Introduction
During the period 1841–1851 the Mount Lofty Ranges were the site of Australia’s first mining era. This was the decade prior to the discovery of gold in the eastern states when virtually all of the metalliferous mines in Australia were located in South Australia and as a result its population grew from 15,000 in 1841 to 64,000 in 1851.

The 1840s mining boom followed the discovery of silver–lead ore at Glen Osmond, in the foothills of the Mount Lofty Ranges on the outskirts of Adelaide (Fig. 1). The Glen Osmond discoveries were quickly followed by the discovery and exploitation of a large number of mines, the most significant being the copper deposits at Kapunda (1844) and Burra (1845). These developments came at a crucial time in the history of South Australia: in the early 1840s the newly created colony was on the verge of bankruptcy and was saved from collapse by the mining boom.

The mining of copper ores at Kapunda and Burra caused the first major decentralisation away from Adelaide and by 1850 Burra with a population of 5,000 was the largest inland town in Australia and seventh largest overall. In 1850 minerals constituted 67% of the value of exports from the Colony and wool 29%. A large proportion of the population was directly or indirectly dependent on mining and South Australia was the third largest copper producer in the world.

These mineral deposits, the first exploited less than five years after first settlement of the Colony, had a profound effect on settlement. They brought about a major influx of capital and immigrants into the Colony after the depression of the early 1840s and provided employment for a large number of people. Land was surveyed for mineral tenements, mining townships and agricultural purposes. Basic road networks were established during this period to cart ore to Port Adelaide for shipment to Wales and also to deliver heavy machinery to the mines.

The first discoveries
Glen Osmond
The first metalliferous mine in Australia, Wheal Gawler, commenced operations within sight of Adelaide in 1841. Land at Glen Osmond had been surveyed into sections and sold in the late 1830s and, according to the existing Land Sale Regulations, mineral rights belonged to the land owners. The Glen Osmond mines were small, employing up to 200 people at one time, but they were the first to attract Cornish miners as settlers to South Australia. Mining ceased by 1851, partly due to the exodus of miners to the newly discovered Victorian goldfields.

Kapunda
In 1842 Francis Dutton and Captain Charles Bagot jointly discovered copper on unsurveyed crown land near the present town of Kapunda. Very little land outside the Adelaide area had been surveyed and sold at that time and the 1842 Act for the Sale of Waste Land of the Crown stipulated that such land had to be sold at auction in 80-acre lots at a minimum price of £1 per acre. Keeping their discovery a secret, Captain Bagot requested an 80-acre section be surveyed around the outcrop, and put in a tender of £80 which was accepted in January 1843: this section became the Kapunda Mine.

Mining operations commenced in January 1844 (Fig. 2) and by 1846 several rows of miners’ cottages had been constructed on the mining property, the first company housing in Australia. In 1845 the first horse whin in the Colony was erected to Figure 1 The mines and smelters of Australia’s earliest mining era. Also shown are the special mineral surveys and the various copper roads which operated between 1844 and 1877 taking ore and copper from the mines to Port Adelaide.
drain water from the mine, but it was incapable of handling the volume and in 1848 the first Cornish beam engine in Australia was erected. By 1850 the mine employed 300 men and boys, and copper to the value of nearly £1 million was produced up to closure in 1879.

Until 1846 settlement was generally confined to the vicinity of the mine, but in that year land surrounding the mine was surveyed into sections and sold by auction. The North Kapunda Mining Company purchased 13 sections, gambling on discovering northern extensions of the Kapunda lodes. The company employed a Cornish mine captain and 30 miners to prospect their property, but no ore was found. To recover some of its investment the company laid out the township of North Kapunda (later Kapunda) in 1849 and by 1851 the township contained 350 houses and had a population of about 2000. Thus, the basic plan of the private township of Kapunda was determined by the surveying into 80-acre sections of the land surrounding the Kapunda Mine.

Special mineral surveys

Following the discovery of copper on crown land at Kapunda and its subsequent survey and purchase for £80, regulations originally issued in 1842 stipulating that the minimum amount of land that could be purchased in unsurveyed districts was 20,000 acres at £1 per acre were brought into force. This became the only way to acquire mineral rights on unsurveyed crown land after 1844. Four such special (or monster) surveys were made and purchased before the system was abolished in 1851: Burra Creek (1845), Mount Barker (1846), Mount Remarkable (1846) and Reedy Creek (1846).

