

The primary metallic minerals include those of copper, tin, lead, zinc, iron, silver, gold, osmiridium, tungsten and nickel. The secondary deposits are those of tin, gold, and osmiridium. The non-metallic deposits include asbestos, bauxite, limestone, building stones, coal and oil shale.

Total recorded production from 1880 to 1944 amounts to £91,317,272.

The principal copper deposits, including the Lyell group with chalcopyrite-bornite and copper bearing pyrite, occur near the junction of the West Coast Range Conglomerate and intrusive porphyries.

Tin ore is obtained from both primary lodes including fissures, replacements and the "tin granites" of the north east, and alluvial deposits. Stannite is present in massive pyritic tin deposits in the north-western and western regions.

Silver-lead occurs chiefly as fissure lodes consisting of silver bearing galena, and sphalerite in a manganese-siderite gangue.

Zinc-lead ore occurs as complex sulphide ore-bodies.

Gold has been one of the principal mineral products but has declined in recent years and now ranks third in the mineral production of the State. The bulk of the gold is now recovered in the treatment of complex sulphide ores at Mt. Lyell and Read-Rosebery.

Osmiridium production has been derived almost entirely from alluvial fields, but irregular disseminations, in serpentine, have been discovered in three localities.

Both scheelite and wolfram deposits are worked in Tasmania.

Chrysotile, occurring as narrow veins in serpentine, is the only asbestos of economic importance.

Deposits of ferruginous bauxite, commercially suitable for the production of aluminium, exist.

Tasmania has very large resources of limestone which are widely distributed. They occur in all regions, but the Midlands, and are generally favourably situated regarding transport facilities. The Lower Palaeozoic limestones are of high metallurgical grade and occur in beds of considerable thickness. The Permo-Carboniferous limestones are generally less pure, with a silica content up to 20 per cent.

Many clay deposits are known, but await complete investigation. They are mainly of Tertiary to Recent Age, but beds also occur in the Triassic system.

Granite outcrops at many localities. Numerous textural varieties occur, but colours are confined to greys and red.

The coalfields of Tasmania occur as isolated and limited areas. The most important coal seams, are contained in the felspathic sandstone series of the Triassic system. Eight seams of the usual bituminous type have been recognised, varying from one foot to sixteen feet in thickness. Lignite or brown coal beds occur near the base of the Tertiary system, in the Launceston, Derwent and Macquarie Harbour lacustrine basins. They rarely reach a thickness of ten feet.

91

Extensive deposits of oil shale, principally of the Tasmanite variety occur as beds on the horizon of the Greta coal measures of New South Wales. Kerosene shales and cannel coals occur at Preolenna and pelionite in the Barn Bluff-Pelion area but reserves are small.

#### NORTH-WESTERN REGION.

The only producing tin mine is the famous Mt. Bischoff which has been operating over 70 years on deposits consisting of fissure veins, altered stanniferous porphyries, and tin-pyrite replacement ore-bodies. Similar replacement bodies occur at Cleveland.

In the Magnet district the silver-lead lodes are chiefly in ankeritised ultra-basic rocks and consist of galena and sphalerite in a carbonate gangue. At Round Hill flat pitching galena lodes occupy anticlinal saddles.

Copper ores occur in the Blythe River district from Rutherfords to the Copper King and at the Victory mine, at Arthur River. The Copper King is the only productive mine.

A very large scheelite body occurs at Grassy, King Island. Wolfram occurs in the Middlesex district. The principal mine is the Shepherd and Murphy at Moina, from which tin, wolfram and bismuth has been produced. Other mines are the Squib, All Nations and Iris.

Large deposits of magnetite occur in the Savage River district. The Blythe River-Natone iron deposits consist of irregular lenses of haematite.

The most important deposits of osmiridium occur at the Nineteen Mile Creek, Savage River, Bald Hill and Mount Stewart.

Bauxite exists at Myalla.

