

TASMANIA

TABLE OF CONTENTS

REPORT
 OF THE
 DIRECTOR OF MINES
 FOR
 YEAR ENDED 31st DECEMBER

1950

Presented to both Houses of Parliament by His Excellency's Command.



TASMANIA.

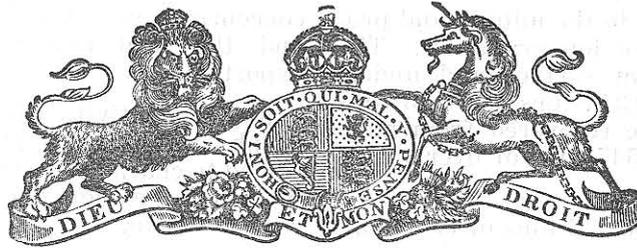
1951.

AIZAMPAI

TABLE OF CONTENTS.

	PAGE
Annual Report of the Director of Mines	3
Mineral Production	3
Aluminium	6
Quantity and Value of Minerals	7
Asbestos	8
Barytes	8
Bismuth	8
Coal	8
Cadmium	9
Cement, Carbide, and Limestone	9
Copper	9
Gold	10
Granite (Red)	10
Iron Pyrites	10
Kaolin	10
Limestone	10
Lead	11
Nickel	11
Ochre	11
Osmiridium	11
Scheelite	12
Shale	12
Silica	11
Silver	12
Talc	13
Tin	13
Wolfram	13
Zinc	13
Electrolytic Zinc Co. of A/sia Ltd., Production Return ...	14
Quantity and Value of Minerals Produced as at the 31st December, 1950	14
Value of Metals and Minerals Raised since 1880	15
Statistics of Mining Companies	15
Leases and Licences in Force	15
Mining Companies Registered	15
Total Revenue	15
Land and Water Applied for: Total Area and Sluiceways	16
Number and Area of Leases and Licences Issued	16
Net Revenue: Comparative Statement	16
Number and Area of Leases, 1936-50	17
Average Annual Prices of Minerals	18
Aid to Mining	19
Drilling	20
Departmental Activities	20
Drafting Branch	20
Appreciation of Services	21
Appendices	21
Report of Chief Geologist	22
Report of Chief Chemist and Metallurgist	24
Report of Chief Inspector of Mines	26
Accident Statistics	27
Report of Chief Inspector of Explosives	28
Reports of Inspectors of Mines and Explosives	28
Report of Mt. Cameron Water-race Board	42

TASMANIA



REPORT OF THE DIRECTOR OF MINES

Department of Mines,
Hobart.

SIR,

I HAVE the honour to present my report on the mining industry of the State for the year ended on the 31st December, 1950.

The total value, based on Australian prices, of the output of minerals and mineral products was £5,705,751, as compared with £3,974,379 for the previous year, representing an increase of £1,731,372. On the basis of Sterling metal prices, the composite gross value of the production was £7,677,831, the difference being due mainly to higher average Sterling prices for lead, tin and zinc.

There were marked risings in the production of coal, copper, gold, lead, limonite, kaolin, ochre, silica, silver, tin and zinc but there was a slight lowering in the output of tungsten minerals.

The number of men employed in mining, quarrying and metallurgical operations was 5892, as compared with 5659 for the previous year. The increase usefully contributed to the standing requirements for labour, for developmental and productive operations, but continued to be insufficient to satisfy the demand for labour for all purposes, including planned investigation and exploration of the mineral resources.

Coal mining continued to prosper. There were no industrial stoppages and the recorded output reached a new high-level of 222,351 tons. Although there has been no discovery of mineable seams of low-pressure gas and cooking coal, the progressively expanding use of native coals has again demonstrated their suitability as fuels for industrial and domestic purposes. Tests were made of sub-anthracite coal to ease a shortage of metallurgical coke, and research was continued in the coking properties of selected coals but there were no positive developments for normal usage.

The Cornwall Coal Company continued to function as the major producer. Operations at the three collieries provided an output of 143,542 tons of coal. Bord and pillar mining, pillar extraction, and developmental work resulted in a production of 100,105 tons at the Cornwall Colliery. At this mine, an electrically motivated continuous "miner," the product of Joy-Sullivan Machinery Company of America, was installed and intermittently operated. Mechanised and other coal-mining resulted in an output of 34,180 tons at the Mount Nicholas Coal Mine, and increased activities at the Duncan Colliery provided an output of 9257 tons of coal.

Troubled seam conditions, roof weighting and a landslide retarded the regular development of the Jubilee Coal Mine but coal-winning was more active and the production inclined to 22,806 tons.

At the Dalmayne Coal Mine, operations were confined to the lower section of the seam which provides a coal favoured as a fuel for railway engines. Small-scale mining resulted in an output of 2681 tons. The coal series in this region is troubled by small-area faulting and a forward production policy will be governed by economic appreciations in the development of the faulted fields of coal now being investigated.

The installation of electric drills to supplant hand-boring of coal faces and the innovation of mechanical haulage provided a progressive approach to greater production at the Fingal Coal Mine. There was a rising of 9885 tons in output, the recorded production being 22,252 tons.

There was no forward development in operations at the Stanhope Coal Mine. Mining conditions were troubled by faulting and roof weighting and production did not exceed 10,707 tons of coal.

Seam conditions remained constant at the Merrywood Colliery. As the result of provision of new road transport equipment, regular development of underground coal faces and more activity in opencast mining, the recorded output of coal inclined to 8208 tons.

Productive mining was more active at the Langlosh Coal Mine, Hamilton, and the output of coal rose to 8709 tons.

Sub-anthracite coal continued to be mined, at the Sandfly Colliery, for fuel requirements in hop-kiln practices. An output of 1402 tons resulted from small scale operations.

There was a slight rising in production from small-scale mining on the thin seam of coal at Spreyton. The recorded output was 2044 tons.

A party of miners re-opened the Silkstone coal series near Fingal and made preparations for future productive mining.

The output of copper was 7,241.46 tons, representing a substantial rising in production, as compared with the recorded output of 5228.69 tons for the previous year. The improvement was mainly the result of a longer smelting period and an increase in the throughput of copper-pyrite concentrate by the Mount Lyell Mining and Railway Company Limited.

The Mount Lyell Mining and Railway Company Limited continued as the major producer of copper and operations were again characterised

by progressive approaches to the mining and processing of large volumes of low-grade ore. The output of crude ore, from surface and underground mining, was 1,499,914 tons and 113 tons of copper precipitate were recovered from mine waters. In addition, 840,547 tons of overburden was stripped and dumped.

Selective milling of 1,498,976 tons of crude ore resulted in a recovery of 30,612 tons of copper-pyrite concentrate and 60,888 tons of iron-pyrite concentrate.

As the result of an improvement in the effective period of smelting, 29,403 tons of copper-pyrite concentrate and 112 tons of copper precipitate were smelted for a recovery of 6951 tons of blister copper. The blister copper was processed at the electrolytic refinery and yielded 6898 tons of cathode copper. The cell residue, containing 23,994 oz. of silver and 4552 oz. of gold, was exported for treatment.

A quantity of 51,105 tons of iron-pyrite concentrate was exported to the mainland for acid manufacture. Export disabilities have resulted in the cumulative stock-piling of a large volume of pyritic concentrate but wharf works are now in progress at Regatta Point for the purpose of increasing the export of pyrites to ease the problem of importations of elemental sulphur from sources exterior to the Commonwealth.

It is significant that, since the inception of the Company, the recorded production has been 438,766 tons of copper, 15,517,670 oz. of silver and 516,459 oz. of gold and that £6,982,403 has been paid in dividends.

The balance of the copper was contained in copper-pyrite concentrate recovered from the selective milling of copper-bearing zinc-lead sulphide ores mined by the Electrolytic Zinc Company of Australasia Limited at the Hercules and Rosebery Mines on the West Coast.

The Electrolytic Zinc Company of Australasia Limited remained in continuous operation, at Risdon, in the processing of zinc calcines imported from the mainland and arising from the calcination of zinc concentrates recovered from the selective milling of Tasmanian ores.

Production from imported calcines was 83,652 tons of zinc, valued at £A3,940,356; 233,4015 tons of cadmium, valued at £A381,499; and 15,9683 tons of cobalt oxide, valued at £A8339. Zinc concentrates from Tasmanian ores, actually calcined and processed, returned 23,421 tons of zinc, 44 tons of cadmium, 958 tons of lead and 116,491 oz. of silver.

The manufacture of sulphuric acid was continued and some progress was made in the project for the future production of sulphate of ammonia.

The Tasmanian ores resulted from the mining of zinc-lead ore bodies at the Rosebery and Hercules Mines on the West Coast, where 490 men were employed in mining and milling operations. The combined quantity of ore mined and milled was 159,809 tons. Selective milling resulted in the recovery of 48,558 tons of zinc concentrate, 10,470 tons of lead concentrate, and 3794 tons of copper concentrate. The recoverable quantity of metallics was fixed at 23,213.72 tons of zinc, 7677.23 tons of lead, 343.46 tons of copper, 43.70 tons of cadmium, 10,584.92 oz. of gold, and 990,739.25 oz. of silver. As formerly, the zinc

concentrate was railed to Risdon for processing and the lead and copper concentrates were exported.

Regional activities, in the form of geological and geophysical surveys and diamond drilling, continued to characterise the interest of the Company in mineral exploration but no major discovery was recorded.

A rising of 852.647 tons in the output of lead restored production to the 1942-43 level and verified the recorded opinion that a succession of lowering outputs was not indicative of depletion to points of exhaustion of known ore occurrences but that the productive potential was greater than the output and that, with favourable metal prices and availability of labour and equipment, developments could restore the production of silver-lead ores and concentrates to the higher levels of earlier years.

Operations by the Electrolytic Zinc Company of Australasia Limited, at the Rosebery and Hercules Mines, accounted for the greater portion of the total output of 8726.281 tons of lead and although a rising in production by that company influenced the overall increase it was significant that smaller producers materially contributed to the total output and that developments at the Oceana Mine, Montana Silver-lead Mine and the Farrell Mine provide an expectation of augmented productive mining in future years.

Zeehan Mines Proprietary Limited was constituted, acquired the holdings of Zeehan Explorations at Zeehan and continued with the sinking of the circular concrete-lined shaft and other development work for the future productive mining of silver-lead ore bodies in the Oceana area. The shaft was deepened to 354 feet, No. 2 level was opened at 300 feet and the ore bodies were cross-cutted. Lode developments on the Nos. 1 and 2 levels have been encouraging.

At the Montana Silver-Lead Mine, Zeehan, the Company resumed operations from the tribute party and proceeded with a programme of unwatering and conditioning the Main Shaft workings and the installation of milling units for the gravity stripping of silver-lead concentrates, with consideration for the ultimate installation of flotation units to provide for maximum recoveries. Pending planned developments, the Company continued with small-scale operations and produced 172.777 tons of hand-picked ore and jig-concentrate, containing 97.348 tons of lead and 15,117.6 oz. of silver.

The Lead-Nickel Company was unable to finance a more appropriate approach to productive mining at the Great South Comet Mine, Dundas, and terminated its activities. One lot of 5.358 tons of concentrate, containing 3.611 tons of lead and 265.757 oz. of silver, was recovered by gravity concentration of mined ore.

Encouraged by favourable export metal prices and with an impressive demand for lead and zinc ores, several parties were engaged in miscellaneous operations in the Zeehan and Dundas areas. There were no major developments in connection with these activities, which accounted for 97.12 tons of zinc-lead and 13 tons of silver-lead hand-picked ore and concentrates. The former contained 16.3 tons of zinc, 37.323 tons of lead 4113.58 oz. of silver and the latter returned 370.835 oz. of silver and 8.484 tons of lead.

The Farrell Mining Company mined and milled 6902 tons of ore for a recovery of 1310 tons of silver-lead concentrate, containing 894 tons of lead and 94,040 oz. of silver. A programme of exploration was prosecuted in the search for new ore bodies and there were developments, in the southern workings, of a sufficiently encouraging nature to merit a forward plan in mining activities. Developments were related to the undepleted zone between the old and new workings and the expectation is that ore locations will materially enhance the productive future of the mine.

The West Mount Claude Mining Syndicate was engaged in the exploration of an occurrence of galena in the locality of the old Round Hill Mine. A small milling plant was installed and 200 tons of ore, from these operations, was treated for recovery of concentrate containing 7·409 tons of lead and 507·655 oz. of silver. There was no development of significance but exploration is to be continued.

Metallic tin, in the product from lode and alluvial mining, was 684·948 tons, as compared with 631·231 tons for the previous year. Risings in tin prices continued to favour operations, but with the exception of an increased output at principal mines, the overall production at small mines and by miscellaneous operators was less. Labour shortages and adverse seasons in the supply of water for hydraulic mining contributed to production depressions but there were no developments to provide for the opening up of productive activities of major magnitude.

Successive declines in production since 1940, when the output was 1430·198 tons and the absence of new productive projects of major magnitude have caused concern both in the extent of tin-mining activities and in the supply of an essential metal. Past surveys have provided informative data upon the geology of the tin-fields, with their lode and alluvial occurrences, but a revisionary survey is planned to provide a further appreciation of tin potentialities for the purpose of exploration in the search for new deposits and in outlining deposits capable of being brought into useful production.

Aberfoyle Tin N.L., operating on a multiple lode series; Renison Associated Tin Mines, mining and milling tin-pyrite ores; Briseis Tin N.L., sluicing relatively shallow ground; Endurance Tin Mining Company, sluicing relatively deep ground; and Dorset Tin Dredge, dredging river flats, were the principal producers and accounted for an output of 575·3915 tons of metallic tin.

Goshen Tin Mines N.L., continued with the sluicing of areas of alluvial ground at St. Helens, and underground mining was pursued on the wolfram-tin lodes at the Storey's Creek Mine. The output of concentrate from these operations contained 13·7288 tons of metallic tin.

Small mines and miscellaneous parties were mainly engaged in the sluicing of tin-alluvials. Productive activities were less but these operations usefully contributed 95·8277 tons to the total output of metallic tin.

Aberfoyle Tin N.L., continued its progressive policy of developing and mining the multiple tin-wolfram lode series at Rossarden. Ore mined from Nos. 5 and 6 levels contributed to a depletion of upper level reserves but developments on the Nos. 7 and 8 levels appreciated the total reserves of positive and probable ore and added to the pro-

ductive future of the mine. The output of finished products, from the mining and milling of 31,542 tons of ore, amounted to 443·2763 tons of tin concentrate, containing 322·1807 tons of metallic tin, and 86·0321 tons of wolfram concentrate. Plant innovations were mainly related to new mine winding machinery and the installation of an auxiliary power generating unit.

Bucket-dredging was continued on the Dorset Flats at South Mount Cameron. An overhaul of plant and replacement of the bucket-band lowered the effective operating period but the throughput inclined to 1,793,000 cubic yards of ground. The overall grade was less and the recovery of concentrate reduced to 109·59 tons, containing 80·8422 tons of metallic tin and 372·82 oz. of gold.

Mechanically controlled sluicing of relatively deep alluvials again characterised the activities of the Endurance Tin Mining Company at South Mount Cameron. The throughput of ground reduced to 348,600 cubic yards but the overall grade was higher and the production of concentrate increased to 119·8941 tons, containing 86·3159 tons of metallic tin. Favourable results accrued from boring along the western trend of the tin-lead and added to the productive future of the mine.

Briseis Tin N.L., remained in constant operation on remnant ground along the course of the Cascade lead at Derby. The volume of ground sluiced lowered to 172,000 cubic yards but the average grade was higher and, together with a small quantity of tin-oxide from the treatment of old tailings, resulted in a recovery of 57·1292 tons of concentrate, containing 39·7227 tons of metallic tin. The enterprise of this Company, in acquiring the holdings of Briseis Consolidated and in the resumption of sluicing, has materially contributed to the production of essential tin to local employment and to the stability of the Derby township.

Following a disposal of plant and buildings, by the Commonwealth, and a reversion of leases and water rights to the State, a forward move was made to enable parties of miners to return to mining at the Mount Bischoff Tin Mine. Plans were formulated for reserving the area under the provisions of the Aid to Mining Act, for implementing a group system of tributing and for imposing the payment of a fair royalty. Rising metal prices and confidence in the productive capacity of undepleted ore bodies induced the formation of several tribute parties and an early commencement of operations is expected. The State purchased the hydro-electric power scheme and transferred it to the Hydro-Electric Commission in order to retain the development of power for mining and township purpose. Compressor and pumping units were purchased from the Commonwealth and held on location for the service of tribute parties. It is expected that this forward policy will usefully contribute to the production of tin, ensure employment for several miners and preserve the Waratah township against near-extinction.

