COKE MAKING IN ILLAWARRA

A talk given by Don Reynolds to the Society in March 2006.

Coke making began in Illawarra in 1874 by Osborne and Ahearn who built a small battery of circular beehive coke ovens on a site just to the south of Wollongong Harbour, that undertaking only lasted till about 1890. In 1984 the site was exposed by council when carrying out road works just south east of Belmore Basin; the site was examined and recorded by Brian Rogers and then filled in.

In 1884 Thomas Bertram opened the Broker's Nose Coal Company in the escarpment behind what is now Corrimal; he built a set of 7 beehive coke ovens (presumably of the circular type) on the northern side of Tarrawanna Road, it appears that these ovens only operated spasmodically.

The Southern Coal Company (SCC) was formed in the UK to build a colliery on the southern slopes of Mt Kembla and a railway from the mine to a jetty they were building in an unprotected bay at Five Islands. They also built a large set of modern rectangular beehive coke ovens alongside their railway near where the Commonwealth Steel stainless steel plant was much later built. This coke ovens plant, which was known as the Australian Coke Making Company, went into service in 1888. The coal mine of the SCC immediately ran into problems due to geological disturbances and the mine was abandoned. They negotiated with Thomas Bertram and leased his Corrimal coal mining and railway facilities in order to meet their commitments. The SCC quickly upgraded the Corrimal facility and began to rail coal to their new jetty and coke works. They also closed down Bertram's small coke works.
In 1889 the Bulli Coke Company Ltd built a large set of rectangular beehive coke ovens adjacent to their railway from the mine to their jetty at Sandon Point. The coke works was located just to the east of the South Coast railway line. In 1916 their main customer was the Broken Hill Associated Smelters at Port Pirie; they also shipped coke to San Francisco where there was a ready demand for it. The coke works was closed down in 1930 and lay derelict till 1938 when AIS demolished it to accommodate the railway tracks associated with the rail bridge they built over the South Coast railway. In recent years Stocklands excavated part of the coke ovens site as part of their archaeological study of their Sandon Point development project; the site was examined, recorded and photographed and then filled in.

The Mount Pleasant colliery leased portion of their property near the present Wollongong High School to Robshaw and Figtree who built a small set of 4 coke ovens in 1889; the number was soon expanded to 14 by Edmund Figtree and his four sons. In 1910 the Figtree Bros built a large modern battery of rectangular coke ovens on the eastern side of the South Coast railway line immediately to the north of the old bridge carrying Princes Highway over the railway. The coke works was regularly improved as new technologies developed and ceased operating in 1978.

The Mt Lyell mining and smelting company of Tasmania decided in 1899 to build a battery of rectangular beehive coke ovens to supply coke to their Queenstown smelters instead of denuding the local landscape by making charcoal for their smelting works. The site they chose was at the roadstead port at Five Islands. They entered into an agreement with the Mount Kembla Colliery to erect a set of modern coke ovens adjacent to the Mt Kembla railway line feeding the mine’s jetty. This was a very a very modern installation which supplied its entire output to their Queenstown nonferrous smelting works. The output from the Port Kembla coke works was bagged and shipped to Macquarie Harbour in south western Tasmania and then railed via the famous rack railway to the Queenstown smelters. The Port Kembla coke works was closed in 1925 when the Queenstown smelters ceased operations in that year.
The South Clifton Coal & Coke Company’s coke ovens plant was established in 1900 adjacent to the shaft and headframe of the South Clifton colliery. This was a large installation of rectangular beehive ovens. The coke works was closed down in 1919.

In 1900 the Federal Coke Works Company was established to build a battery of rectangular beehive ovens of modern design. The ovens were built alongside the Mt Keira railway line, just to the west of the South Coast railway. The Beaton Park athletic field now stands astride the old coke works. The Federal Coke Works ceased operations in 1971.

The Bellambi Coke Works was started by BHP in 1901 to supply coke for its non-ferrous smelters at Broken Hill. In 1915 it was taken over by Broken Hill Associated Smelters (BHAS), a company created by a number of the Broken Hill mining companies to erect and operate non ferrous smelters at Port Pirie. The coke works, which comprised 115 rectangular beehive ovens, was situated just to the north of Bellambi railway station between York Street and the South Coast railway. Slack coal was supplied by the South Bulli Colliery via their railway which ran along the northern side of Bellambi Road to their jetty at Bellambi Point. The entire output of the works was despatched by sea to Port Pirie; the coke works closed in 1935.

In 1906 the North Bulli Coke Works was erected at Coledale, adjacent to the North Bulli Colliery. 52 rectangular beehive ovens were initially built; in 1912 a further 54 ovens were provided making the total 106. The colliery and coke ovens formed a very large complex just to the north of the present Coledale railway station. The North Bulli Coke Works closed down in 1926 due to the depressed market.

What was left of the old Southern Coal Company and the Corrimal Colliery were reconstituted into the Corrimal-Balgownie Colliery Ltd in 1902. In 1912 a very modern bench of 40 rectangular beehive coke ovens was built on a site adjacent to the Corrimal railway station. This was the first set of coke ovens in the State designed to recover the waste heat leaving the coke ovens and use it in boilers to
raise steam to generate electric power. Enough power was available to support the total electrical demand of the coke ovens plant and the Corrimal Colliery. In 1918 the Corrimal-Balgownie coke ovens power house supplied power to North Illawarra Council for street lighting; in the mid 1960s the local Council changed their supply to the Illawarra County Council. In the 1930 an additional 8 ovens were added to the initial battery. A new battery of 32 beehive ovens was added in 1962. In March 1964 Australian Iron & Steel (AIS) purchased the Corrimal-Balgownie Colliery Ltd primarily to acquire the Corrimal Colliery and its coal leases. AIS continued to operate the coke works. They closed their power house in about 1970 and purchased power from the Illawarra County Council.