Burra Creek

The first discoveries of minerals outside the surveyed districts were near Burra Creek in 1845 by two shepherds at two separate localities. To acquire the mineral rights, the Burra Creek Special Survey was jointly purchased in late 1845 by two parties that were formed to raise the sum of £20,000. These parties were the South Australian Mining Association (SAMA) and the Princess Royal Mining Company (PRMC). The survey, measuring 8 miles by 4 miles, was laid out to incorporate the two discoveries, one in each half, and lots were drawn to determine ownership (Fig. 3). SAMA gained the northern half and what was to become the Burra Burra Mine. PRMC won the southern half and what was considered to be the more impressive outcrop, but the ore quickly petered out at depth and operations at the Princess Royal mine ceased in 1851.

Mining commenced at the Burra Burra Mine in September 1845. It was soon to become the largest mine in Australia (Fig. 4) and produced 80,000 t of dressed ore up to 1851, with peak production of 23,000 t in 1851 which was about 5% of the world’s copper production. Its orebody was so rich that it was it was referred to as the Monster Mine and the Eighth Wonder of the World and during its first six years of operation issued 15 dividends of 200%. More than 1000 men and boys were employed on the mine and a further 1000 were employed as carters, woodcutters and smelter men.

It is interesting to note that it was just possible to include the two discoveries within the original special survey, resulting in the Burra Burra Mine being very close to the northern boundary. This was a critical factor in the establishment of the various Burra townships.

In 1846 GS Kingston, a director of SAMA, laid out the company township of Kooringa of 40 acres in half-acre blocks. This was situated near the mine and cottages were constructed by the company for miners and their families. The early rapid development of the Burra Burra Mine led to a shortage of housing for miners and their families, which resulted in many living in dugouts along Burra Creek. Kooringa was both the first company township and the first mining township in Australia. Because the company did not grant freehold title in their township until the 1870s when the mine was nearing closure, other townships developed adjacent to the northern boundary of the company property.

Figure 3 Burra Creek Special Survey, 1845.
To break the company’s monopoly the government surveyed the township of Redruth, adjacent to the northern boundary of the special survey. It was named after the renowned Cornish mining town and comprised 120 allotments which were sold at auction in August 1849. These allotments were centred around a Police Reserve which already contained a police station that had been built in 1847. The township contained a strip of parklands and its streets were named after Cornish mining towns.

In 1846 Section 4 adjoining the northern boundary of the special survey was acquired by the South Australian Company and comprised 120 allotments which were sold at auction in August 1849. These allotments were laid out the township of Aberdeen, which was purchased at auction by the Bon Accord Mining Company, of Aberdeen, Scotland. The high price obviously reflected the hope that the Burra ore body would extend northwards into this property. However no extension was encountered and in 1849 the company laid out the township of Aberdeen adjacent to the Bon Accord Mine, presumably to recoup some of its outlay by selling land.

In 1849 the Burra Smelting Works were erected opposite the mine, across Burra Creek. These were the largest smelting works outside Swansea in Wales, until the Wallaroo Smelting Works were erected in 1861. Welsh smelter men were brought to Burra by the Patent Copper Company and in 1855 a section near the northern boundary of the special survey was acquired by the smelting company and subdivided as Llwechwr. This, with its Welsh street names, became a ‘Welsh’ village.

Other Burra private townships include Hampton (laid out in 1857), Copperhouse and Lostwithiel (laid out in 1859), St Blazey (1861), New Aberdeen (1872) and Graham (1874).

Mount Barker

In 1845, encouraged by reports of mineralisation in the Mount Lofty Ranges, the South Australian Company sent two Cornish miners to explore the Mount Barker district. The Cornishmen reported to the company’s secretary in South Australia, William Giles, that they had found a rich deposit of copper ore, and this was confirmed by the company’s geologist, JC Dixon. The company directors in England instructed Giles to purchase the freehold of the land and, accordingly, Giles applied to the Treasury for the area he wanted.

Giles’ application was refused as an earlier application for a part of the land had already been granted to Duncan and Lachlan MacFarlane of Mount Barker, who wanted the land for grazing their sheep. However, the MacFarlane brothers, who were by now undoubtedly well aware of the mineral find, refused to give way to the South Australian Company and were supported by a group of influential Adelaide men. Eventually a compromise was reached when the two parties agreed to make a combined application for a special survey of 20 000 acres at the regulation price of £1 an acre. The MacFarlanes, together with their financial supporters, formed the Paringa Mining Company with sufficient capital to purchase 8000 acres, with the South Australian Company to purchase the balance of 20 000 acres.