The Mount Cameron Water Race Board continued to function in supplying water to parties engaged in the sluicing of tin-alluvials in the Gladstone district, but there was no material improvement in the output of tin-oxide and it was again necessary for the Government to provide finance to meet a deficit in the working of the system.

The Ringarooma-Cascade Water Board functioned to the extent necessary in controlling the water system purchased from Briseis Consolidated N.L., for mining, agricultural and township purposes. The Cascade section was occupied by Briseis Tin N.L. at a flat rental, and used in rehabilitating productive mining. Parties of miners, at Branhholm, and the townships of Derby and Branhholm were supplied with water from the Ringarooma Race. On two occasions, tenders were invited for the construction of a race, from the Morning Star Dam on the Cascade River to Branhholm, to service high-level tin-ground but no tender was received and the project could not be matured.

Renison Associated Tin Mines continued with the mining and milling of tin-pyrite ores at Renison Bell. Production of ore was mainly related to opencutting, but 1142 tons accrued from stoping and development work provided 387 tons. The approximate volume of ore mined was 11,277 tons and it was recorded that 10,741 tons was milled for a recovery of 68.66 tons of tin concentrate, containing 46.33 tons of metallic tin. Geophysical surveys have traced anomalies of sufficient significance to merit a programme of diamond drilling in areas exterior to the actual producing sections.

The production of tungsten minerals remained at a high level, the combined output of scheelite and wolfram concentrate being 991.633 tons.

Shortage of labour hampered operations at the Storey's Creek Mine, the major producer of wolfram, and planned programmes of development and reconstruction could not be matured in consequence. Productive mining was confined to 1A Lode on Nos. 1, 2, 3 and 4 levels, and 7620 tons of ore was mined and milled for a recovery of 113.85 tons of wolfram concentrate and 11.85 tons of tin concentrate, the latter containing 7.63 tons of metallic tin. Lode developments maintained their productive potential. A housing scheme was implemented to accommodate employees necessary for augmenting productive activities.

In addition to the 86.0321 tons, accruing from operations at the Aberfoyle Tin Mine, small quantities of wolfram resulted from miscellaneous activities in the Moina and St. Helens districts but there was no major development in connection with these operations.

The rising demand for wolfram revived interest in production possibilities at the Shepherd and Murphy Mine at Moina and negotiations were commenced with a view of re-opening the old workings.

Progressive quarrying and milling of ore continued to characterise activities by King Island Scheelite Limited on King Island. The throughput of ore was 157,414 tons and 791.53 tons of finished scheelite concentrate was recovered. In addition, 142,626 tons of overburden was stripped and 11,639 tons of waste rock was removed from

the ore body. After allowing for depletion, by extraction, proved ore reserves were regioned in the order of 2,629,446 tons.

Production of gold inclined to 15,577.768 oz. as the result of risings in the output of copper and zinc-lead products, containing gold, and a higher recovery of gold from the dredging of gold-bearing stanniferous alluvials, all of which accounted for 15,534.341 fine ounces. The balance of the output accrued from small-scale operations on auriferous alluvials throughout the State.

There were no new developments in the mining of osmiridium and production remained at a low level. The recorded output of 46.141 oz. resulted from the working of alluvial ground at Adamsfield.

The Australian Commonwealth Carbide Company, at Electrona and Ida Bay, and the Goliath Portland Cement Company at Railton, were the major producers and users of limestone in the manufacture of calcium carbide and cement.

The recorded production of limestone was 157,252 tons, of which 127,334 tons were used in the manufacture of carbide and cement. Metallurgical, agricultural and building industries absorbed 29,918 tons in crushed, pulverised and lime forms.

Iron ore, to an amount of 1207 tons was quarried and used in the manufacture of cement.

Limonite was used in gas purification processes. The quantity quarried and marketed was 366.5 tons.

Production of ochre, for pigments, increased to 48 tons.

There was a rising from 7316 to 10,199 tons in the output of kaolins and clays for industrial uses, including the manufacture of paper but excluding the making of bricks, tiles, pipes and other earthenwares.

ALUMINIUM.

The Commonwealth-State project for the production of ingot aluminium continued to rest with a Commission and further progress was made in matters related to the establishment of the industry at Bell Bay. Site preparation and foundation works were well advanced and substantial orders were placed for plant and building structures, designed for the nature and magnitude of operations and approved by the British Aluminium Company, the technical consultants to the Commission. Initial work was commenced in the development of the hydro-electric power scheme at Trevallyn and in the establishment of the North Esk regional water scheme to ultimately service the aluminium works with power and water. A housing scheme was commenced for the accommodation of employees at George Town.

PRODUCTION STATISTICS.

Statistics of production and related matters, for the year and for previous years, are submitted in the customary tabulated form.

QUANTITY AND VALUE OF MINERALS.

STATISTICS RELATING TO THE MINING INDUSTRY FOR THE YEAR ENDING 31ST DECEMBER, 1950.

Mineral.	MINING DIVISIONS.					Total Quantity.	VALUE.	
	Northern and Southern.	Eastern.	North-Eastern.	North-Western.	Western.		Sterling.	Australian Prices.
							£S.	£A
Bismuth (tons)	....	....	....	0.0039	....	0.0039	6	8
Cadmium (tons)	....	....	....	....	43.70	43.70	....	75,334
Coal (tons)	10,111	210,196	....	2,044	....	222,351	....	231,599
Copper (tons)	....	....	....	....	7,241.46	7,241.46	1,308,478	1,378,258
Carbide, Cement, and Limestone (tons)	17,872	....	....	110,445	4,770	133,087	....	578,480
Gold (fine oz.)	21.273	....	376.148	....	15,180.367	15,577.788	193,164	241,330
Granite (Red) (tons)	....	93	....	....	....	93	....	1,045
Kaolin (tons)	1,923	2,572	5,704	....	....	10,199	....	33,996
Lead (tons)	....	....	....	7.409	8,718.872	8,726.281	951,574	400,395
Limonite (tons)	....	....	....	366.5	....	366.5	....	715
Ochre (tons)	....	....	....	48	....	48	....	95
Osmiridium (oz.)	46.141	....	....	....	....	46.141	1,339	1,673
Pyrites (tons)	....	....	....	....	51,105	51,105	....	101,876
Scheelite (tons)	....	....	....	791.53	....	791.53	465,296	543,139
Silica (tons)	....	....	....	504	6,939	7,443	....	3,572
Silver (fine oz.)	....	....	....	507.375	1,129,332.659	1,129,840.034	304,814	376,236
Tin (tons)	0.947	357.563	261.469	16.098	48.871	684.948	505,668	501,645
Wolfram (tons)	....	199.887	....	0.216	....	200.103	114,083	103,034
Zinc (tons)	....	....	....	....	23,230.024	23,230.024	2,806.697	1,133,321
Total Value with Sterling Metal Prices	....	....	....	....	....	....	£7,677,831	
Total Value with Australian Prices	....	....	....	....	....	....	£A5,705,751	
Average Number of Men Employed	2,477	583	235	439	2,158	5,892	....
Limestone (tons)	19,071	....	....	108,263	....	127,334	Used in the manufacture of Carbide and Cement.	
Iron Ore (tons)	....	....	....	1,207	....	29,918	Used for other purposes. Total Limestone 157,252 tons. Used in the manufacture of Cement.	

The Electrolytic Zinc Company of Australasia Limited recovered 60,231 tons of zinc valued at £2,769,771 Australian; 179.4015 tons of cadmium valued at £303,317 Australian; and 15.9683 tons of cobalt oxide valued at £8339 Australian from other than Tasmanian ores and employed an average of 2010 men at Risdon.

1951

(No. 55.)

ASBESTOS.

RETURN showing the Quantity and Value of Asbestos produced from 1899 to 1950 inclusive.

Year.	Quantity.	Value.
	Tons.	£
1899.....	200	363
1900.....	128	113
1901.....	46·5	45
1902-1915.....	—	—
1916.....	15	30
1917.....	271	271
1918.....	2854	5008
1919.....	51	1275
1920-1936.....	—	—
1937.....	2	29
1938.....	4·25	68
1939-1940.....	—	—
1941.....	3·5	120
1942.....	7	20
1943.....	18·25	365
1944.....	102·99	2242
1945.....	276·36	7193
1946-1950.....	—	—
Total.....	3979·85	£17,142

BARYTES.

RETURN showing the Quantity and Value of Barytes produced to 31st December, 1950.

Year.	Quantity.	Value.
	Tons.	£
Prior to 1916.....	50	100
1916.....	83	359
1917.....	52	234
1918.....	217	977
1919.....	558	1886
1920.....	1029	4116
1921-1924.....	—	—
1925.....	3·5	16
1926-1928.....	—	—
1929.....	9·5	24
1930-1932.....	—	—
1933.....	5	15
1934-1935.....	—	—
1936.....	33	66
1937.....	76	174
1938-1939.....	—	—
1940.....	36	58
1941.....	11·2	43
1942-45.....	—	—
1946.....	33	70
1947-1950.....	—	—
Total.....	2196·2	£8138

BISMUTH.

RETURN showing the Quantity and Value of Bismuth produced from 1904 to 1950 inclusive.

Year.	Quantity.	Value.
	Tons.	£
1904.....	·3	15
1905.....	3·5	800
1906.....	·3	24
1907.....	·175	27
1908.....	3·75	462
1909.....	2·9	980
1910.....	10·70	4249
1911.....	14·395	5758
1912.....	7·59	2646
1913.....	5·08	1627
1914.....	5·619	1666
1915.....	5·5	1203
1916.....	3·51	1059
1917.....	4·212	895
1918.....	4·608	1038
1919.....	1·77	573
1920.....	·10	9
1921.....	·05	21
1922-1929.....	—	—
1930.....	·97	475
1931.....	1·75	1015
1932.....	1·02	541
1933.....	1·32	705
1934.....	—	—
1935.....	·328	146
1936.....	—	—
1937.....	·216	78
1938.....	·871	396
1939.....	·623	296
1940.....	·565	270
1941.....	·032	16
1942.....	·02	10
1943.....	·309	241
1944.....	·151	126
1945.....	·529	373
1946.....	·392	293
1947.....	·399	305
1948.....	·078	88
1949.....	—	—
1950.....	·0039	6
Total.....	83·6359	£28,432

COAL.

RETURN showing the Quantity and Value of Coal raised to 31st December, 1950.

Year.	Quantity.	Value.
	Tons.	£
Previous to 1880.....	145,114	115,000
1880 to 1904 inclusive.....	828,370·5	710,952
1905.....	51,993	44,194
1906.....	52,895·75	44,962
1907.....	58,891	50,057
1908.....	61,067·75	51,907
1909.....	66,161·75	56,237
1910.....	82,445	48,609
1911.....	57,067	26,214
1912.....	53,560	24,568
1913.....	55,043	25,367
1914.....	60,794	27,853
1915.....	64,536·25	30,418
1916.....	55,575	27,736
1917.....	63,412	38,673
1918.....	60,163	37,676
1919.....	66,253	47,004
1920.....	75,429	64,005
1921.....	66,476	63,446
1922.....	69,238	61,016
1923.....	80,718	70,797
1924.....	75,988	66,555
1925.....	81,698	70,424
1926.....	102,358	90,401
1927.....	112,056	99,802
1928.....	128,500	106,558
1929.....	130,291	105,877
1930.....	138,716	110,253
1931.....	123,828	98,004
1932.....	111,853	86,733
1933.....	116,573	85,848
1934.....	113,633	81,262
1935.....	123,714	86,134
1936.....	132,264	92,269
1937.....	91,121	66,883
1938.....	83,753	61,991
1939.....	99,392	74,460
1940.....	83,136	63,688
1941.....	109,714	85,311
1942.....	134,442	108,241
1943.....	145,882	117,361
1944.....	143,641	122,673
1945.....	149,077	125,719
1946.....	158,751	137,736
1947.....	167,140	154,725
1948.....	179,393	177,65
1949.....	181,618	181,89
1950.....	222,351	231,59
Total.....	5,616,086	£4,556,747

COPPER.

The production for the year was 7241·46 tons, valued at £1,308,478.

RETURN showing the Quantity and Value of Copper in Blister Copper, Copper Ore, and Zinc Lead Ore during the Years 1919 to 1950 inclusive.

Year.	In Zinc Lead Ore.		In Blister Copper.		In Copper Ore.		Total	
	Qty.	Value.	Q'ty.	Value.	Q'ty.	Value.	Q'ty.	Value.
	Tons.	£	Tons.	£	Tons.	£	Tons.	£
1919.....	...	...	5014	503,977	304	4651	5318	508,628
1920.....	...	...	4791	528,177	75	60	4791·75	528,237
1921.....	...	...	6171	462,876	9·843	287	6180·843	463,163
1922.....	...	...	5616	391,535	—	—	5616	391,535
1923.....	...	...	6063	435,282	1·7	131	6064·7	435,413
1924.....	...	...	6698	457,386	—	—	6698	457,386
1925.....	...	...	6539	436,661	—	—	6539	436,661
1926.....	...	...	6915	454,854	—	—	6915	454,854
1927.....	...	...	5811	362,988	—	—	5811	362,988
1928.....	...	...	6421	444,802	—	—	6421	444,802
1929.....	...	...	8690·01	740,985	—	—	8690·01	740,985
1930.....	...	...	9940·68	620,578	—	—	9940·68	620,578
1931.....	...	...	9833·1	416,309	—	—	9833·1	416,309
1932.....	...	...	10,995	399,646	3·2	116	10,998·2	399,762
1933.....	...	...	10,734	395,109	5	177	10,739	395,286
1934.....	...	...	8,202	267,126	6·5	216	8208·5	267,342
1935.....	...	...	13,036	464,007	—	—	13,036	464,007
1936.....	...	...	13,040	556,734	—	—	13,040	556,734
1937.....	...	...	12,382	757,311	37·92	2021	12,419·92	759,332
1938.....	...	...	12,700·62	578,893	28·802	1345	12,729·422	580,238
1939.....	...	...	13,453	668,561	—	—	13,453	668,561
1940.....	...	...	11,570·2	717,356	1·8	108	11,572	717,464
1941.....	...	...	11,642·1	721,810	2·834	175	11,644·934	721,985
1942.....	529·58	32,827	11,255·132	697,818	·478	30	11,785·09	730,675
1943.....	464·38	28,791	10,684	662,408	—	—	11,148·38	691,199
1944.....	381·75	23,666	9831	609,522	—	—	10,212·75	633,188
1945.....	275·51	17,080	7197	446,214	—	—	7472·51	463,294
1946.....	245·88	18,714	9134	697,498	—	—	9379·88	716,212
1947.....	286·31	37,726	7666·733	1,019,925	1·267	174	7954·31	1,057,825
1948.....	248·10	33,275	6326	848,088	—	—	6574·1	881,363
1949.....	305·69	140,356	4923	695,009	—	—	5228·69	735,365
1950.....	...	...	...	...	...	...	7241·46	1,308,478
Total.....	2737·20	232,435	273,274·475	17,459,445	404·094	9491	283,657·229	19,009,849

The Mount Lyell Mining and Railway Company Limited.
Return for the Calendar Year 1950.

Ore and metal-bearing material smelted:—	Tons (Dry).
Source of Material.	
Ore:—From the Company's North Lyell Mine	1,262
Concentrates:—From the Company's North Lyell Mine, Royal Tharsis Mine, and West Lyell Mines ore	20,844
Precipitate	106
Total	22,212

Source of Material.	Tons (Dry).
Limestone delivered at works (tons)	4,770
Silica delivered at works	6,939
Pyritic concentrate shipped from Regatta Point (tons), approx. value £A109,876	51,105
Blister copper produced, 6951 tons, containing:	
Copper (tons) 6,898	Approximate value £A1,366,127
Silver (oz.) 23,994	
Gold (oz.) 4,552	
Average number of men employed—	
Mining Department—At the Company's	
North Lyell Mine	—
Ditto, Royal Tharsis Mine	87
Ditto, West Lyell Mines	515
Miscellaneous	155
	757
Reduction Works Dept. (including Lake Margaret)	642
Railway Department—Mount Lyell Railway	96
Total	1,495

Copper produced from the inception of the Company to the 31st December, 1950, 438,766 tons.

