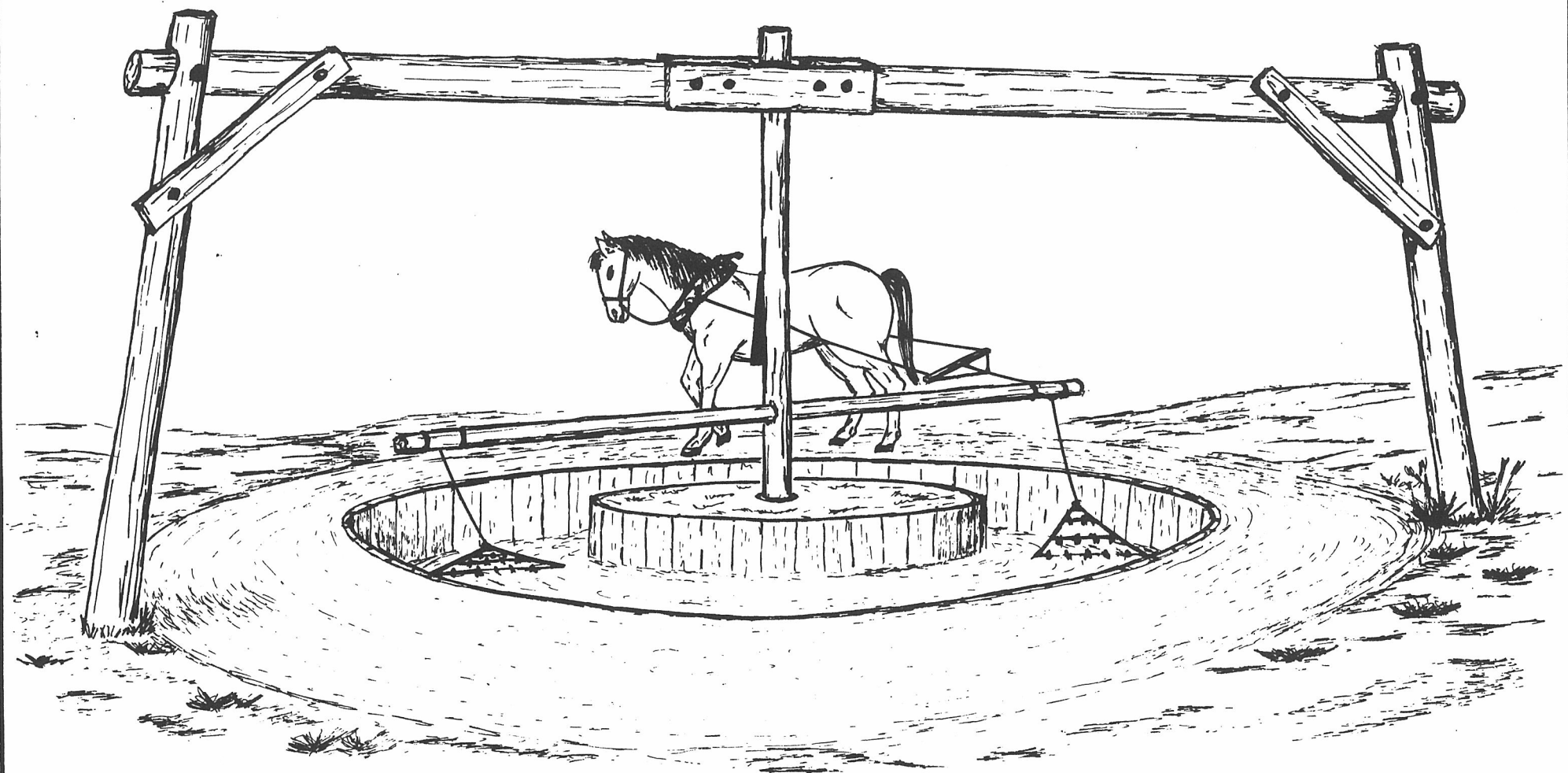
SCALE

0 10 20 30 40 metres

S17225







(Point 2e, Plan No. 82-283)

FIG. 9

HORSE PUDDLER

This circular depression is the remains of a horse puddler erected in 1888 to separate clay from gold bearing ore.