The Mount Barker Special Survey took place in January 1846 and the two companies agreed to divide it into 20 strips, each of 1000 acres, and to select one strip at a time, with the choice of the first strip decided by drawing lots (Fig. 5). The South Australian Company won the right to first choice and selected strip 5, and the MacFarlane group’s first choice was strip 4. The South Australian Company chose the name Kanmantoo for their mine, while the MacFarlane group’s orebody became the Paringa Mine.

Mining commenced in the Kanmantoo area in 1846 and by 1850 a number of other mines had been established, most bearing the names of famous Cornish mines including Wheal Prosper, Wheal Friendship, Wheal Mary, Wheal Harmony and Wheal Maria. The most important mines were Kanmantoo, Paringa (1846) and Bremer (1850). The companies divided their land into mining sets in the Cornish fashion and offered them for lease. By 1850 the mining townships of St Ives (1846), Kanmantoo (1849) and Callington (1850) had been laid out by the companies to serve the nearby mines. Other townships surveyed were Tasvistock and Staughton in 1846, and Kanmantoo South in 1857. St Ives and Callington were named after famous Cornish towns and the area was known as the ‘Cornwall of the Colony’.

Mount Remarkable

After a report that a hill of copper had been seen at the head of Spencer Gulf the Mount Remarkable Special Survey of 20 000 acres was applied for and granted in May 1846 to the Mount Remarkable Mining Company. However, the company proved unsuccessful and was dissolved in 1851. In 1852 the townships of Bangor and Melrose were laid out at the southern and northern ends of the survey, respectively, and sold with the remainder of the company property at auction in January 1853.

Figure 4 The Burra Mine, 1850, by ST Gill, showing Roachs Enginehouse at the centre of mining activities. (Courtesy of the Art Gallery of South Australia; PIRSA photo 049922)
discoveries on adjoining sections and other companies including the Adelaide and Victoria mining companies were formed to work them. Up to 100 miners were employed in the area and 3000 t of hand-picked ore raised up to 1851.

**Strathalbyn area**
Copper ore was first discovered in the area in 1846 and in 1849 the Strathalbyn Mining Company was formed and purchased eight mineral sections near the township of Strathalbyn. In 1850 a township was laid out on one of the sections, but before any allotments were sold the mine had ceased operations due to difficulties in treating the ore.

**North Rhine Mine**
Four mineral sections in the Hundred of Jellicoe near the River Rhine were purchased at a government land sale in 1849. Subsequently, the North Rhine Mining Association was formed to work the property and established the township of Rhinefield near the River Rhine to serve the mining community. The mine closed in 1851 but was reworked between 1859 and 1863. A unique Cornish enginehouse built in 1860 still marks the location of this early mining endeavour.

**Worthing Mine**
Copper ore was discovered in 1847 near Hallett Cove on property known as Worthing Farm, belonging to John and Alfred Hallett. The Worthing Mining Company was formed in 1849 and by 1851 a small community of more than 100 people had developed near the mine. Although the mine was of little consequence as a copper producer its Cornish enginehouse and chimney are the most significant relics of Australia's earliest mining era.

**Weal Barton**
The Weal Barton Mining Association was formed in December 1849 to work outcrops of copper ore near the township of Truro. The existence of mineralisation had been kept secret until the land had been surveyed and sold. In 1850 Charles Barton laid out the township of Barton, about 0.5 km west of the mine. The township included an inn, chapel and 35 cottages. Up to 100 men were employed at the mine which ceased operations by 1852.

**Copper roads**
Up until 1844 the only well-defined road north of Gawler passed through Captain Bagot's pastoral property of Koonunga to the east of Kapunda. In early 1844 Bagot defined a road between Kapunda and Gawler which became the first copper road in South Australia (Fig. 1). Bagot, in a bullock dray with a plough attached and leading the first convoy of ore, followed a pre-marked route from the mine to Gawler. Near the junction of the mine road and the Gawler to Koonunga road (the present Gawler to Greenock road) the plough broke and was substituted by the limb of a she-oak. Later an inn was erected at the junction of the two roads and the township that was established, named She-Oak Log, still exists.

Drays carting ore from the mine followed the furrow and the road quickly became established. All produce from the Kapunda Mine used this road until the railway was extended to Kapunda in 1860. The road was not determined by survey, but rather by convenience and subsequent surveys used the road as a cadastral boundary. Although the road has long since been replaced as the main connection between Kapunda and Gawler, its original location can still be clearly traced on present day plans, even where the road no longer exists.