Silver produced from the inception of the Company to the 31st December, 1950, 15,517,670 oz. (fine).

Gold produced from the inception of the Company to the 31st December, 1950, 516,459 oz. (fine).

Dividends paid during the year, £77,500

Dividends paid from the inception of the Company to the 31st December, 1950, £6,982,403.

CADMIUM.

The quantity recovered was 43·70 tons, valued at £75,334, compared with 37·96 tons, valued at £43,841 for 1949.

RETURN showing the Quantity and Value of Cadmium recovered for the Years 1936 to 1950.

Year.	Quantity.	Value.
	Tons.	£
1924-1936	114·3057	31,713
1937	45	18,161
1938	49	18,636
1939	48	16,249
1940	50	18,242
1941	47·07	21,087
1942	41·39	18,462
1943	40·34	18,072
1944	39·68	17,840
1945	29·38	13,161
1946	33·74	15,116
1947	34·53	15,470
1948	34·22	15,333
1949	37·96	43,841
1950	43·70	75,334
Total	688·3157	£356,717

CEMENT, CARBIDE, AND LIMESTONE.

The combined value of output from these three industries amounted to £578,480, as compared with £496,519 for 1949.

GOLD.

The quantity won was 15,577·788 oz. fine valued at £193,164, as compared with 12,151·731 oz., valued at £122,447 for 1949.

RETURN showing the Quantity and Value of Gold won to 31st December, 1950.

Year.	Quantity.	Value.
	Oz.	£
Previous to 1867 and up to 1879 inclusive.....	131,583	512,557
1880 to 1903 inclusive	1,265,836·95	4,905,706
1904	65,921	280,015
1905	73,540·5	312,380
1906	60,023·4	254,963
1907	65,354·25	277,607
1908	57,085·1	242,482
1909	44,777·366	190,201
1910	37,048·053	157,370
1911	31,100·873	132,108
1912	37,973·252	161,300
1913	33,400·457	141,876
1914	26,243·453	111,475
1915	18,547·338	78,784
1916	15,790·096	67,072
1917	14,496·464	61,577
1918	10,528·930	44,724
1919	7,086·470	32,650
1920	6,246·192	29,796
1921	5,340·094	28,395
1922	3,431·486	15,998
1923	3,684·124	16,639
1924	4,625·600	21,563
1925	3,523·870	15,037
1926	4,222·748	17,936
1927	4860·7	20,649
1928	3603·43	15,306
1929	5596·88	23,772
1930	4467·2	18,975
1931	4759·31	22,118
1932	5937·17	34,943
1933	6672·74	41,783
1934	5612·26	38,930
1935	8342·68	59,255
1936	17,600·47	123,386
1937	20,276·31	143,138
1938	22,199·961	158,022
1939	19,984·066	154,471
1940	19,170·968	161,035
1941	19,908·498	167,229
1942	18,353·364	154,168
1943	17,245·253	144,860
1944	16,653·38	139,586
1945	13,049·804	111,452
1946	15,361·987	132,296
1947	15,051·185	129,619
1948	12,904·062	111,127
1949	12,151·731	122,447
1950	15,577·788	193,164
Total	2,333,362·258	10,532,242

GRANITE (RED).

RETURN showing the Quantity and Value of Red Granite produced during the Years 1935 to 1950 inclusive.

Year.	Quantity.	Value.
	Tons.	£
1935.....	284	1432
1936.....	568	3209
1937.....	187	923
1938.....	173	885
1939.....	246	1300
1940.....	330	2031
1941.....	658·5	5661
1942.....	355	2937
1943-45.....	...	...
1946.....	60	600
1947.....	209	2211
1948.....	159	1710
1949.....	61	673
1950.....	93	1045
Total.....	3883·5	24,617

IRON PYRITES.

RETURN showing the Quantity and Value of Iron Pyrites produced during the Years 1915 to 1950 inclusive.

Year.	Quantity.	Value.
	Tons.	£
1915.....	12,835·59	8945
1916.....	14,005·084	13,597
1917.....	7,685·549	7137
1918.....	5,105·600	4667
1919.....	3,456·95	4288
1920.....	4,440	7346
1921.....	606·5	2579
1922.....	8,276	18,620
1923.....	11,882	26,737
1924-1930	—	—
1931.....	506·7	253
1932.....	274	150
1933.....	1498	1498
1934.....	12,030	12,030
1935.....	25,555	25,555
1936.....	34,071	34,071
1937.....	40,630	43,723
1938.....	50,277	62,845
1939.....	54,229	67,786
1940.....	37,819	47,274
1941.....	40,076	50,093
1942.....	34,449	43,061
1943.....	33,203	41,504
1944.....	29,136	36,419
1945.....	40,168	50,208
1946.....	37,294	49,145
1947.....	42,329	59,260
1948.....	44,263	61,968
1949.....	47,922	91,066
1950.....	51,105	101,876
Total.....	725,127·973	£973,701

KAOLIN.

RETURN showing the Quantity and Value of Kaolin produced during the Years 1940 to 1950 inclusive.

Year.	Quantity.	Value.
	Tons.	£
1940.....	835·5	988
1941.....	1130	1428
1942.....	1098	1334
1943.....	1655	2438
1944.....	4193·25	4778
1945.....	5718	11,562
1946.....	6330·5	11,886
1947.....	3076	8800
1948.....	6741	21,955
1949.....	7316	24,621
1950.....	10,199	33,996
Total.....	48,292·25	123,786

LIMESTONE.

RETURN showing the Quantity and Value of Limestone produced during the Years 1919 to 1936 inclusive

Year.	Quantity.	Value.
	Tons.	£
1919-1922 inclusive	200,454	199,470
1923.....	100,113	122,428
1924.....	146,140	146,140
1925.....	124,670	124,670
1926.....	153,707	153,219
1927.....	169,522	167,373
1928.....	98,654	79,050
1929.....	68,176	66,597
1930.....	100,251	94,977
1931.....	55,268	49,490
1932.....	90,335	18,725
1933.....	110,347	33,048
1934.....	174,767	44,877
1935.....	254,438	68,367
1936.....	262,101	71,243
Total.....	2,108,943	£1,439,674

LEAD.

The output was 8726·281 tons, valued at £951,574, as compared with 7873·634 tons, valued at £796,701 for 1949.

RETURN showing the Quantity and Value of Lead included in Silver Lead during the Years 1919 to 1950 inclusive.

Year.	Quantity.	Value.
	Tons.	£
1919-1924.....	21,918·625	639,592
1925.....	5525·99	197,452
1926.....	5892·58	183,167
1927.....	5583·12	135,403
1928.....	4786·78	101,616
1929.....	5983·07	138,793
1930.....	4237·84	77,590
1931.....	2189·47	29,024
1932.....	2694·06	32,637
1933.....	2644·12	30,987
1934.....	1507	16,723
1935.....	1488	21,390
1936.....	7563·04	134,413
1937.....	9116·62	212,492
1938.....	10,652·21	163,102
1939.....	11,020·96	173,670
1940.....	13,550·85	338,771
1941.....	11,753·47	293,837
1942.....	9360·42	234,011
1943.....	8632·72	215,817
1944.....	8226·5	205,661
1945.....	6298·44	157,459
1946.....	6890·58	340,509
1947.....	7719·299	660,861
1948.....	7327·661	697,194
1949.....	7873·634	796,701
1950.....	8726·281	951,574
Total.....	199,163·340	£7,180,446

NICKEL.

RETURN showing the Quantity and Value of Nickel produced from 1927 to 1950 inclusive.

Year.	Quantity.	Value.
	Tons.	£
1927-1931.....	193·6	33,162
1932.....	0·55	136
1933.....	8·65	1948
1934-37.....	—	—
1938.....	19·75	3604
1939-50.....	—	—
Total.....	222·55	£38,850

OCHRE.

RETURN showing the Quantity and Value of Ochre produced during the Years 1918 to 1950 inclusive.

Year.	Quantity.	Value.
	Tons.	£
1918-1924.....	134	306
1925.....	—	—
1926.....	38	69
1927-1939.....	—	—
1940.....	3·5	9
1941.....	—	—
1942.....	21	53
1943.....	380	1681
1944.....	74·5	293
1945.....	66	191
1946.....	255	437
1947.....	395	405
1948.....	340	340
1949.....	21·25	67
1950.....	100·5	200
Total.....	1828·75	3991

OSMIRIDIUM.

The quantity of metal won during the year was 46·141 oz., valued at £1339, as compared with 39·300 oz., valued at £914 for 1949.

RETURN showing the Quantity and Value of Osmiridium produced during the Years 1910 to 1950 inclusive.

Year.	Quantity.	Value.
	Oz.	£
1910.....	120	530
1911.....	271·88	1888
1912.....	778·77	5742
1913.....	1261·65	12,016
1914.....	1018·83	10,076
1915.....	247·048	1581
1916.....	222·150	1899
1917.....	332·079	4898
1918.....	1606·743	44,833
1919.....	1668·715	39,614
1920.....	2009·196	77,104
1921.....	1750·655	42,935
1922.....	1173·924	35,512
1923.....	673·423	19,642
1924.....	364·805	10,617
1925.....	3365·543	103,570
1926.....	3202·5	61,908
1927.....	632·777	7456
1928.....	1627·186	42,458
1929.....	1324	30,624
1930.....	952·7	16,235
1931.....	1279·54	18,028
1932.....	784·95	9075
1933.....	548	4843
1934.....	487·7	4622
1935.....	234·82	2103
1936.....	280·6	3862
1937.....	586·42	9077
1938.....	190·87	2976
1939.....	283·065	5014
1940.....	464·740	11,604
1941.....	206·578	4212
1942.....	142·094	2930
1943.....	89·695	2087
1944.....	107·02	2619
1945.....	108·75	2665
1946.....	94·522	2581
1947.....	98·766	2700
1948.....	92·393	2094
1949.....	39·300	914
1950.....	46·141	1339
Total.....	30,770·538	£666,483

SILICA.

RETURN showing Quantity and Value of Silica produced during the Years 1936 to 1950 inclusive.

Year.	Quantity.	Value.
	Tons.	£
1936.....	6,463	3,231
1937.....	7,047	3,619
1938.....	6,886	3,146
1939.....	7,134	1,798
1940.....	9,268	4,094
1941.....	7,308	3,433
1942.....	8,184	3,523
1943.....	4,329	1,522
1944.....	5,432	2,409
1945.....	7,939	6,025
1946.....	5,937	2,798
1947.....	5,047	1,646
1948.....	3,762	1,378
1949.....	3,094·75	2,219
1950.....	7,443	3,572
Total.....	95,273·75	44,413

SHALE.

RETURN showing the Quantity and Value of Shale produced during the Years 1910 to 1950 inclusive.

Year.	Quantity.		Value.
	Tons.	£	
1910.....	364		214
1911.....	500		250
1912.....	—		—
1913.....	130		130
1914.....	75		75
1915.....	—		—
1916.....	1286		1286
1917.....	—		—
1918.....	—		—
1919.....	600		900
1920.....	140		172
1921.....	868		1506
1922.....	40		100
1923.....	1101		1094
1924.....	1576		1526
1925.....	820		559
1926.....	2127		1475
1927.....	3150		2050
1928.....	9052		7754
1929.....	4299		2982
1930.....	5428		4356
1931.....	1402		600
1932.....	1907		1074
1933.....	3401		1483
1934.....	3276		1630
1935.....	30		15
1936-1950	—		—
Total.....	41,572		£31,231

RETURN showing the Quantity of Oil Distilled from Shale.

Year.	Name of Company.	Gallons.
1910.....	Tasmanian Shale and Oil Company.....	4800
1915.....	Railton-Latrobe Shale Oil Co. N.L.	24,000
1927-1928 ..	Australian Shale Oil Corporation.....	65,000
1929.....	Goliath Portland Cement Company ...	2200
1930.....	Goliath Portland Cement Company	20,101
	Tasmanite Shale Oil Company Ltd.....	35,000
1931.....	Tasmanite Shale Oil Company Ltd.....	31,915
1932.....	Tasmanite Shale Oil Company Ltd.....	79,236
1933.....	Tasmanite Shale Oil Company Ltd.....	56,958
1934.....	Tasmanite Shale Oil Company Ltd.....	37,905
1935-50	Tasmanite Shale Oil Company Ltd.....	—
Total		357,115

SCHEELITE.

RETURN showing the Quantity and Value of Scheelite produced during the Years 1917 to 1950 inclusive.

Year.	Quantity.		Value.
	Tons.	£	
1917-1920 ..	589·07		112,468
1921-1937.....	—		—
1938.....	30·53		6193
1939.....	170·695		33,301
1940.....	275·48		49,120
1941.....	246·913		42,700
1942.....	215·332		71,353
1943.....	199·201		68,908
1944.....	32·21		10,842
1945.....	527·54		158,093
1946.....	627·8		165,264
1947.....	630·92		240,006
1948.....	637·42		254,517
1949.....	802·6		272,668
1950	791·53		465,296
Total.....	5,777·241		£1,950,729

SILVER.

The output was 1,129,840·034 oz. (fine), valued at £304,814, as compared with 1,011,032·138 oz., valued at £207,238 for 1949.

RETURN showing the Quantity and Value of Silver contained in Silver-Lead, Blister, Copper, Copper Ore Zinc Lead Ore, and Gold Ore during the Years 1919 to 1950 inclusive.

Year.	In Silver-Lead.		In Blister Copper.		In Copper Ore.		In Gold Ore.		In Zinc Lead Ore.		Total.	
	Quantity.	Value	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Oz.	£	Oz.	£	Oz.	£	Oz.	£	Ozs.	£	Oz.	£
1919	296,719·27	71,831	228,624	53,733	...	...	...	...	...	...	525,343·27	125,564
1920	453,411	118,898	169,948	47,869	...	...	...	...	...	...	623,359	166,767
1921	165,637	27,181	183,021	30,395	...	...	...	...	...	...	348,658	57,576
1922	674,886	104,926	119,699	18,511	...	...	...	...	...	...	794,585	123,437
1923	516,073·61	73,742	122,528	17,597	...	...	...	...	...	...	638,601·61	91,339
1924	494,782	75,398	147,376	22,439	...	...	...	...	...	...	642,158	97,837
1925	597,012·67	86,283	133,181	19,226	...	...	...	...	...	...	730,193·67	105,509
1926	632,066	80,597	134,587	17,394	...	...	...	...	...	...	766,653	97,991
1927	640,575	75,135	101,207	11,889	...	...	...	...	...	...	741,782	87,024
1928	564,056	66,386	105,270	12,515	...	...	...	...	...	...	669,326	78,901
1929	714,939	78,252	149,424	16,308	...	...	...	...	...	...	864,363	94,560
1930	518,641	41,485	182,978	14,583	...	...	...	...	...	...	701,619	56,068
1931	242,950	16,104	148,782	9650	...	...	...	...	...	...	391,732	25,754
1932	301,854	24,399	161,634	12,905	...	...	...	...	...	...	463,488	37,304
1933	361,768	29,394	127,562	10,414	...	...	...	...	...	...	489,330	39,808
1934	194,747	18,401	89,940	8726	...	...	...	...	...	...	284,687	27,127
1935	191,044	24,780	132,857	17,543	...	...	...	...	...	...	323,901	42,323
1936	803,269	71,886	103,189	9150	...	...	...	...	...	...	906,458	81,036
1937	977,552	88,252	83,233	7518	...	...	...	...	...	...	1,060,785	95,770
1938	1,152,568	98,913	66,982	5758	...	...	...	...	...	...	1,219,550	104,671
1939	1,207,604	111,893	70,512	6417	...	...	...	...	...	...	1,278,116	118,310
1940	1,549,859	155,596	58,659	5854	119	13	44	4	...	...	1,608,681	161,447
1941	1,282,795	134,693	43,830	4601	113	12	...	...	...	...	1,326,738	139,306
1942	207,050	21,739	36,207	3802	...	...	...	...	946,804·44	99,414	1,190,061·44	124,955
1943	193,070	20,273	44,321	4653	...	...	...	...	879,184·67	92,315	1,116,575·67	117,241
1944	143,640	15,082	38,047	3994	...	...	...	...	846,489·29	88,881	1,028,176·29	107,957
1945	136,390	17,188	24,232	2917	...	...	...	...	655,535·38	81,996	816,157·38	102,101
1946	134,450	28,102	34,194	7127	...	...	...	...	727,648·76	152,199	896,292·76	187,428
1947	146,775·56	26,979	27,891·9	5028	...	...	...	...	744,123·63	137,061	918,791·09	169,068
1948	105,085·07	19,520	22,763	4233	...	...	...	...	779,367·54	144,973	907,215·61	168,726
1949	103,993·358	21,323	17,451	3942	...	...	...	...	889,587·78	181,973	1,011,032·138	207,238
1950	...	...	...	...	...	...	...	...	...	...	1,129,840·034	304,814
Total	15,705,262·538	1,844,611	3,110,129·9	416,691	232	25	44	4	6,468,741·49	978,812	26,414,249·962	3,544,957

TALC.

