The two principal minerals which are mined as ores of tungsten are scheelite (calcium tungstate $CaWO_4$) and Wolfram (iron-manganese tunstate $(FeMn)WO_4$). Deposits of these minerals have been found in Tasmania and several have been worked on a commercial scale.

SCHEELITE.

The only known deposit of scheelite occurs on King Island being situated at the mouth of Grassy River in the south-eastern part thereof.

The lodes are contained in meta-morphosed sedimentary rocks within a few chains of a body of intrusive granite.

The lode material consists essentially of garnet (usually in well formed crystals) showing a more or less defined banded structure. Other gangue minerals are quartz, epidote, calcite, pyroxene and actinolite. The metallic minerals are scheelite, molybdenite, pyrite and bismuth. The scheelite occurs as disseminations through the garnet formation and as pockets in quartz veins traversing the formation.

Where first opened up, the formation was 65 feet wide. The value of the ore was 1.69 per cent tungstic acid exclusive of the pockets in the quartz veins.

The formation was discovered about 1914 and the King Island Scheelite Co. N.L. was formed in 1916 to exploit it. This Company worked the mine until 1920, when, owing to a collapse in the market, operations ceased, and the mine is still idle. During the period 1917 to 1920, the Company produced 589 tons of scheelite with a value of £112,468 and paid £25,000 in dividends.

WOLFRAM

Wolfram occurs in practically all the tinfields of Tasmania, but the deposits of economic importance are restricted to the Avoca and Middlesex districts in the north-eastern and north-western parts of the State respectively.

Avoca District - The most important area in this district is that at Storey's Creek in which the mine of the same name is situated. There are two main lodes which traverse dark slates and quartzites. The main lode has a bearing of 335° and a dip of 37° to the west, while the No. 1 lode has a bearing of 350° and a dip of 20° to the west. The lodes range from 2 to 6 feet in width and have been mined for a length of many chains.

The lodes consist of reef quartz with wolfram, cassiterite and pyrite distributed erratically through them. The wolfram and cassiterite are present in approximately equal proportions and are both recovered. The separation is affected by means of magnetic separators and the marketable products contain 71 per cent and 73 per cent of tungstic oxide and tin respectively.

During the period from 1920 to 1927 inclusive, the production of the mine was, tin ore containing 725.280 tons of metallic tin with a value of £176,949, and 812.70 tons of wolfram with a value of £73,411.

Wolfram-cassiterite veins also occur in the Gipps Creek area seven miles south-west of Story's Creek area, but up till the present have not proved as important as those at Story's Creek.

Middlesex District - Numerous lodes containing cassiterite, wolfram, and bismuth occur in the Middlesex district. The most important are those contained in the Shepherd and Murphy Mine at Moina.

The country rock at this mine consists of quartzites, and garnet rock. At least seven mineral lodes traverse these rocks, but three of them have been proved to be the most important from the mining point of view. Some of the lodes have lengths ranging up to 1400 feet and they have been mined for lengths ranging up to 1000 feet. The widths range up to 30 inches, the average being 6 to 18 inches.

The minerals of ecomonic importance are cassiterite, wolfram, bismuthinite, bismutite, bismuth, the relative proportions of the first three being 20 : 12 : 3. The principal gangue minerals are quartz, fluospar, topaz, pinite and beryl. The economic minerals are obtained as concentrates which comprise a proportion in the vicinity of 1.66 and 1.787 of the ore.

The ore is treated by the ordinary methods of crushing and wet concentration supplemented by hand picking. The concentrates obtained are then treated in a magnetic separation plant.

Up till the end of September 1918 , 71,856.5 tons had been milled from which were obtained 802.50 tons of "firsts" 347.45 tons of "seconds", 64.95 tons of slimes, 26.75 tons of picked bismuth, and 3.25 tons of picked wolfram. Since 1918 the production has been small due largely to the destruction of the plant by fire.

TOTAL PRODUCTION

The total production of tungsten minerals has been as follows :-

Scheelite - 589.07 tons, with a value of £112,468.

Wolfram - 1823.742 tons with a value of £212,061.

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