#### NORTHERN REGION.

Gold bearing quartz veins are important in this region; the chief localities are Beaconsfield, Lefroy, Alberton, Mathinna, Mangana and Mt. Victoria. The Tasmania mine, at Beaconsfield was the greatest producer, yielding approximately 854,600 oz. of gold. The Golden Gate was the most important mine in the Mathinna district. In the Lefroy district most of the mines were developed only to 400 ft. The most important alluvial field has been the Lisle Valley from which approximately 250,000 oz. have been won. Quantities of alluvial gold have been obtained at Mangana, Mathinna, Lefroy and Back Creek.

This region contains all the north-eastern tin fields from which the bulk of the State's tin production is derived. The Eriseis and Endurance Mines are the chief ones operating on the Ringarooma deep lead, while the Anchor Mine at Lottah is the most important one operating on the "tin granite" or quartz greisen lodes. The Storey's Creek and Aberfoyle mines, situated in the Avoca district produce both wolfram and tin concentrates.

An iron deposit occurs at Beaconsfield representing surface concentration from serpentine and containing an appreciable chromium content.

Oil shale occurs at Karoola.

Bauxite deposits occur at Rosevale and St. Leonards.

WESTERN REGION.

The West Lyell low grade copper deposits are mined by large scale open cut methods and treated locally for the production of electrolytic copper. The total production to the end of 1944 was 396,620 tons of copper, 15,366,738 oz. fine, silver and 488,439 oz. fine, gold. Copper ore also occurs at Jukes-Darwin, Lake Dora Red Hills-Murchison and the Nicholls Range.

Large reserves of the tin-pyrrhotite-pyrite ore-bodies exist in the Renison Bell-Stanley River districts but improved methods of mining and milling are necessary for their successful exploitation. The improved recovery of tin oxide from the sulphide ore-bodies is a metallurgical problem which awaits solution. The principal producer is the Renison Associated Tin Mine. In the Heemskirk district occur quartz-greisen, and quartz-tourmaline lodes and alluvial deposits including a deep lead at North Heemskirk. The Federation is the principal mine.

The only operating silver-lead mine is the Farrell Mine at Tullah and this was discovered as late as 1933. The most important districts have been those of Zeehan and Dundas. Numerous fissure-lodes occur in the former and consist of silver-bearing galena, and sphalerite in a manganese-siderite gangue. The principal mines were the Montana, Western, Zeehan and Silver Queen. The Dundas lodes include tetrahedrite as well as galena.

The most important deposits of zinc-lead ore are in the Read-Rosebery district.

These sulphide lodes consist of a fine-grain intimate admixture of zinc blende, pyrite and galena with minor quantities of carbonate and quartz as gangue minerals. They occur as replacements of sheared porphyries on the western side of an elongated belt of slates, occurring within the porphyries. Chief mines are the Rosebery and Hercules. Other smaller zinc-lead lodes are Koomya, Dalmeny and Ring P.A.

Nickel ores of importance occur only in the Dundas district. The ore consists of chalcopyrite, pyrrhotite and pentlandite, and is associated with ultra-basic rocks.

Asbestos is produced by the Tasmanian Asbestos Company in the Dundas district. Deposits also occur at Asbestos Point, Macquarie Harbour.

Small but important deposits of magnetite occur in the Comstock district near Zeehan.

MIDLANDS REGION.

Deposits of ferruginous bauxite occur at Ouse and Campbell Town. Collieries operate at Langloh and York Plains. "Lode" and alluvial osmiridium deposits occur at Adamsfield. Large deposits of limestone of metallurgical grade occur in the Junee district.

SOUTH-EASTERN REGION.

A red, coarse grained type of granite occurring at Coles Bay is quarried for building and ornamental stone.

Coal occurs in isolated areas from St. Albans-Llandaff-Mt. Paul to the Tasman Peninsula Coal fields.

Small deposits of bauxite occur in the vicinity of Swansea.

SOUTHERN REGION.

93.

At Ida Bay extensive deposits of limestone are quarried for use in carbide manufacture.

At Bridgewater Permo-Carboniferous limestone is burned for agricultural purposes.

Isolated coal areas exist from Sandfly to South-East Cape. The Sandfly Colliery being the only operating one.

Alluvial tin deposits occur in the Cox Bight-Ray River-Bathurst Harbour area.

*Q. J. Henderson*

*12.12.45*