RETURN showing Quantity and Value of Talc produced during the Years 1928 to 1950 inclusive.

Year.	Quantity.		Value.
	Tons.	£	
1928.....	32	96	
1929.....	23	45	
1930.....	13·35	53	
1931.....	15	58	
1932.....	5	17	
1933.....	8·75	22	
1934.....	5·5	16	
1935.....	—	—	
1936.....	3	8	
1937-1943.....	—	—	
1944.....	4	16	
1945.....	152·75	532	
1946.....	49	192	
1947.....	—	—	
1948.....	22	22	
1949-50.....	—	—	
Total.....	333·35	1077	

TIN.

The output was 684·948 tons, valued at £505,668, as compared with 631·231 tons, valued at £380,942 for 1949.

RETURN showing the Quantity and Value of Metallic tin exported from Tasmania from 1873 to 1904 (compiled from Customs Returns only), and Metallic Tin produced during the Years 1905 to 1950 inclusive.

Year.	Quantity.		Value.
	Tons.	£	
1873-1879 inclusive.....	16,429	1,054,923	
1880 to 1905 inclusive.....	56,419·93	7,530,234	
1906.....	3130·925	557,266	
1907.....	3039·925	501,681	
1908.....	3164·56	421,580	
1909.....	3157·84	418,165	
1910.....	2590·707	399,393	
1911.....	2767·135	513,500	
1912.....	2599·775	543,103	
1913.....	2807·287	531,983	
1914.....	1807·899	259,300	
1915.....	1819·463	292,306	
1916.....	1998·245	350,852	
1917.....	1846·135	427,917	
1918.....	1579·342	488,798	
1919.....	1580·22	395,794	
1920.....	1310·411	369,362	
1921.....	790·395	130,257	
1922.....	679·440	112,407	
1923.....	1160·390	236,955	
1924.....	1108·450	275,014	
1925.....	1129·662	297,515	
1926.....	1096·16	322,526	
1927.....	1105·74	317,593	
1928.....	1140·14	258,676	
1929.....	640·36	130,014	
1930.....	511·77	69,592	
1931.....	588·83	70,634	
1932.....	793·92	109,767	
1933.....	957	190,041	
1934.....	952·49	219,246	
1935.....	1131	258,919	
1936.....	1004·06	206,656	
1937.....	1089·839	260,673	
1938.....	1278·617	244,037	
1939.....	1249·877	282,708	
1940.....	1430·198	367,127	
1941.....	1255·729	328,340	
1942.....	1148·048	297,919	
1943.....	948·817	246,218	
1944.....	809·671	235,612	
1945.....	801·239	240,369	
1946.....	700·886	240,584	
1947.....	830·176	353,045	
1948.....	777·124	427,372	
1949.....	631·231	380,942	
1950.....	684·948	505,668	
Total.....	136,468·056	£22,674,838	

WOLFRAM.

RETURN showing the Quantity and Value of Wolfram produced during the Years 1899 to 1950 inclusive.

Year.	Quantity.		Value.
	Tons.	£	
1899 to 1904 inclusive.....	72·84	3304	
1905.....	32·25	2371	
1906.....	19·75	1465	
1907.....	40·75	4411	
1908.....	4·5	338	
1909.....	28·35	2494	
1910.....	67·35	7280	
1911.....	69·96	7769	
1912.....	66·49	6601	
1913.....	68·07	7040	
1914.....	46·873	4327	
1915.....	94·685	11,115	
1916.....	106·265	16,910	
1917.....	172·190	28,714	
1918.....	155·362	27,239	
1919.....	120·907	26,613	
1920.....	70·89	13,626	
1921.....	10·34	676	
1922.....	19·26	1024	
1923.....	96·86	6150	
1924.....	54	2785	
1925.....	174·170	14,658	
1926.....	83·15	5265	
1927.....	148·57	9896	
1928.....	176·15	12,094	
1929.....	151·86	18,358	
1930.....	112·6	12,216	
1931.....	0·29	16	
1932.....	—	—	
1933.....	104·05	7,301	
1934.....	194·19	27,375	
1935.....	232·13	29,345	
1936.....	207·13	28,323	
1937.....	291·04	71,643	
1938.....	299·104	63,348	
1939.....	227·604	44,356	
1940.....	234·304	42,319	
1941.....	235·502	42,536	
1942.....	183·23	58,397	
1943.....	230·025	82,965	
1944.....	241·875	86,749	
1945.....	211·11	69,896	
1946.....	156·573	44,553	
1947.....	201·047	82,928	
1948.....	234·408	103,193	
1949.....	264·395	100,738	
1950.....	200·103	114,083	
Total.....	6212·982	£1,354,793	

ZINC.

RETURN showing the Quantity and Value of Zinc produced during the Years 1919 to 1950 inclusive.

Year.	Quantity.		Value.
	Tons.	£	
1919.....	285	13,110	
1920.....	9·3	334	
1921-1923.....	—	—	
1924.....	2748·75	90,485	
1925.....	3112·69	110,691	
1926.....	5377·75	183,362	
1927.....	6326·2	181,240	
1928.....	7112	188,691	
1929.....	6977	185,964	
1930.....	943	19,322	
1931-1935.....	—	—	
1936.....	18,769	283,105	
1937.....	23,481	525,824	
1938.....	25,366	356,452	
1939.....	25,021	366,176	
1940.....	26,262	715,632	
1941.....	24,468·6	666,768	
1942.....	21,472·15	585,116	
1943.....	21,078·81	574,398	
1944.....	20,833·15	567,702	
1945.....	15,609·34	407,307	
1946.....	17,990·08	800,072	
1947.....	18,512·663	1,295,883	
1948.....	18,503·85	1,469,241	
1949.....	20,285·93	1,713,499	
1950.....	23,230·024	2,806,697	
Total.....	353,775·287	£14,107,071	

* 1917, 1918 have been deleted. Product of Broken Hill.

ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED.

RETURN FOR THE YEAR 1950.

EXTRACTIONS FROM ORES AND CONCENTRATES:
RISDON.

<i>From other than Tasmanian Ores—</i>	
Zinc	83,652 tons
Cadmium	233·4015 tons
Cobalt oxide	15·9683 tons

<i>From Tasmanian Ores—</i>	
Zinc	23,421 tons
Cadmium	44 tons
Cobalt oxide	0·2317 tons
Lead	958 tons
Silver	116,491 oz.

Men Employed—

The average number of men employed was 2010.

WEST COAST DIVISION.

<i>Ore Mined—</i>	
From Hercules Mine	43,488
From Rosebery Mine	116,321
From Comstock Mine .....	.....

Total 159,809

Concentrates Produced—

Zinc concentrates	48,558
Lead concentrates	10,470
Copper concentrates	3,794
	<hr/>
	62,822

Recoverable Quantity in Ores Mined—

Zinc	23,213·72 tons
Lead	7,677·23 tons
Copper	343·46 tons
Cadmium	43·70 tons
Silver	990,739·25 oz.
Gold	10,584·92 oz. f.

Average Number of Men Employed—

Hercules Mine	59
Rosebery Mine	431
Zeehan Smelters	5
Comstock Mine .....	.....

Total 495

QUANTITY AND VALUE OF METALS AND MINERALS PRODUCED.

RETURN showing Quantity and Value of Metals and Minerals Produced in Tasmania as at 31st December, 1950.

Mineral or Metal.	Quantity.	Value with Sterling Metal Prices.	Value with Aust. Metal Prices.
Asbestos	(tons) 3,979·85	17,142	17,142
Barytes	(tons) 2,196·2	8,138	8,138
Bismuth	(tons) 83·6359	28,432	29,644
Cadmium	(tons) 688·3157	356,717	403,309
Carbide, Cement, and Limestone	(tons) 3,242,548·6	6,032,479	6,032,479
Carbide to 1936 (now under Carbide, Cement, and Limestone)	(tons) 62,090	1,212,207	1,212,207
Cement to 1936 (now under Carbide, Cement, and Limestone)	(tons) 525,391	2,004,014	2,004,014
Coal	(tons) 5,616,086	4,556,747	4,556,747
Cobalt Oxide	(tons) 6·02	2,764	3,376
Copper (Blister) to 1918 (now shown under Silver and Copper)	(tons) 166,600	13,788,527	13,788,527
Copper Matte	(tons) 6,227	133,736	133,736
Copper Ore to 1918 (now under Copper)	(tons) 41,768·63	577,873	577,873
Copper (from 1919)	(tons) 283,657·229	19,009,849	21,552,725
Dolomite	(tons) 10	25	25
Gold	(fine oz.) 2,333,362·258	10,532,242	11,118,320
Granite (Red)	(tons) 3,383·5	24,617	24,617
Graphite	(tons) 22	36	36
Ilmenite	(tons) 550	1,256	1,256
Iron Ore	(tons) 46,181·5	31,776	31,776
Iron Pyrites	(tons) 725,127·973	973,701	973,701
Kaolin	(tons) 48,292·25	123,786	123,786
Lead (from 1919)	(tons) 199,163·340	7,180,446	5,738,795
Limestone to 1936 (now under Carbide, Cement, and Limestone)	(tons) 2,108,943	1,439,674	1,439,674
Limonite	(tons) 366·5	715	715
Manganese	(tons) ·6	3	3
Monazite	(tons) 32·6	488	607
Nickel	(tons) 222·55	38,850	40,518
Ochre	(tons) 1,776·25	3,886	3,886
Osmiridium	(oz.) 30,770·538	666,483	687,314
Rutile	(tons) ·5	18	18
Scheelite	(tons) 5,777·241	1,950,729	2,182,390
Silica	(tons) 95,273·75	44,413	44,413
Shale	(tons) 41,572	31,231	31,231
Silver-Lead ore to 1918 (now under Silver and Lead)	(tons) 1,083,897·821	6,429,291	6,429,291
Silver (from 1919)	(fine oz.) 26,414,249·962	3,544,957	4,142,734
Talc	(tons) 333·35	1,077	1,077
Tin	(tons) 136,468·056	22,674,838	23,684,040
Wolfram	(tons) 6,212·982	1,354,793	1,385,169
Zinc	(tons) 353,774·287	14,107,071	9,597,330
Total .....	.....	£118,885,027	£118,002,639

STATISTICS OF PRODUCTION.

RETURN showing the Annual Published Value of Mineral Products for the State of Tasmania from 1880 to 1950 inclusive.

Year.	Value.	Year.	Value.
	£		£
1880	554,081	1917.....	1,580,354
1881	602,723	1918.....	1,444,814
1882	556,306	1919.....	1,301,090
1883	560,873	1920.....	1,421,104
1884	468,302	1921.....	822,851
1885	518,885	1922.....	1,013,415
1886	489,966	1923.....	1,219,456
1887	593,256	1924.....	1,496,804
1888	616,733	1925.....	1,700,861
1889	504,718	1926.....	1,808,847
1890	444,210	1927.....	1,621,027
1891	528,388	1928.....	1,593,828
1892	526,909	1929.....	1,790,653
1893	627,909	1930.....	1,270,114
1894	732,764	1931	894,986
1895	575,692	1932.....	897,168
1896	662,058	1933.....	1,053,373
1897	1,006,140	1934.....	1,037,351
1898	1,071,084	1935.....	1,387,511
1899	1,660,622	1936.....	1,979,637
1900	1,888,695	1937.....	2,653,822
1901	1,763,896	1938.....	2,294,735
1902	1,378,406	1939.....	2,520,282
1903	1,354,044	1940.....	3,137,330
1904	1,379,204	1941.....	3,055,838
1905	1,729,129	1942.....	2,832,189
1906	2,257,147	1943.....	2,686,664
1907	2,277,159	1944.....	2,581,366
1908	1,650,027	1945.....	2,201,324
1909	1,574,995	1946	3,190,033
1910	1,432,193	1947.....	4,595,685
1911	1,349,497	1948.....	4,884,660
1912	1,493,502	1949.....	5,171,548
1913	1,415,700	1950.....	7,677,831
1914	1,007,038	Value of production 1867-	
1915	1,225,575	1945, previously un-	
1916	1,521,050	recorded	2,067,650
Total.....			£118,885,027

RETURN showing the Total Number of Leases and Licences in Force on 31st December, 1950.

Mineral.	Number.	Number of Sluiceways.	Area
			Acres.
Bauxite	1	...	129½
Barytes	1	...	10
Bismuth .....	...	...	...
Coal	36	...	6272
Clay	10	...	256
Copper	1	...	33
Galena .....	...	...	...
Gravel	1	...	31
Granite	4	...	30
Gold	28	...	499½
Iron.....	2	...	107
Limestone	11	...	689
Lead-Zinc	1	...	80
Molybdenum .....	...	...	...
Minerals	35	...	10,637
Marble .....	...	...	...
Nickel	5	...	249
Osmiridium	1	...	10
Ochre	2	...	24
Pyrites	1	...	80
Quartzite .....	...	...	...
Scheelite	3	...	281
Shale .....	...	...	...
Silica	2	...	25
Silver Lead	20	...	750
Stone	10	...	913
Sand	2	...	13
Serpentine, &c.	3	...	240
Tin	237	...	7254½
Wolfram.....	1	...	20
Mining Easements and Machinery Sites.....	94	...	1466½
Licences to Search.....	...	...	...
Water Licences.....	160	862	362½
Total	672	862	30,462½

STATISTICS OF MINING COMPANIES.

RETURN showing the Amounts Paid in Dividends by Mining Companies during the Year ending 31st December, 1950.

Mines.	Dividends.
	£ s. d.
Copper	77,500 0 0
Gold .....	...
Tin	78,125 0 0
Silver .....	...
Coal.....	...
Scheelite.....	100,000 0 0
Zinc	* 750,000 0 0
Total	£1,005,625 0 0

* This amount represents total dividends out of Tasmanian and ex-Tasmanian profits.

RETURN showing the Mining Companies Registered during the Year ended 31st December, 1950.

Number of Companies.	Capital.
Nil	Nil

No agents for foreign companies under the Mining Companies (Foreign) Act, 1884, were registered. No syndicates under Part V. of the Mining Companies Act, 1884, were registered.

RETURN showing the Total Amount of Rents, Fees, &c., received by the Mines Department during the Year ending 31st December, 1950.

Head of Revenue.	Amount.
	£ s. d.
Rent of Auriferous and Mineral Lands.....	6984 7 11
Fees, Auriferous and Mineral Lands	407 8 2
Survey Fees	703 11 0
Fees under the Explosives and Inflammable Liquids Act	3339 6 8
Total	£11,434 14 9

RETURN showing the Total Area of Land and Number of Sluiceways of Water Applied for during the Year ending 31st December, 1950.

Mineral.	Number.	Area.	Sluiceways.
		Acres.	
Asbestos .....	...	...	...
Bismuth .....	...	...	...
Barytes .....	...	...	...
Clay .....	...	...	...
Copper	1	5	...
Coal .....	...	...	...
Dolomite	3	302	...
Gold	2	66	...
Galena .....	...	...	...
Iron	5	194	...
Lead—Zinc, Silver .....	...	...	...
Lead—Antimony .....	...	...	...
Manganese .....	...	...	...
Minerals	3	95	...
Silver Lead	1	80	...
Silica .....	...	...	...
Stone	2	15	...
Sand	1	40	...
Talc .....	...	...	...
Tin	36	408	...
Wolfram .....	...	...	...
Zinc .....	...	...	...
Machinery Sites and Mining Easements ..	3	17	...
Water-rights and Dam Sites	10	10	31
Licences to search for Coal .....	...	...	...
Total	67	1232	31

RETURN showing Total Number and Area of Leases and Licences Issued during the Year ending 31st December, 1950.