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The Illawarra Coke Company Ltd was formed in late 1913 with coke being first produced in 1914. Initially the works consisted of 40 rectangular beehive and is located adjacent to the Coal Cliff Colliery shaft mine at the northern end of the Scarborough tunnel. The South Coast railway separates the coke ovens from the mine. The Illawarra Coke Company and the Coal Cliff Colliery were initially two completely separate companies; the colliery supplied coal, electric power, water and most other services to the coke works. In 1954 both the colliery and the coke works were acquired by Kembla Coal & Coke Pty Limited (KCC). In the 1960s another 8 coke ovens were added together with other major up-rating of the works in order to make it more efficient and environmentally friendly.

The last beehive coke ovens plant built in Illawarra was commenced by Hoskins Iron & Steel (HI&S) of Lithgow in 1916. HI&S were having trouble with their blast furnaces at Lithgow due to the weakness of the Lithgow coke. In the mid 1910s they experimented with
imported coke from the Newcastle and Illawarra and found that a blend of Lithgow and Illawarra cokes gave a vast improvement. They began to import large quantities of coke from coke works at Bulli, Coledale, Corrimal, Mount Pleasant and other Illawarra coke works; all works used coal from the Bulli or No 1 seam. In about 1915 some 75 to 80% of Lithgow’s coke requirements were coming from Illawarra. Hoskins began to look for a coal mine site in Illawarra in order to minimize coke costs. In 1916 Hoskins acquired an undeveloped coal mine working the No 3 or dirty seam from Alexander Lang at Wongawilli. They developed the mine and built a set of 20 rectangular beehive ovens of very modern design; they also recovered the waste gases from the ovens and used it to generate enough electricity to meet the demands of the coke works and the mine. The mine and coke ovens were placed in operation in October 1916. In December 1918 the Wongawillli mine and coke ovens were shut down to allow a coal washery to be built immediately adjacent to the coke ovens; upgrading of facilities at the mine also took place. The mine, washery and coke ovens were placed back in service in mid 1920. The coal washery was needed to remove much of the ash from the coal to improve coke works productivity, reduce freight costs and operating costs at the blast furnaces. Over the years the number of ovens was further increased. With Hoskins decision to relocate its iron and steelmaking activities from Lithgow to Port Kembla in the early 1920s additional ovens were built at Wongawilli. In 1928 Australian Iron & Steel (AIS) was formed to take over all the assets of HI&S; the Hoskins family still retained control of the new Company. Following the merger of AIS and BHP a major up-rating of the Port Kembla steelworks took place; one major improvement was the building of a by-products coke ovens battery which came into operation in 1938. Following the commissioning of this new coke ovens plant the Wongawilli beehive coke ovens were shut down; however the Wongawilli coal washery continued to operate. To cater for the heavy demand for iron during WWII the Wongawilli coke ovens were decommissioned; they were ultimately closed down in 1945 and eventually demolished.

HI&S of Lithgow was a large consumer of Illawarra coke and to a large extent sustained the operation of those coke works not specifically
built for a wedded customer such as the Mt Lyell and BHAS works. Even after Hoskins opened their by-products coke ovens and commissioned their new blast furnace they continued to take coke from various Illawarra coke works.

Of the 14 beehive coke ovens built in Illawarra only two remain in operation; they are the coke works at Corrimal and Coalcliff. These are highly efficient operations despite the fact that none of the volatile products in the coal are recovered. World wide there are niche markets for beehive coke where by-product coke is not suitable. Considerable research is being carried out internationally to improve the efficiency of beehive coke ovens; their future seems assured.

The prime reason for establishing these beehive coke ovens was to absorb the fine coal, known as duff or slack coal, which was left at the mines and dumped in any convenient gully. In the early days the coal was fired in grate type boilers and the fines only clogged the grates. The miners filled their skips by forks to minimize these fines in the coal leaving the colliery; the duff or slack coal was not a saleable product so converting it into good coke was an attractive by product of the industry. In later years with the introduction modern coal firing devices boilers can readily accept fine coal. In fact coal is now crushed to make the fine coal needed for coke making.

When considering coke manufacture in Illawarra there is one name that stands out and that is Fleming. Edmund Fleming was born in the UK in 1835 and managed coke works for some 12 years. Edmund migrated to Australia in 1886 with his wife and four sons and worked in the Mt Pleasant colliery. In 1888 he was persuaded to become the manager of the new the Australian Coke Making Company’s works at Unanderra and brought that works into operation. In about 1890 he moved to the Mt Pleasant site where he established a small coke works, which was soon expanded with the help of his sons Henry, Frank and Edward. In 1910 the Figtree Bros established their new coke works at North Wollongong. Edmund recommended that his fifth and eldest son, Joseph who was the manager of a coke works in the UK, migrate to Australia to become the manager of the Federal Coke Works.
Edmund Fleming was known as the pioneer of Illawarra coke making, he died in 1910 but his sons carried on the family tradition for many more years.

The enormous by-products coke ovens plant at the BlueScope Steel’s Port Kembla works has been enlarged and modernized over the years since 1938; none of the original plant is left but it continues to make high quality coke with minimal environmental impact on the surrounding area.