Up to 1849, ore from the Burra Burra and Kapunda mines was shipped to Swansea in Wales for smelting. As many as 1200 bullock drays, each carrying about 2 t of ore, were to be seen on the roads between Burra and Port Adelaide. Heavy machinery (steam cylinders weighted up to 20 t) was also conveyed to the mines from Port Adelaide. About 50 000 t of ore was carted to Port Adelaide from the Burra Burra Mine up until 1849.

Between 1845 and 1851, three main lines of roads were established between Burra and Port Adelaide: one via Kapunda and Apoinga, another via Kapunda and Waterloo and a third via Riverton and Saddleworth. The roads converged at Black Springs and at Gawler. The Riverton–Saddleworth
line became known as the Great Northern Road and is today the main route to Burra from Adelaide. Like the earlier copper road between Kapunda and Gawler, these roads were not determined by survey, but rather by aspects of convenience, the availability of water and creek crossings. Land was quickly surveyed along these routes and inns and settlements established to serve the traffic. Townships were later laid out around the inns and settlements, most of them private. Examples include Saddlsworth, Riverton, Hamilton, Glendore (Black Springs) and Emuville.

At Black Springs, where the three roads converged at a watering hole, a licence was granted in October 1846 to Daniel Cudmore for a hotel named the Miners Arms. Later this became known as the Emu Hotel. Following commencement of the Karkulto Mine a short distance to the north in 1850, Edmund Bowman purchased land around the hotel and springs and laid out the township of Emuville. This consisted of 38 four-acre blocks with frontages on the roads to Burra and Apoinga to the south. However the Karkulto Mine was not successful and Emuville did not eventuate, although it is still shown on present day cadastral plans. The township of Glendore (later Black Springs) which was laid out 1.5 km to the south of the springs has survived to the present day.

Messrs. Penny and Owen constructed one of the first smelters in South Australia in 1848 at Apoinga, 32 km south of Burra, where timber was plentiful. Ore was purchased from Burra and the first smelted copper was produced in January 1849. By 1851, 50 t of copper were being produced per week and the smelters supported a population of more than 100 in a village of about 30 houses. Lack of ore due to the erection of smelters at Burra and the exodus of miners to the Victorian goldfields resulted in closure of the Apoinga smelters in 1852.

After the establishment of smelters at Burra in 1849, copper ingots were transported along a new road from Black Springs to the head of St Vincent Gulf for shipment to Port Adelaide. This route saved about 80 km of land cartage and became known as the Gulf Road. The township of Port Wakefield, consisting of 146 one-acre blocks, was laid out by the government and sold at auction in July 1850. Like the copper roads between Burra and Gawler, the Gulf road ran through largely unsurveyed and unsettled country and settlements were established along the route at the various watering localities. Private townships laid out along the route included Mintaro, Auburn and Leasingham and the settlement of Dunns Bridge later became the township of Balaklava. The various townships were mainly supported by the money spent in cartage of copper from Burra. Their survival depended on the subsequent development of farming and grazing activities.

The Gulf road was abandoned in 1857 when the railway reached Gawler and traffic reverted to the Burra to Gawler roads. However some sections of the Gulf road have survived to the present day.

The railway reached Kapunda in 1860 and Burra in 1870, ending a quarter of a century of carriage of copper by road, which was responsible for a unique period of survey and settlement in South Australia.

**Conclusion**

A number of relics survive from the early mining era which took place in South Australia between 1841 and 1851. These include distinctive Cornish mine buildings and chimneys at a number of abandoned mine sites. However, the numerous townships and road networks established to serve these early mines will remain long after the mining relics have disappeared to remind future generations of Australia’s first mining era.

The topic of this article is the theme of the 17th AMHA Annual Conference 2011 being organised by the Australian Mining History Association (see below).

**Further reading**


For more detailed information see Drew (1987) on which this article is based.

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**Australian Mining History Association**

**17th AMHA Annual Conference 2011**

**14–17 September**

**Hahndorf, South Australia**

The theme is Australia’s Earliest Mining Era which refers to the first era of metal mining in Australia which took place in the Mount Lofty Ranges of South Australia in the period 1841–1851.

Four days of presentations will be mixed with short tours to mining history sites in the Adelaide Hills. There are also three full-day tours.