Mineral.	Leases.	Area.	Sluiceways.
		Acres.	
Asbestos .....	...	...	...
Bauxite .....	...	...	...
Barytes .....	...	...	...
Clay	1	5	...
Copper .....	...	...	...
Copper-Nickel .....	...	...	...
Coal	4	518	...
Galena .....	...	...	...
Gold	1	20	...
Lead Zinc .....	...	...	...
Limestone .....	...	...	...
Minerals	1	2926	...
Manganese .....	...	...	...
Nickel, &c. ....	...	...	...
Ochre .....	...	...	...
Quartzite .....	...	...	...
Silver .....	...	...	...
Silica .....	...	...	...
Silver-Lead .....	...	...	...
Stone .....	...	...	...
Tin	11	731	...
Wolfram .....	...	...	...
Water-rights and Dam Sites	12	4	20
Licences to Search for Coal and Oil .....	...	...	...
Mining Easements and Machinery Sites	1	1	...
Total	31	4205	20

Comparative Statement of Revenue from Mines, being Rents, Fees, Storage of Explosives, &c., (exclusive of Survey Fees), Paid to the Treasury for the Years ending 30th June, from 1883 to 1903, and for Six Months ending 31st December, 1903, and for the Years ending 31st December, 1904 to 1950 inclusive.

Year.	Amount.	Year.	Amount.
	£ s. d.		£ s. d.
1883.....	15,439 14 5	1916.....	14,678 19 10
1884.....	6981 11 10	1917.....	14,669 7 2
1885.....	11,070 5 7	1918.....	17,833 14 9
1886.....	12,523 10 4	1919.....	15,388 7 7
1887.....	14,611 11 5	1920.....	16,767 11 6
1888.....	23,502 8 4	1921.....	11,248 14 11
1889.....	17,254 9 0	1922.....	14,184 7 3
1890.....	26,955 4 9	1923.....	13,224 11 9
1891.....	37,829 16 5	1924.....	14,678 13 11
1892.....	17,568 18 4	1925.....	14,229 8 7
1893.....	16,971 9 2	1926.....	15,163 15 7
1894.....	16,732 7 7	1927.....	16,887 9 9
1895.....	15,323 1 9	1928.....	14,313 12 0
1896.....	20,901 13 2	1929.....	14,665 10 7
1897.....	25,631 0 3	1930.....	11,166 7 2
1898.....	33,661 13 9	1931.....	11,520 1 10
1899.....	24,696 10 5	1932.....	10,097 18 6
1900.....	28,380 11 10	1933.....	9459 6 9
1901.....	21,569 5 2	1934.....	11,166 2 11
1902.....	19,471 0 1	1935.....	10,548 10 0
1903.....	17,776 14 3	1936.....	11,023 11 3
1903, 1 July to 31 Dec.	14,758 17 1	1937.....	12,206 10 1
1904, Jan. to Dec.	16,631 8 2	1938.....	11,177 11 5
1905.....	20,208 17 0	1939.....	11,556 5 1
1906.....	24,136 12 5	1940.....	11,018 3 9
1907.....	24,794 7 7	1941.....	10,835 18 8
1908.....	20,311 3 0	1942.....	9,509 18 2
1909.....	22,804 1 5	1943.....	9,449 9 7
1910.....	22,221 18 0	1944.....	8,952 5 3
1911.....	20,556 15 10	1945.....	9,108 18 6
1912.....	17,639 19 11	1946.....	8,716 8 8
1913.....	19,410 17 8	1947.....	9,569 12 9
1914.....	14,087 0 6	1948.....	10,637 2 1
1915.....	17,679 3 6	1949.....	9,753 17 5
		1950.....	11,027 3 9

The above Statement does not include Stamp Duties upon Transfer of Leases and Tax payable upon Dividends, from which sources large sums are derived.

RETURN showing the Number and Area of Leases Held under the Mining Act in force on 31st December, 1936 to 1950 inclusive.

Nature of Lease.	In force on 31st Dec., 1936.		In force on 31st Dec., 1937.		In force on 31st Dec., 1938.		In force on 31st Dec., 1939.		In force on 31st Dec., 1940.		In force on 31st Dec., 1941.		In force on 31st Dec., 1942.		In force on 31st Dec., 1943.		In force on 31st Dec., 1944.		In force on 31st Dec., 1945.		In force on 31st Dec., 1946.		In force on 31st Dec., 1947.		In force on 31st Dec., 1948.		In force on 31st Dec., 1949.		In force on 31st Dec., 1950.	
	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.
For Minerals, Silver, Tin, &c.	585	21,096	603	21,368	595	23,497	463	18,843	474	16,838	436	15,892	377	15,135	333	15,075	423	16,517.50	373	14,665	320	13,291	348	14,441	304	13,858	298	17,135	309	19,641
For Coal, Stone, Shale, &c.	48	7249	50	6778	43	4904	49	6683	53	6517	56	7151	53	6732	53	6683	60	7032	63	6687	64	7059	70	7477	54	5808	77	7980	81	8493
For Gold Mining	155	3183	22	2619	117	2491	108	1850.5	110	1759.5	106	2041	75	1176	59	914	113	1948	55	955	56	992	53	953	26	464	27	479.5	28	499.5
Easements	112	634	112	663	97	630	86	617.25	85	616.25	83	529	83	511.25	78	570.75	82	633.75	81	760	83	744	85	830	72	724	100	1487.5	94	1466.5
Machinery Sites	5	10,900	6	10,600	2	1180	2	1180	—	—	—	—	—	—	—	—	1	900	2	1800	—	—	—	—	1	200	1	200	—	—
Licences to search for Coal or Oil	466	1963	467	2243 & 2034	448	1834 & 2191	388	2172.75 & 1574	395	2183 & 1478	386	2065 & 1428	346	2031.75 & 1586	293	2015.25 & 1319	300	2062.25 & 1343	264	2005 & 1230	256	1994 & 1131	256	1999.1 & 1221	212	1807.2 & 987	152	819.25 & 912	160	362.25 & 862
Water-rights, Mineral and Gold		sluice-heads		sluice-heads		sluice-heads		sluice-heads		sluice-heads		sluice-heads		sluice-heads		sluice-heads		sluice-heads		sluice-heads		sluice-heads		sluice-heads		sluice-heads		sluice-heads		sluice-heads

TABLE showing the Average Annual Prices for Minerals During Recent Years.

	Average for 1937.	Average for 1938.	Average for 1939.	Average for 1940.	Average for 1941.	Average for 1942.	Average for 1943.	Average for 1944.	Average for 1945.	Average for 1946.	Average for 1947.	Average for 1948.	Average for 1949.	Average for 1950.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Copper—Standard, spot: per ton	60 5 9	45 16 9	49 17 7	62 0 0	62 0 0	62 0 0	62 0 0	62 0 0	62 0 0	75 10 0	131 0 0	134 10 0	131 8 0	179 2 0
Lead—Soft Foreign: per ton	Electrolytic. 23 6 1	Electrolytic. 15 6 5	Electrolytic. 15 13 7	Electrolytic. 25 0 0	Electrolytic. 48 17 6	Electrolytic. 85 7 6	Electrolytic. 95 10 0	Electrolytic. 102 6 0	Electrolytic. 107 17 6					
Spelter: per ton	22 6 8	14 1 7	14 14 0	25 15 0	25 15 0	25 15 0	25 15 0	27 5	27 5 0	27 12 6	42 16 3	70 0 0	79 3 4	85 18 4
Tin—Standard, spot: per ton	242 6 7	189 12 1	226 5 6	256 12 3	261 8 0	259 10 0	259 10 0	289 17 6	300 0 0	342 15 0	422 17 6	547 4 2	600 0 0	737 8 6
Silver—Standard, spot: per oz.	s. d. 1 9·65	s. d. 1 9·066	s. d. 1 8·461	s. d. 2 1·048	s. d. 1 11·439	s. d. 2 6	s. d. 4 1·75	s. d. 3 8·25	s. d. 3 9	s. d. 4 0	s. d. 5 5			
Osmiridium per oz. ...	£ s. d. 15 12 6	£ s. d. 15 0 4	£ s. d. 17 15 0	£ s. d. 24 0 0	£ s. d. 20 7 2	£ s. d. 20 12 4	£ s. 23 10 11	£ s. d. 24 10 6	£ s. d. 24 10 6	£ s. d. 27 17 7	£ s. d. 27 18 0	£ s. d. 22 10 0	£ s. d. 21 5 0	£ s. d. 28 10 0
Wolfram: per ton	325 19 0	289 0 0	271 0 0	250 0 0	250 0 0	437 10 0	500 0 0	500 0 0	462 10 0	400 0 0	5 82 17 6	616 5 0	514 0 0	816 0 0
Gold: per f. oz.	W.O. ₃ 7 1 3	W.O. ₃ 7 2 6	W.O. ₃ 7 15 2	W.O._{3} 8 8 0	W.O._{3} 8 8 0	W.O._{3} 8 8 0	W.O._{3} 8 8 0	W.O. ₃ 8 8 0	W.O. ₃ 8 10 10	W.O. ₃ 8 12 3	W.O. ₃ 8 12 3	W.O. ₃ 8 12 3	W.O. ₃ 9 14 2	W.O. ₃ 12 8 0

AID TO MINING.

The policy of assistance to mining was maintained to the extent provided for under the provisions of the Aid to Mining Act, but little advantage was taken thereof. An amount of £629 1s. 7d. was expended and £438 3s. 10d. was repaid against advances made under the Act.

An amount of £200 was repaid by the Jubilee Coal Company against financial assistance made available from sources other than the Mining Trust Fund and the Aid to Mining (Federal Grant) Trust Fund.

A loan of £10,000 made available to Renison Associated Tin Mines, for the erection of dwellings and a community hall, was not drawn against beyond the £5,500 already advanced. An amount of £750 was repaid.

THE AID TO MINING ACT, 1927.

STATEMENT OF RECEIPTS AND PAYMENTS OF THE MINING TRUST FUND FOR
YEAR ENDED 31st DECEMBER, 1950.

RECEIPTS.			PAYMENTS.		
	£	s. d.		£	s. d.
Balance, 31st December, 1949	11,470	10 0	Assistance	629	1 7
Repayments of loans	438	3 10	Insurance	1	6 2
Sale of plant	150	0 0			
			Total Payments	630	7 9
			Excess of receipts over payments	11,428	6 1
	£12,058	13 10		£12,058	13 10

THE AID TO MINING (FEDERAL GRANT) TRUST FUND.

(22 Geo. V. No. 92, and 26 Geo. V. No. 8, and 2 Geo. VI. No. 68.)

RECEIPTS AND PAYMENTS STATEMENT.

RECEIPTS.				PAYMENTS.					
Item.	March, 1935 (commence- ment) to 31st Dec., 1950.		1st Jan., 1950. to 31st Dec., 1950.		Item.	March, 1935 (commence- ment) to 31st Dec., 1950.		1st Jan., 1950. to 31st Dec., 1950.	
	£	s. d.	£	s. d.		£	s. d.	£	s. d.
Provided by—					Prospecting	1,584	6 6		
Commonwealth	£25,750				Batteries	1,328	14 0		
State	9,250				Advances	22,785	5 7		
	35,000	0 0			Plants and operation thereof	6,711	9 11		
Transfer of balance from—					Metallurgical investigations	1,237	3 4		
The Aid to Mining (Federal Grant) Trust Fund, 1936-37 (1 Edw. VIII. No. 20)	1,883	18 2			Roads and tracks	6,486	8 8		
The Aid to Mining (Federal Grant) Trust Fund, 1937-38 (1 Geo. VI. No. 32)	798	9 11			Transport	829	10 10		
Other credits—					Staff	574	11 1		
Batteries	99	13 2			Total payments	41,537	9 11		
Advances	9,058	18 4	49 9 9		Excess receipts over pay- ments	5,316	7 1	5,316 7 1	
Plants and operation there- of	11	18 8							
Metallurgical investigations	0	7 11							
Staff	0	10 10							
Balance brought forward period ended 31st Decem- ber, 1949			5,266 17 4						
	£46,853	17 0	5,316 7 1			£46,853	17 0	5,316 7 1	

GOLD MINING ENCOURAGEMENT ACT, 1940.

(Commonwealth Act, No. 38 of 1940.)

RECEIPTS AND PAYMENTS STATEMENT OF THE GOLD MINING ENCOURAGEMENT (COMMON-
WEALTH) DEPOSIT ACCOUNT FOR THE YEAR ENDED 31st DECEMBER, 1950.

RECEIPTS.			PAYMENTS.		
	£	s. d.		£	s. d.
Balance brought forward, 31st December, 1949	2,000	0 0	Advances	2,000	0 0
Repayments			Excess receipts over payments		
Interest					
	£2,000	0 0		£2,000	0 0

DRILLING.

Departmental drilling plants were in constant operation on hire to the holders of mining tenements, in drilling areas reserved against occupation under the provisions of the Mining Act, and in boring for water on pastoral lands. Bores, aggregating 5095 feet were drilled. Expenditure in all fields of boring was £4061 14s. 4d. and £1628 14s. 2d. was repaid under drilling agreements.

Diamond drilling was continued at Dalmayne in tracing the areal extent and horizons of a seam which provided coal suitable as a single fuel unit in railway locomotives. Drilling has revealed small-area faulting and this discovery has retarded economic developments of major magnitude.

A diamond-drilling unit was engaged in testing a multiple tin-vein series on a mineral lease at Rosarden.

One percussion plant continued to be usefully employed in boring for supplies of underground water in the Oatlands district. Bores, aggregating 3288 feet, were completed. Twenty-four bores located adequate supplies of water and five were classed as "dry-holes".

A second percussion plant was purchased and preparations were made for boring for underground water in the Longford district.

Policy directed to an expansion of drilling activities was hampered by difficulties in obtaining personnel, either as experienced drillers or trainees.

DETAILS OF EXPENDITURE ON DRILLING DURING THE YEAR ENDED 31st DECEMBER, 1950.

Plant.	Location.	Amount Expended.		
		£	s.	d.
Junior Straitline Diamond Drill	St. Marys	1,646	15	1
Goldfields No. 10 Diamond Drill	Rossarden	857	0	7
G.33 Percussion Drill	Oatlands District	1,357	7	11
G.33 Percussion Drill	Preparation for drilling and drilling Longford District	200	10	9
		£4,061	14	4

DEPARTMENTAL ACTIVITIES.

Technical services were again usefully directed to the economics and geology of mineral deposits, metallurgical research, assaying and general analytical work, boring of mineral deposits, investigations of rock structure, location of underground water and to the general development of mining.

Some progress was made but there was a persistent lag in the delivery of laboratory units and in the completion of buildings for a planned extension of the assemblage of equipment for metallurgical research. Temporarily installed units enabled a high standard of useful service to be maintained in ore-dressing and other metallurgical problems.

The mineral industry is of major significance in the prosperity and economy of the State. Production and utilization trends forcefully emphasise the necessity for a forward policy in financing Departmental instrumentalities. An extension of laboratory services and the establishment of a geological unit at Zeehan were a commencing approach to a broader and bolder policy but were fractional only of services necessary for the application of a studied programme of investigation and exploration. The services rendered and the results attained have been sufficient to fully merit an implementation of the planned policy of investigation and exploration in the field of metallic and non-metallic minerals. It is expected that there will be partial movements in new services during the coming year.

STAFF.

There were no major alterations to the staff of the Department.

Mr. H. J. Dabner was appointed as Caretaker-Cleaner at the Launceston Research Laboratories as from the 7th September, 1950.

Mr. S. R. Whitchurch resigned as Clerk-Statist as from the 13th October, 1950.

Mr. G. J. Levett was appointed as Magazine Caretaker and Inspector of Explosives, Launceston, with the date of commencing duties to be fixed.

MINES DRAFTING BRANCH.

Number of working plans in use and kept up to date	225
Instructions issued to Surveyors	72
Diagrams received from Surveyors	11
Diagrams drawn on Leases	106
Consolidated and other diagrams drawn	14
Lithographs entered to date	138
Various tracings prepared	38
Tracings and photo-stats for Launceston office	24
Manuscripts entered to date	15
Manuscripts photo-lithographed	7
Manuscripts traced for re-production	4
Underground survey plans examined and computations checked	4

Draughting officers were constantly employed in the compilation of geological maps relating to normal field services, in regional maps featuring geological boundaries and mineral occurrences charted in the course of past services, in the preparation of engineering plans and in the tracing of plans relating to the design of premises for the storage of dangerous commodities.

