

## AUSTRALIAN MINING HISTORY ASSOCIATION BOOK REVIEW

### ***Riches Beneath The Flat: A History of the Lake George Mine at Captain's Flat***

**Ross Mainwaring, 2011. John Milton Hutchins, 2010.** Light Railway Research Society of Australia, Melbourne, 2011, pp. i-v, 104, with illustrations.

*Riches beneath the Flat*, presents the history of the Lake George Mine at Captain's Flat in NSW. The area is approx. 900 metres above sea level and is 60 km on the eastern side of Canberra, an area that was inhabited by the Ngarigu Aborigines prior to European settlement. Two phases occurred in its mining development: initial endeavours prior to 1900 and major development after the Great Depression.

Colonists passed through the area as early as the 1830s, and gold was investigated there from 1852. Subsequently gold mining endeavours arose for the Captain's Flat area from 1864 but it was not until 1882 that major activities commenced after a large reef was discovered, and in the following year copper was found.

Gold was difficult to extract from the ore at Captain's Flat due to the high levels of silver and lead that were present. However, mining attempts persevered before attention turned to the extraction of lead and silver in their own right. In 1885, a Kahlo and Dobb 'Pacific Water-jacket' Smelter was built to assist this approach. This revolutionised the mines but, due to the capital costs, it was found that only with large-scale mining could operations survive.

To improve the situation at the then Commodore and at the Koh-i-noor properties, new furnaces, a stamping battery, a Huntingdon Mill and a reverberatory calciner were implemented. The Koh-i-noor group also began heap roasting the ore in 1890, with workers heaping the ore onto timber beds that were then set alight. Huge amounts of sulphur were released which killed most of the bushland in the area, the remaining timber being felled and used in the furnaces. The company believed they could increase yields by introducing Pyritic Smelting, and set about adjusting the facilities to achieve this. They constructed stacks and furnaces, installed pumping equipment, and brought in improvements in the form of electric lighting and telephone communications.

In 1894 the Commodore-Vanderbilt and Koh-i-noor mines were amalgamated and became the Lake George Mining and Smelting Company. Following further investment in 1896, the name was shortened to Lake George Mines Limited.

During the late 1890s the town's population reached 3,000 and it boasted five hotels, an oyster bar and a jeweller. The vast copper yields made world headlines and attracted great interest, seemingly assuring Captain's Flat as a major industrial centre. However the smelting plant could still not satisfactorily deal with the complex, low grade sulphide ore, and the government decided that ore production was too low to justify building a railway to ship the product out. Thus, by 1899 mines were closing down and the town, like so many mining settlements, started to disappear.

The main focus of the book is the second, successful stage in mining development at Captain's Flat. Mining endeavours were re-initiated from 1929 with improved ore

recovery approaches in mind because of the relevant industrial experience gained during the interim period, particularly at Broken Hill. The specific target was iron pyrites which could be used as a feed for the smelters of Port Kembla on the NSW south coast.

Technically the main production development was the achievement of appropriate mineral processing through flotation. Trials were made in 1929 but all was put on hold for a while due to the Great Depression. When re-initiated from 1935, the team included major staff with mineral processing experience relevant to supplementing the outcomes of the trials. On completion of adequate rail links to the coast, and on obtaining the correct mining equipment for the project, the next development involved the provision of blended ore. By 1937, Lake George Mines had built a 39km railway to Bungendore, and introduced new drilling techniques and flotation plants as the base for re-opening the whole area. The targeted level of full production in lead and zinc was commenced in the late 1930's. The town rallied again, so that by 1940 there were 550 miners and a population of about 1800.

Captains Flat became successful. By the end of the 1930s it was second only to Broken Hill, as its mines produced vast quantities of gold, silver, lead, and zinc, plus copper and iron pyrites. However, WW11 placed restraints on production and on client outlets, for both German and Japanese groups had been customers until that time.

Although the mine was a 'protected undertaking' during the WW11 period it still suffered due to the shortage of experienced staff and restrictions on equipment purchases, the latter being especially associated with weak access to off-shore equipment supplies and funds, a situation that was extended to beyond 1945. But fortunately for the local producers Australia placed restraints on externally sourced competitive products as a means of protection.

To assist the World War 11 endeavours, the flotation of copper ahead of lead was introduced in 1942 so that from 1944 a high-grade copper concentrate could also be provided. Very profitable years ensued but revenue started to drop from 1952/53. In the social welfare sphere, the company, Lake George Mines, built 190 fibro cottages for married miners and established a large hostel type building for single men. It also provided a new theatre, a hospital, a swimming pool, an ambulance service, payments for doctors and nurses, electricity, plus in-street lighting, and improved water supply arrangements, but despite this, relationships between the company and the miners became acrimonious. From the production point of view, the role of underground locomotive drivers proved a barrier to lowering costs because it was hard to get experienced people, to set up a good training program and to get locomotive crews to adopt flexibility.

Several major strikes occurred, including one that lasted for seven months. Unfortunately an arrangement in wages and in productivity that was acceptable by both parties could not be achieved. By the late 1950's, based on the resources and the costs, it was apparent that those resources that remained viable were limited and that cost reductions were unlikely. Hence the operation was phased down and mine closure occurred in 1962. The railway line closed and once again the town returned to being a sleepy hollow. Thus ended a second flurry of localised mining activity.

The town now has far fewer residents and being only 45 minutes' drive from the centre of Canberra some of them commute to Canberra for work. Today, Captains Flat is an interesting place to visit with the many mining heritage features available for inspection. The Captain's Flat Hotel (still operating today and apparently well worth a visit) was built in 1938, and, at 32 metres long, it contains the largest bar in Australia.

Overall, this is a detailed and well-illustrated book, which is a very worthwhile buy, both for providing a detailed outline of the past and for presenting background for a visit to the wider area. A mild criticism is that possibly more could have been done to provide greater detail on some of the characters involved. The book's background in that it has been produced for the Light Railway Research Society perhaps explains why mobile equipment is the main focus of the author, rather than the actual mining activities. An attractive positive is that the frequency and range of photographs form a major and useful component of the report.

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