APPRECIATION OF SERVICES.

Appreciation is recorded of the services rendered by officers of the Department, including officers of the Mining Drafting Branch, Wardens of Mines, and Registrar of Mines in the several mining districts.

The Honourable the Minister for Mines,
Hobart.

APPENDICES.

The following reports are appended:—

- Geological Survey.
- Chief Chemist and Metallurgist.
- Chief Inspector of Mines.
- Chief Inspector of Explosives.
- Inspectors of Mines and Explosives.
- Mount Cameron Water Race Board.

I have the honour to be,
Sir,

Your obedient servant,

W. H. WILLIAMS, Director of Mines.

Geological Survey, Chief Chemist and Metallurgist, Chief Inspector of Mines, Chief Inspector of Explosives, Inspectors of Mines and Explosives, Mount Cameron Water Race Board.

The Chief Geologist, H. H. Williams, M.B.E., M.I.M.S., reports:— After a period of absence on leave from 1st July 1950 to 1st July 1951, the principal work of the Department during that period was the continuation of the various projects which were in progress at the end of 1950.

During the absence of Mr. Williams, the Department was managed by Mr. J. H. Williams, Chief Inspector of Mines, who has done very well in the circumstances. The Department has continued to work on the various projects which were in progress at the end of 1950, and has also started a number of new projects.

The following are the reports of the various departments:— 1. Geological Survey. 2. Chief Chemist and Metallurgist. 3. Chief Inspector of Mines. 4. Chief Inspector of Explosives. 5. Inspectors of Mines and Explosives. 6. Mount Cameron Water Race Board.

1. Geological Survey. 2. Chief Chemist and Metallurgist. 3. Chief Inspector of Mines. 4. Chief Inspector of Explosives. 5. Inspectors of Mines and Explosives. 6. Mount Cameron Water Race Board.

1. Geological Survey. 2. Chief Chemist and Metallurgist. 3. Chief Inspector of Mines. 4. Chief Inspector of Explosives. 5. Inspectors of Mines and Explosives. 6. Mount Cameron Water Race Board.

1. Geological Survey. 2. Chief Chemist and Metallurgist. 3. Chief Inspector of Mines. 4. Chief Inspector of Explosives. 5. Inspectors of Mines and Explosives. 6. Mount Cameron Water Race Board.

APPENDIX I.

REPORT OF THE CHIEF GEOLOGIST.

The Chief Geologist, H. G. W. Keid, M.Sc., M.I.M.M., reports:—

STAFF.

There were no changes in the Geological staff of the Department during the year.

FIELD WORK.

Geologist B. L. Taylor B.Sc., A.I.M.M., continued his investigations on the West Coast of the State with his headquarters at Zeehan.

Geologist T. D. Hughes B.Sc., was absent on Long Service Leave for six months during the year and for the remainder of the year was operating from Head Office at Hobart.

Geologist G. Everard, B.A., A.I.M.M., completed the investigations of the Limestone deposits of Flinders Island and gave attention to the limestone deposits of Bruny Island and other parts of the State.

Senior Field Assistant G. Robertson, assisted the Geologists in the field and performed many duties in the office at Hobart.

Detailed reports of the activities of the several Geologists and myself are appended.

The Chief Geologist, H. G. W. Keid, M.Sc., M.I.M.M., reports:—

After a period of absence, on sick leave, I returned to duty on 27th March.

The principal work carried out was the testing, by hand boring of the monazite deposits of the Mount Stronach area. After arranging for labour in the early part of July the boring campaign opened on the 3rd August, and was completed on 6th December. A total of 199 bores were completed for a total footage of 3295 feet.

During the latter half of April an investigation was made of the Limestone possibilities of the Waterhouse Closer Settlement area. Limestone suitable for agricultural purposes is required for the estate.

At Jerusalem Plains near Bridport and only a few miles distant from the estate, a deposit of calcareous material occurs on the property of Mills Bros. This deposit was tested by preliminary boring at the conclusion of the Mount Stronach boring and the results would suggest the occurrence of an extensive low grade deposit of calcareous material. Further boring is required to finally test the deposit.

The following are the minor investigations carried out:—

Visits to the Oatlands and Colebrook districts in connection with underground water supplies. Visit to Medway, Sorell, in connection with underground water.

Visit to the Dromedary district near Bridgewater in connection with limestone deposits.

Visit to Tolosa Road in connection with underground water supplies.

Visit to Whitton's Quarry at Proctors Road for the purpose of sampling the limestone.

During the examination of the Waterhouse Estate visits were made to the Lynhurst Goldfield and to the New River Gold prospect of A. H. Heathorn. Several visits were made to the latter area during the period of the Mount Stronach boring. The prospect was sampled to determine grade.

Reports were prepared on the Waterhouse and several of the minor investigations but preparation of the plan and report on the Mount Stronach boring was not completed.

Geologist T. D. Hughes, B.Sc., reports:—

During the period from 3rd March to 3rd September, I was absent in England and the Continent on six months long service leave. During the remainder of the year, sixty-nine days were spent in the field, in connection with the following examinations:—

1. Underground Water Investigations at Oatlands Municipality, Colebrook Municipality, Melton Mowbray, Opossum Bay, Bothwell Municipality, Lindisfarne, Campbell Town, Ulverstone, Kentish Municipality, Rokeby, Glenorchy and Jericho.
2. Limestone Deposits of Northern and North-Eastern Tasmania, Limestone at Proctors Road, at Bothwell, at Hampshire and at Campania.
3. Brick Making Materials of North-West Coast, and in the vicinity of Hobart.
4. Silver Lead Deposits at Round Hill.
5. Tungsten Deposits at Hampshire.
6. Proposed Dam Sites at Bell Bay and Elwick.

In connection with the above and other matters the following reports and memoranda, with their accompanying plans, have been prepared.

1. Coal at Meadstone, 17.2.50.
2. Underground water at Melton Mowbray, 13.2.50.
3. Limestone deposits of Northern and North-Eastern Tasmania, 20.2.50.
4. Limestone at Proctors Road, 1.3.50.
5. Underground water at Opossum Bay, 1.3.50.
6. Underground water resources of Bothwell district, 2.3.50.
7. Limestone near Bothwell, 3.3.50.
8. Underground water at Lindisfarne, 25.9.50.
9. Underground water at Campbell Town, 17.10.50.
10. Underground water at Ulverstone, 17.10.50.
11. Underground water in Kentish Municipality, 18.10.50.
12. State forest proposal Mersey Valley, 23.10.50.
13. Underground water at Rokeby, 8.11.50.
14. Some Clay deposits of N.W. Tasmania, 8.11.50.
15. Brick making materials in vicinity of Hobart, 10.11.50.
16. Gold Prospect at Woodbridge, 24.11.50.
17. Cocee brick works, 5.12.50.
18. West Mt. Claude Prospecting Syndicate Round Hill, 5.12.50.
19. Underground water at Glenorchy, 7.12.50.
20. Proposed dam site Bell Bay, 7.12.50.
21. Limestone at Hampshire, 11.12.50.
22. Tungsten prospect, Hampshire, 12.12.50.
23. Underground water at Jericho, 15.12.50.

Geologist B. L. Taylor, B.Sc., reports:—

STAFF.

The senior field assistant Mr. G. S. Robertson was temporarily assigned to the Zeehan area from the 15th of March to the 30th of May.

Mr. D. Burger joined the staff as geologist from the 5th of September and Mr. D. E. Sargison as field assistant from the 25th of October, both permanently attached to the Zeehan office.

In addition local casual labour has been employed as warranted.

GENERAL FIELD WORK.

Renison Bell Geophysical Survey.

On the 9th of March, 1950, Mr. L. Williams, geophysicist, arrived in Zeehan from the Bureau of Mineral Resources to initiate a geophysical survey of the Renison Bell area.

On the 29th of March, I proceeded to Renison Bell and commenced the lay-out of a grid. This work continued intermittently until the 14th of June.

During this period approximately 1100 pegs were laid out.

A base line commences on the eastern side of the road near the Renison Associated Tin Mining N.L. Mill and runs on a bearing of 157°30' along an old self acting tramline trending towards the top of the Renison Bell Hill.

Along this base line cross traverses were put out at 100 ft. interval and along each traverse pegs are put at 25 ft. intervals, all distances being horizontal.

On the West side the traverses go to 500 ft. and on the East side to the Renison Bell Creek or to 1000 ft., whichever is the lesser.

While laying out the pegs, the vertical angles have been observed and it is intended to contour the area.

This work has been tied on to the Dreadnought Trig. of the North Pieman triangulation and the final plan will be adjusted to the military grid of Australia and will be on a scale of 100 ft. to the inch.

The geophysical party arrived back in Zeehan at the end of November and on the 29th November survey work was recommenced.

In view of the fact that anomalies were noted near the ends of the last 5 traverses, these traverses were first extended to 1500 ft. east and the last traverse to 700 ft. west. The base line has been extended a further 600 ft. to 2600 ft. south and the start has been made with pegging the cross traverses. Approximately 240 pegs have been put in and the work is now proceeding.

In addition to the above and to the work in the North Pieman area, to be detailed later, a number of other investigations were made and reports, to the Director of Mines, were furnished thereon.

1. Report on G. W. Clark's Discoveries Near Zeehan.

On the track to the Pieman River which is being constructed by the Mines Department, Mr. Clark had observed a series of 8 fractures, occurring in slates of the same series as those in which the Montana Western silver-lead lode occurs. On the surface these fractures show signs of mineralization, galena, sphalerite and chalcopyrite being noted.

No developmental work has been done, as yet.

2. The Great South Comet Mine, Dundas.

This report, together with 3 plans, was the result of a complete geological investigation of the 40 acres lease held by lead and nickel (Zeehan) N.L., and was part of a complete geological and metallurgical investigation initiated by the Director of Mines.

It was shown that the mine is a zinc-lead show with siderite as the main gangue mineral. Three parallel lodes averaging 3 ft. to 4 ft. in width occur in a zone of approximately 60 ft. wide.

A considerable amount of developmental work has been done by the present and previous companies and much ore has been blocked out.

The assay values are, however, low. Recommendations for working the mine were made.

3. Mineral Lease No. 17M/45 R. S. Laffer.

This lease of 80 acres lies 3-mile S.S.W. of the Montana Silver Lead Company N.L. Several attempts have been made to work the lode over the past 40 years and the present syndicate has extended one of the drives and one of the adit crosscuts and driven along the line of the lode for some 40 ft.

The content of the lode is extremely low and no encouragement for further work could be given. Subsequent to this report the syndicate abandoned the project.

4. Lease No. 11708 M. W. F. Thomas.

This lease of 50 acres is on the west flank of the Argent Flat. A report on the area was made by Mr. H. W. Keid in 1943. Since that time little developmental work has been done. As no new exposures had been made since then no further advice could be given.

5. Supply of Clay for McHugh Bros. Prop. Ltd., Launceston.

Ten days were spent on this investigation, during which time a study was made of the production methods of the Company, and the present source of supply. A search made for further deposits of suitable clay for earthenware pipe manufacture.

A boring programme was undertaken by the Company, under advice and it was shown that at the present rate of consumption the expected life of the present pit is between five and seven years.

Deposits of suitable clay occur in many places in the Launceston Tertiary basin. The controlling economic factors being availability of property and distance from the works. Three suitable areas for future investigation were indicated.

6. Proposed Cage Crossing Pieman River.

The Director of Mines inspected the proposed point at which the track to the North Pieman area would cross the Pieman River. A survey of this area was made to determine the length of cable required and the amount of work necessary to install a cage crossing.

7. Report on G. H. Watson's Show, at North Heemskirk.

This investigation was carried out and the report and plans were prepared by Mr. D. Burger.

The show is situated in section 4901 M, approximately 11 miles from Zeehan, close to the point where the old Granville Harbour tramline crosses the Heemskirk River.

The area consists of slate, much impregnated by quartz veins and is bordered by dolerite towards the east and the south. Since 1942 the mine, which consists of an 83 ft. long cut and a 25 ft. long drive, has been worked intermittently by Mr. Watson. Total production until November, 1950, amounts to approximately four tons of tin concentrates, a part of which has been obtained from alluvial deposits elsewhere in the area.

It appears that cassiterite and pyrite occur in pockets within a zone of 3 ft. width closely associated with faulting in a highly decomposed slate. Close examination of the immediate surroundings of the mine did not disclose either the presence of gosams or the continuation of the fault system. Therefore, it is unlikely that an ore body of appreciable size will be located in this area.

8. Alleged Occurrence of Radio Active Minerals at North Heemskirk.

Mr. E. McGuinness represented that he had knowledge of Uranium occurring in the North Heemskirk area. This matter was referred to the Director of Mines, who directed that a geological reconnaissance of the area be made.

The area investigated, centred on the St. Dizier Creek junction with the Tasman River and embraced approximately 10 square miles. All known tin and sulphide lodes within this area were visited and samples taken from the dumpheaps. In addition samples were also taken from two iron blows. These samples were forwarded to Hobart for testing on the Geiger-Muller counter. No evidence of radioactivity was found.

9. J. J. Burke's Show in Dixon Street, Queenstown.

Several years ago silver-lead ore was discovered in a limestone pug in Dixon Street, Queenstown, at the base of Sandstone Hill. A shaft has been put down to 40 ft. in this pug and several feet of driving done. The Mt. Lyell Mining and Railway Coy., Ltd., put down three bores in this area.

The present investigation has been a structural one and it has been shown that the Sandstone Hill is Crotty Sandstone such as forms the King Hill and the Smelter's Ridge in Zeehan and the ridge west of the Mariposa on the Zeehan-Queenstown road.

Stratigraphically beneath the Crotty Sandstone the Gordon River Limestone occurs and it is usual to find pug along the contact. In Queenstown the structure is complex and the Sandstone Hill forms the sharp nose of a plunging syncline. The pug has been noted along various points around the nose. Unfortunately the town area of Queenstown consists of alluvial and it was therefore impossible to trace the limestone.

Its position has therefore been inferred from the general structure of the syncline.

From the similarity to the Mariposa and the Oceana areas in Zeehan in both which places limestone pug occurs carrying galena and grading down to solid limestone carrying replacement lodes of galena it is likely that the Dixon Street pug will also grade down to the limestone carrying galena lodes.

A boring programme has been outlined.

The North Pieman Mineral Area.

The greater part of the year has been devoted to mapping of one southern portion of this area. During the period from January to the end of May 12 trig., stations were erected between Mount Black on the east and Brown's Plains on the Corinne road on the west.

These 12 stations, together with that on the Pincher were erected at the end of 1949. The Burn's Peak Trig. erected by the Electrolytic Zinc Company and the trig. on the Mount Donaldson erected by the Forestry Commission constitute the triangulation network originating from the Mines Department Rosebery Baseline put in in 1930.

Observations were taken from each trig. with the exception of Mount Donaldson which was an intersected point. Sixteen rounds of angles were taken and eight observations of the vertical angle were taken at each end of each line of sight. The average closing angle of triangles was 11 inches and adjustment of triangles in quadrilaterals was made in the normal manner.

A latitude observation, at Rosebery, was available from the previous triangulation and a longitude observation was made at the same point.

From these data, the Traverse Mercator co-ordinates of all trig. points were calculated.

During the later part of the year templates for all photographs were made and the slotted template lay-down of the area was made in the normal manner, using the trig. points as points of control. The principal and pass points have been transferred from the base board to kodatrace sheets each of which covers an area of 10,000 yards by 15,000 yards with gridlines spaced at 1000 yards interval.

Kodatrace overlay sheets for transfer of topographical detail have been made for each photograph. Some geological interpretation of photos. in the Huskisson syncline area has been done and overlay sheets prepared. Transfer of this detail to map sheets awaits the arrival of the Anharmonic Rectifier.

As work in the North Pieman area has been almost exclusively confined to survey and topographic mapping no comments of the geology can be made as additional to those of the previous year.

Geologist G. Everard, B.A., reports:—

Field work for the year was concerned with the limestone resources of Tasmania.

Early in the year a brief examination was made, in the company of Geologist Hughes, of limestone deposits north of Launceston, including Beaconsfield, Flowery Gully, Bangor, Five Mile Bluff and Bridport, where outcrops of Ordovician Permian and more recent limestones occur.

Subsequently, investigation of the limestone resources of Flinders Island, commenced the previous year, was taken up and completed. No limestones were found on Flinders Island of later age than the Kainozoic Era. The geological history of the Island commenced in the Silurian times with the geosynclinal deposition of sediments, now metamorphosed to slates and quartzites. These deposits were intruded by acid magmas in Devonian times, up lifted and eroded. Subsidence below sea-level in the Kainozoic Era resulted in the deposition in shallow water of a foraminiferal limestone, interbedded with lava flows and resting directly on the igneous rocks and on the eroded remnants of the Silurian slates and quartzites. This limestone was found to be extensive and, in some places, of considerable thickness. Fifty samples were taken and sent for analysis, and gave an average grade of about 75 per cent carbonate of lime. Subsequent petrographic examination showed that these limestones were of an

extremely porous nature and might be very easily crushed to the requisite fineness for use as agricultural lime. A suite of maps showing the limestone deposits in detail, as well as the general geological structure and tectonic relationships, was prepared to illustrate the report on the limestone resources of Flinders Island.

A limestone quarry close to Proctors Road in the Hobart area was examined for the purpose of obtaining specimens for microscopic investigation. The investigation revealed that much of the lime content of the rock could not be made available for agricultural purposes, as it was held in combination with silica as the mineral wollastonite.

The possibility of limestone deposits occurring on Bruny Island was investigated by extensive traverses on North and South Bruny. The Island consist very largely of areas of dolerite, sometimes overlying sediments, but often with no observable base. Except for thin calcareous beds intercalated with other sediments, no limestones were found, and considerable alteration and silification of original sedimentary strata was apparent in some localities.

During the year several microscopic investigations were made and attention was given to equipment required for petrographic and mineragraphic research.

APPENDIX II.

REPORT OF THE CHIEF CHEMIST AND METALLURGIST.

The Chief Chemist and Metallurgist (Mr. W. St. C. Manson), Launceston, reports:—

DETERMINATIONS AND ANALYSES.

Determinations were made of gold, silver, tin, lead, aluminium, arsenic, antimony, barium, bismuth, calcium, cadmium, chlorine, chromium, copper, iron, magnesium, manganese, molybdenum, nickel, potassium, phosphorous, silicon, sodium, sulphur, titanium, thorium, tungsten, zinc, zirconium, and calorific values of coal.

Analyses were made of ores, minerals, rocks, mill and research products associated with ore dressing investigations, clays, coals, water, &c. The number of determinations approximated 4500.

ORE DRESSING INVESTIGATIONS.

Jamesonite-Blende Ore/Waratah (R 219.)

A sample from No. 9 level Mt. Bischoff Extended Mine, Waratah, was submitted by the Director of Mines for investigation of concentration by flotation of the contained jamesonite and zinc blende. This sample was suggested as being an extension of the Newman and Tatchell prospect of which two previous investigations have been made (R 177 and R 204). The sample contained: lead 4.5 per cent, antimony 2.9 per cent, zinc 13.8 per cent, arsenic 2.6 per cent, copper 0.46 per cent, iron 19.2 per cent, tin 0.86 per cent, sulphur 26.9 per cent and silver 3.7 ozs. per ton.

Previous investigations showed very intimate association of the major economic minerals, jamesonite and blende which caused serious limitations to concentration into separate lead-antimony and zinc concentrates and this investigation showed similar results. Best selective flotation concentration for jamesonite resulted in a concentrate containing lead 18.4 per cent, antimony 12.3 per cent, and zinc 18.6 per cent with recoveries of lead and zinc of 60 and 20 per cent respectively. Selective flotation of the zinc blende resulted in a recovery of 70 per cent in a concentrate containing 38 per cent of zinc and 3.7 per cent of lead.

Bulk flotation of the lead antimony and zinc minerals resulted in recoveries of lead and zinc of 80 and 90 per cent and the concentrate assayed lead 9.1 per cent, antimony 5.7 per cent, zinc 30.9 per cent, tin 0.99 per cent, copper and arsenic 1.1 per cent and silver 8 oz. per ton.

Concentration of cassiterite by grinding flotation of sulphides and tabling resulted in a recovery of thirty-three per cent in a low grade concentrate.

Aberfoyle Tin N.L. (R 220 and R 221.)

R220.

Roasted jig and table middlings stored near the company's mill for some years and containing 3.3 and 2.3 per cent of tin as cassiterite and 0.5 per cent of tungstic acid as wolfram, were investigated for a method of concentration. The samples also contained several per cent of zinc, copper and sulphur. Previous treatment had caused the formation of composites containing tin and tungstic acid and after grinding and sizing to minus 72 mesh B.S. and concentrated by tabling, tests were made on the table concentrates to explore the prospects of breaking up the conglomerated minerals with acid treatments. After acid treatment, washing and drying, the concentrates were magnetically separated and the non-magnetics determined for tin and tungstic acid content and tin recovery.

The table concentrate from the jig middlings (R220) amounted to 3.42 per cent and contained 47.2 per cent of tin and 7.8 per cent of tungstic acid and represented a 50 per cent recovery of the tin. After magnetic separation the magnetic product contained 35.7 per cent of tin and 12.1 per cent of tungstic acid and the non-magnetic product contained 62.3 per cent of tin and 2.6 per cent of tungstic acid. The loss of the tin in the magnetics amounted to 45.9 per cent of the tin in the table concentrate or 23 per cent of the tin in the total sample.

Treatment with dilute hot hydrochloric acid or sulphuric acid with and without salt resulted in good separation of the minerals and although good recovery and grade were obtained in the non-magnetic tin concentrates some tin still remained with the magnetic wolfram.

A sale grade tin concentrate from concentration, acid treatment and magnetic separation contained 68.1 per cent of tin and 0.3 per cent of tungstic acid with a recovery of 53.5 per cent of the tin.

The several magnetic products contained 27.2 per cent of tungstic acid and 6.4 per cent of tin. Forty-five per cent of the tin reported in the table tailings.

Table concentration of the table middlings (R221) after grinding and secondary concentration yielded only a recovery of 16.8 per cent of the tin and, consequently, test work was abandoned.

R226.

This investigation deals with an extension of activities reported last year (R216, 7 and 8) of sink-float concentration in a twenty-inch separatory cone, at Rossarden, using ferrosilicon and magnetite as a heavy media.

Coarse mill tailings from mill operations in March and April amounting to 5700 pounds were processed at media densities ranging from 2.8 to 2.9 with the following results:—

Products	Weight		Tin		Distribu-
	Pounds	Per Cent	Per Cent		
Float at 2.79	25	84.6	0.06	23.9	March run
Float at 2.86	238	8.0	0.24	9.0	
Float at 2.90	127	4.3	0.53	10.7	
Sink at 2.90	92	3.1	3.86	56.4	
Composite	2963	100.0	0.21	100.0	
Float at 2.80	2152	76.9	0.04	16.8	April run
Float at 2.85	533½	19.1	0.15	15.2	
Sink at 2.85	114½	4.0	3.12	68.0	
Composite	2800	100.0	0.18	100.0	

A weighted composite of the two sink products containing 3.4 per cent of tin, 1 per cent of tungstic acid and 6.1 per cent of sulphur and 2.5 per cent of copper, was submitted to concentration tests as follows:—

No free cassiterite or wolfram was observed in the sink product and concentration treatment consisted of ball-mill grinding and wet screening to minus 60 mesh B.S., flotation rejection of sulphides, classification and table concentration. Recoveries amounted to 73.3 per cent and 84.2 per cent of tin and tungstic acid in the sink product and the concentrate contained 39.7 per cent of tin and 13.3 per cent of tungstic acid.

Magnetic separation resulted in a non-magnetic tin concentrate assaying 61.6 per cent of tin and 1.1 per cent of tungstic acid. Recovery of tin in the sink product amounted to 69.2 per cent or 43 per cent in the original tailings. The magnetic wolfram product contained 12 per cent of tin and 48.5 per cent of tungstic acid.

A sample of ¾" screen oversize to rolls was submitted to similar treatment. The sample contained 0.57 per cent of tin and heavy media concentration resulted in a recovery of 91 per cent of the tin in a sink product assaying 3.7 per cent of tin and 1.3 per cent of tungstic acid.

Complete treatment resulted in a 67 per cent recovery of the tin and 47 per cent of the tungstic acid and the tin and wolfram concentrates contained 67 per cent of tin and 0.3 per cent of tungstic acid and 61.8 per cent of tungstic and 0.8 per cent of tin.

R 238 Wolfram Residues.—Containing 54 per cent of tungstic acid and 9.5 per cent of tin were submitted to investigations for separation. The material represents a mill middling product and is approximately 60 per cent minus 200 mesh. Precision magnetic separation not practical in commercial mill operations showed that four to five separate magnetic products were obtainable and that the high tin contamination was confined to the least magnetic product. This least magnetic product showed a tin content ranging from 9 to 40 per cent. Investigations resulted in a satisfactory separation by prior acid treatment which caused appreciable increase in tin recovery with an acceptable quality magnetic wolfram product as shown below:—

Wolfram Concentrate	Per Cent	
	WO ₃	Sn
Magnetic treatment only	62.6	1.45
Acid treatment followed by magnetic separation	71.6	0.56

Tin concentrates contained approximately 60 per cent of tin and one per cent of tungstic acid, but with acid treatment the tin recovery as the non-magnetic product inclined from 54 to 81 per cent. Acid treatment was with 10 per cent boiling sulphuric acid.

Renison Associated Tin Mines R225.

The established process in the mill for separating sulphides prior to concentration of the cassiterite is by flotation and the company was approached to test an alternative process utilizing the magnetic properties of the predominant sulphide, pyrrhotite. A sample of ore pulp

substantially minus 150 mesh B.S. and containing 0.7 per cent of tin and 29 per cent of sulphur was submitted to separation by magnetic treatment and by flotation for purposes of comparison. The process failed to show encouraging results as 72 per cent of the tin was lost in the magnetic product which amounted to 94 per cent by weight. Flotation removed 78 per cent of the sample with a loss of only 20 per cent of the tin and the assay value of which amounted to 0.14 per cent of tin.

South Comet Zinc-Lead Ore.

R222-R224.
R227-R237.

The economic minerals in this ore are galena and marmatite with associated silver minerals. The ores occur in alternate rich and poor shoots and in one shoot the galena predominates and in the next marmatite. Past mining operations have apparently been confined to the lead-rich shoots. Major gangue minerals are manganese-siderite and in some cases pyrite. The samples obtained for investigations showed generally low lead contents ranging from 1 per cent to 5.7 per cent and high zinc with an upper range of 20.6 per cent. The following table shows the assay values of 11 samples.

No.	Lode	Adit	Per Cent		
			Lead	Zinc	Pyrite
R227	1	1	1.6	9.0	48.7
R228	3	1	1.4	6.1	2.3
R229	3	1	5.7	4.0	5.9
R230	3	1	5.7	18.6	3.0
R231	1	3	3.7	14.1	58.9
R232	1	3	4.8	20.6	53.1
R233	1	3	3.9	12.3	35.0
R234	2	3	1.0	4.5	26.9
R235	3	1	1.0	6.0	1.8
R236	3	1	4.5	2.6	5.5
R237	3	1	4.3	20.2	36.4
Average			3.4	10.7	25.2

The economic minerals occur as massive high grade "Firsts" of large dimensions grading down to finest grains of somewhat intimate association which require approximately minus 100 mesh B.S. grinding for release from gangue minerals.

R222, R223, R27-37 (being an equal weight composite of R227, R228, R234 and R235) R27-37 (being an equal weight composite of R227 to R237 inclusive) and R232 were selected as mineral types for ore dressing purposes and were submitted to selective flotation tests for the production of lead and zinc concentrates with results as shown in the following tabulations:—

Head Assays	Numbers				
	R222	R223	R27-37	R27-35	R232
Lead, per cent	9.3	2.4	3.4	1.25	4.8
Zinc, per cent	8.6	13.0	10.7	6.4	20.6
Pyrite, per cent	4.0	1.9	25.0	19.9	53.0
Silver, ozs. per ton	6.8	1.8	1.9	0.9	1.2
Lead Concentrates—					
Lead recovery, per cent	91.9	93.9	82.9	78.8	83.8
Lead, per cent	70.6	59.0	61.9	38.4	62.6
Zinc, per cent	5.8	11.0	5.8	6.5	7.1
Iron, per cent	N.D.	N.D.	6.8	12.9	7.0
Silver, ozs. per ton	49.4	N.D.	28.8	18.6	16.1
Zinc Concentrates—					
Zinc recovery, per cent	89.4	96.0	91.4	84.1	91.8
Zinc, per cent	53.9	55.0	52.2	43.1	54.2
Lead, per cent	2.0	0.4	1.7	1.0	0.5

The lead concentrates contained the following maxima of impurities: bismuth 0.01 per cent, antimony 0.15 per cent and arsenic 0.13 per cent.

The variable nature of the ore required various reagents for effective selective flotation but generally lime, cyanide, sodium sulphite, zinc sulphate, ethyl xanthate and a frother were necessary for lead flotation.

Zinc was floated from the lead flotation tailings using lime, copper sulphate, amyl xanthate and eucalyptus phellandrine.

Previous to the laboratory ore dressing investigations, an examination was made of the installed gravity concentration mill which consists essentially of jaw crusher and rolls to produce a minus 8 mesh product, screened to separate the crushed ore into two sizes (plus and minus 18 mesh) and concentrated on Wilfley tables. High zinc and low lead is the normal feed and very little table concentrate is made unless the galena content is high. About 70 per cent of the ore reports as table

middling which is retreated in a single compartment Hartz type jig. Galena only is concentrated at low efficiency not exceeding 40 per cent at approximately a rate of one ton per hour.

Mill operations were examined and reported on including possible improvements. Selective flotation tests showed substantial improvement in recovery of the galena and in addition major recovery of the marmatite, both as high grade concentrates.

In conclusion I desire to record my appreciation of the services rendered by the staff.

APPENDIX III.

REPORT OF THE CHIEF INSPECTOR OF MINES.

The Chief Inspector of Mines (Mr. W. H. Williams) reports:—

MINES AND WORKS REGULATION ACT.

Employment.

The average number of men employed in mining, quarrying and metallurgical operations was 5892, as compared with 5659 for the previous year.

Programmes of development and production continued to be retarded by a shortage of labour and a similar disability was experienced in planned investigation and exploration of mineral potentialities.

Accidents.

The total number of accidents, registered under the provisions of Section 23 of the Act, was 62, as compared with 65 for last year.

The appended tables relate to—

- (1) Fatalities and non-fatal casualties at mines, quarries and works which, latter, involved absence from work for not less than 14 ordinary days; and
- (2) The average number of persons employed and the rate, per 1000 employed, of fatal and non-fatal injuries in the State and in each Mineral Division.

The accident incidence was substantially less in the Northern and Southern division, there was a similar number of accidents in the West division, the number of accidents was less in the North-Western division and there was an increase in the number of accidents in the Eastern division.

Two persons were killed and 62 persons were injured in the 62 accidents. Thirty-four accidents occurred at metalliferous mines, ten being allied with surface operations and twenty-four being related to underground practices. Ten accidents happened in the underground workings of coal mines, seventeen were associated with operations at works and one accident occurred in a quarry.

A serious accident occurred in the underground workings of a metalliferous mine, when, as the result of successive falls of ground, one miner was killed and a second miner was severely injured. The former was conversing with the working party, in a drive, when a fall of ground happened and partially buried him. The latter was proceeding with rescue work when a quantity of ground fell from the same location and struck him.

The second fatality happened when a watchman sustained burns, to which he succumbed, as the result of an ignition of vapourising power kerosene.

Thirteen accidents were due to falls of ground and coal, ten occurring in underground workings and three being associated with operations in surface mines. Six persons were injured in trucking mishaps, one person sustained injuries when a transport lorry rolled over an embankment, one person sustained an electric shock and strained his shoulder muscles when breaking away from a live conductor. There were forty accidents of a miscellaneous nature, twenty-one being related to underground mining practices and nineteen being associated with surface operations at mines and works.

Health and Sanitation.

There was no relaxation in the attention directed by inspectors to matters governing the health of persons employed in the industry. Konimeter surveys were made of atmospheric dust and consideration was given to the implementation of measures directed to depressing the number of particles of dust per cubic centimetre below any recognised standard of an upper limit of safe inhalation. Thermometrical conditions were not excessive and corrective measures were sought where the circulation of air was found to be deficient. Whilst mechanically controlled ventilation is the practice at the majority of mines natural ventilating conditions still exist. Adequate volume displacement, minimising of short-circuiting and effective control of circulation are essential for equitable ventilation but deficiencies continued to be encountered.

Prosecutions.

There were no legal proceedings, instances of contravention of the provisions of the Act being satisfied with cautionary measures.

Inspectorial.

The inspectorial staff was maintained at normal level and the extent to which officers functioned, in matters relating to health and safety, is revealed in the appended reports.

As the imposed duties of Chief Inspector of Mines have become excessive, a further effort is to be made to obtain the services of a suitably qualified person to function as Assistant Chief Inspector. The major difficulty, in this matter, has been the unavailability of persons expertly qualified in both coal and metalliferous mining practices.

TABLE showing Rate per Thousand Killed and Injured in different Mineral Divisions for the Year 1950.

Mineral Division.	Average Number of Men Employed.	Number of Accidents.	Number of Persons		Total Number Killed & Injured.	Average per 1000 Killed and Injured.	Average per 1000	
			Killed.	Injured.			Killed.	Injured.
Northern and Southern	2477	15	1	14	15	6.056	.404	5.652
North-Eastern	235	4	...	4	4	17.021	...	17.021
Eastern	583	18	1	18	19	32.590	1.715	30.875
North-Western	439	4	...	4	4	9.111	...	9.111
Western	2158	21	...	22	22	10.198	...	10.198
Total	5892	62	2	62	64	10.862	.339	10.524

COMPARATIVE Table of Statistics of Accidents in and about the Mines of Tasmania from 1st July, 1892, to 31st December, 1950.

Period.	Number of Miners Employed.	Number of Accidents.	Number of Persons		Total Killed and Injured.	Average per 1000 Killed and Injured.	Average per 1000.	
			Killed.	Injured.			Killed.	Injured.
1 July, 1892, to 30 June 1893	3295	28	4	25	29	8.800	1.214	7.586
" 1893 " 1894	3403	25	7	20	27	7.934	2.057	5.877
" 1894 " 1895	3789	26	4	24	28	7.390	1.058	6.332
" 1895 " 1896	4160	22	7	16	23	5.529	1.682	3.847
" 1896 " 1897	4303	36	7	31	38	8.831	1.627	7.204
" 1897 " 1898	5530	36	13	33	46	8.318	2.351	5.967
" 1898 " 1899	6180	35	9	34	43	6.957	1.456	5.501
" 1899 " 1900	6834	19	7	16	23	3.365	1.024	2.341
" 1900 " 1901	7017	29	8	23	31	4.417	1.140	3.278
" 1901 " 1902	6438	38	7	35	42	6.524	1.088	5.437
" 1902 " 1903	6484	44	6	43	49	7.557	0.925	6.632
" 1903, to 31 Dec., 1903	5604	27	8	20	28	4.977	1.428	3.569
1 Jan., 1904 " 1904	6192	73	9	65	74	11.951	1.454	10.497
" 1905 " 1905	6586	34	7	30	37	5.618	1.063	4.555
" 1906 " 1906	7004	65	4	61	65	9.280	0.571	8.709
" 1907 " 1907	7516	68	6	64	70	9.314	0.798	8.515
" 1908 " 1908	6464	60	6	58	64	9.900	0.928	8.972
" 1909 " 1909	6054	54	6	49	55	9.085	0.991	8.093
" 1910 " 1910	5770	63	8	57	65	11.265	1.386	9.878
" 1911 " 1911	5247	80	4	77	81	15.437	0.762	14.675
" 1912 " 1912	5566	60	53*	53	106	19.044	9.522	9.522
" 1913 " 1913	6106	64	6	60	66	10.809	0.982	9.826
" 1914 " 1914	4741	69	9	62	71	14.977	1.896	13.081
" 1915 " 1915	3908	71	6	67	73	18.679	1.535	17.144
" 1916 " 1916	3864	53	2	51	53	13.716	0.517	13.198
" 1917 " 1917	4050	50	2	48	50	12.345	0.493	11.852
" 1918 " 1918	4279	50	5	45	50	11.684	1.168	10.516
" 1919 " 1919	4413	58	1	57	58	13.143	0.226	12.917
" 1920 " 1920	5364	52	2	50	52	9.694	0.372	9.322
" 1921 " 1921	4011	40	3	37	40	9.972	0.748	9.224
" 1922 " 1922	3835	31	4	27	31	8.083	1.043	7.040
" 1923 " 1923	4785	64	2	63	65	13.584	0.417	13.166
" 1924 " 1924	5264	72	1	73	74	14.057	0.189	13.867
" 1925 " 1925	5110	62	2	61	63	12.328	0.391	11.937
" 1926 " 1926	5309	54	5	52	57	10.736	0.941	9.794
" 1927 " 1927	5044	70	5	65	70	13.877	0.991	12.886
" 1928 " 1928	5170	47	1	46	47	9.090	0.193	8.897
" 1929 " 1929	4986	59	17	55	72	14.440	3.409	11.031
" 1930 " 1930	4606	55	4	52	56	12.158	0.868	11.289
" 1931 " 1931	4391	38	8	35	43	9.792	1.821	7.970
" 1932 " 1932	4605	71	4	67	71	15.418	0.868	14.549
" 1933 " 1933	4510	77	7	71	78	17.295	1.552	15.742
" 1934 " 1934	4843	108	4	105	109	22.506	0.826	21.680
" 1935 " 1935	5409	142	1	141	142	26.252	0.184	26.067
" 1936 " 1936	5432	97	4	96	100	18.409	0.736	17.673
" 1937 " 1937	5876	107	5	103	108	18.379	0.850	17.529
" 1938 " 1938	5891	103	2	102	104	17.654	0.339	17.315
" 1939 " 1939	5928	87	2	87	89	15.013	0.337	14.676
" 1940 " 1940	6000	103	2	102	104	17.333	0.333	17.000
" 1941 " 1941	5856	85	5	85	90	15.368	0.853	14.515
" 1942 " 1942	5572	89	4	86	90	16.152	0.718	15.434
" 1943 " 1943	5535	73	6	67	73	13.188	1.084	12.104
" 1944 " 1944	5439	73	4	71	75	13.789	0.735	13.054
" 1945 " 1945	5178	46	2	44	46	8.883	0.386	8.497
" 1946 " 1946	5255	63	1	62	63	11.989	0.19	11.798
" 1947 " 1947	5316	74	...	74	74	13.920	...	13.920
" 1948 " 1948	5399	67	3	64	67	12.409	0.555	11.854
" 1949 " 1949	5659	65	1	64	65	11.484	0.176	11.308
" 1950 " 1950	5892	62	2	62	64	10.862	0.339	10.524

* Mount Lyell disaster.

APPENDIX IV.

REPORT OF THE CHIEF INSPECTOR OF EXPLOSIVES.

The Chief Inspector of Explosives (Mr. W. H. Williams) reports:—

EXPLOSIVES ACT, 1916.

The following quantities of explosives were imported through the ports of Hobart, Launceston, Devonport, Burnie, Regatta Point and Currie:—

	lbs.
Monobel	88,700
Gelignite	1,522,200
Blasting gelatine	30,400
Blasting Powder	22,650
Ligdyn	35,900
Ajax	49,500
Detonators:	No.
Ordinary	450,000
Electric-Ordinary	58,500
Electric-Delay-Action	14,940
Detonating Fuse:	Feet.
Cordtex	250,000

Compounds were of "Polar" manufacture and appropriate care was exercised to ensure that they were in good chemical and physical condition at the date of importation.

The cycle of importation, storage, and consumption was kept under surveillance and provided a rational balance, which mitigated long periods of storage and contributed to an absence of faulty compounds.

Supervision was regularly exercised in the landing of inward shipments of explosives. There were no untoward incidents and the improved structure of cases was found to have been maintained.

There were no serious explosive accidents. In one case, a small boy found a detonator and struck it with a hammer. The detonator exploded but the boy escaped injury.

A detonator magazine was destroyed by an explosion of the contents as the result of a youth forcing an entry and igniting a length of fuse brought into contact with free detonators. The magazine contained several thousand detonators. Before igniting the fuse, the youth removed a box of one thousand electric detonators and several hundred ordinary detonators. The former and many of the latter were recovered.

Large quantities of fireworks were examined and tested and authorised for importation and sale. One type of rocket was prohibited owing to a disposition to prematurely explode.

INFLAMMABLE LIQUIDS ACT, 1929.

There was marked activity in the installation of petrol pumps, building of compounds for storage in 44-gallon drums, alteration to bulk-storage depots and in the provision of new terminals for the storage of inward shipments of petrols, kerosenes and heavy oils. Progress was made in the building of new terminals at Devonport and Bell Bay. There was a considerable volume of work in checking designs and in reconciling the lay-out of storage and operational units in order to provide for a satisfactory control of external and internal hazards.

Lack of recognition of fire and explosion hazards continued to characterise indiscretions in the keeping of full and empty 44-gallon drums. Difficulties in policing the keeping of drums of inflammable liquid continued to lessen the effective regularising of methods of storage in the interests of public safety.

One person sustained burns to which he succumbed, as the result of an open ignition of vapourising power kerosene. A 44-gallon drum of kerosene was being stored in a building in which there were three "Valour" heaters. It is assumed that one of the heaters was being filled from the drum when there was a spillage on to the hot surface of the heater. Immediate vapourisation and an open explosion resulted. The drum "torched" and acted as a feeder to the ensuing fire. The building and its contents were totally destroyed.

Two persons lost their lives as the result of an open explosion of vapourised power kerosene allegedly being used to fuel a lamp in the vicinity of a camp-stove.

The fire and explosion hazard allied with inflammable liquids was additionally exemplified when the internal base of a pumphead ignited as the result of leaking petrol vapourising in the presence of a short in the electrical wiring; when petrol vapour from a leak in a 4-gallon container, in the boot of a car, exploded; and when the exterior base of a pumphead caught fire as the result of a back-fire from a motor vehicle igniting a spillage of petrol. In a previous case, an electric globe burst and ignited petrol vapour at the bowl of a pumphead.

Consideration was given to the preparation of regulations governing the handling and storage of dangerous commodities whether liquid, gaseous or solid but pressure of other duties has delayed their final assemblage. It is planned to provide for staff additions in order that fire and explosion hazards may be brought within reasonable control in the interests of public safety.

APPENDIX V.

REPORTS OF INSPECTORS OF MINES AND EXPLOSIVES.

Inspector K. A. Rae, Queenstown, reports:—

Employment.

The Mount Lyell Mining and Railway Company Limited employed an average of 1495 persons, representing an increase of 7 employees as compared with the previous year. Sixty-three men were employed in the Zeehan and adjacent areas, making a total of 1558 persons employed in mining and metallurgical operations in the inspectorate.

Accidents.

Five accidents resulting in non-fatal injuries to six persons, were registered under the provisions of the Mines and Works Regulation Act, as compared with 17 accidents, involving a like number of persons in non-fatal injuries, recorded for the previous year.

One accident, registered under the provisions of the Inspection of Machinery Act, was investigated and reported to the Inspector of Machinery.

As additional to the above accidents, a road fatality at Zeehan was investigated and the inquest was attended. This fatality occurred when a motor truck got out of control, rolled over an embankment and overturned. Twenty-six persons employed by the Zeehan Explorations, were returning to Zeehan from the Oceana Mine. Three persons were killed and three were seriously injured. The site of the accident was outside of the mineral lease occupied by the Company.

Four accidents were allied with surface operations and one occurred in underground workings. In two cases the injuries were due to misadventure, whilst the remainder resulted from lack of care.

Of the surface accidents a contract miner and his mate were engaged in "bulling" toe holes at an opencut bench when a rock slab broke away and portion of it pinned the miner before he could jump clear. He sustained a fractured pelvis, ruptured bladder and lacerations of his right foot and was caused to lose 187 workdays.

A light truck at an open-cut working, left a road when it was making a sharp left hand turn and fell over a steep bank. The driver and passenger were both flung clear of the truck before it rolled to the bottom of the bank. The driver sustained a fractured transverse process of the lumbar region which caused him to lose 38 work-days whilst the passenger suffered a similar injury and also a severe concussion which caused a loss of 79 work-days.

An apprenticed electrician was assisting in conveying a motor to a repair shop when the machine fell from a hand trolley on which it had been placed. His right foot was struck by the motor and injured to an extent sufficient to cause him to lose 39 working days.

A welder attempted to grind a cold set chisel on a power driven emery wheel. He had sharpened the cutting edge and then proceeded to remove a burred portion from the striking end. The chisel became caught between the wheel and tool rest. This caused a sharp upward jerk of the sharp end and resulted in his thumb being severed at the top joint. In this case, it was found that the welder had not adjusted the tool rest properly before grinding. He lost 37 workdays.

In an underground workings, a miner was engaged in shovelling from a heap of ore. A piece of ore rolled two or three feet down the rill and struck his left hand in a manner that severed a tendon of his index finger. He lost 40 working days.

Safety.

Inspection duties have been regularly directed to the production and maintenance of safe working conditions. In general, excellent co-operation has been afforded in matters of safety.

In all mining operations, strict attention has been directed towards the correction of unsafe ground before persons are allowed to work in the danger area. Several instances were encountered where examinations revealed unsafe conditions and where it was necessary to ensure precautionary measures under direct supervision.

One fall of ground occurred in an underground working. A mass of ground supported by a small rock pillar and numerous short bulks, built on top of a filled portion of a stope, settled from a greasy head and fell about two feet.

Ladderways, shaft equipment, lighting conditions, ore pass covers, safety ropes, opencut faces, explosives in use, surface and underground transport, and other details of mining practice have been regularly examined in the interest of safety.

In metallurgical works and workshops, allied with mining, similar examinations have been made to attain safe operating conditions.

Ventilation.

The ventilation of underground workings and surface installations received customary attention and proved, in most instances, satisfactory.

Attention was directed to one section of underground workings where additional ventilation was necessary. Improved conditions resulted from the immediate use of a small pressure fan and vent-tube and, later, from the installation of a 10,000 c.f.m. suction fan. Numerous konimeter samples were taken to determine the dust content of underground atmospheres, and, where results indicated that improvement could be effected by additional ventilation, necessary corrections were made. Temperature and air velocity surveys have also been conducted.

Health and Sanitation.

Supervision has been maintained of conditions affecting the health of employees in mines and works. Routine improvements were made in crib-places, changing and bathing accommodation and latrines, which, mainly, have been kept in reasonably good order.

Explosives.

No accidents were recorded in connection with the handling of explosives. All types of explosives have given satisfactory results during storage and in actual use. A quantity of safety fuse that had, inadvertently, been held in store for over twelve months was tested and found in good condition.

Machinery.

Maintenance and protection of machinery and appliances received the attention required under the provisions of the Mines and Works Regulation Act. Occasional conferences were held with the Inspector of Machinery with regard to safety measures.

In one instance where a mine was being re-habilitated after several years of inactivity, it was necessary to condemn the old cages and winding ropes as unfit for further work. Conditioning of the cages and replacement of the ropes were necessary.

The Inflammable Liquids Act.

Inspections were made of the various premises licensed under the Inflammable Liquids Act. In one instance the owner of a petrol transport business was warned against improper storage of empty 44-gallon petrol drums. This matter was corrected.

The Workers' (Occupational Diseases) Relief Fund Act.

Certificates were received and registered in respect of 138 new employees in the Queenstown district and 28 in the Zeehan district. Two persons so examined were found suffering from pulmonary complaints which precluded them from mining occupations. All others examined were certified as being free from disease.

Six persons made application for examination for the effect of industrial occupations and three were found to be affected.

A comparative analysis of the affected persons is as follows:—

	1949.	1950.
Incapacitated (affected by silicosis 100 per cent)	2	1
Partial incapacity (over 50 per cent affection)	2	1
Partial incapacity (under 50 per cent affection)	2	1
Totals	6	3

The following tabulation illustrates the age, length of service in the mining industry and some details of the examination of the affected persons:—

Certified Incapacity Due to Silicosis.	Age of Person Affected.	Remarks.
% 100	Years. 62	Employed 1913 at Zeehan Smelters for 9 months. Underground mining at Broken Hill mines from 1913 to 1926. Quarry work South Australia 1926-1932. Employed as underground miner at Mount Lyell Mines 1932-1944 when he was examined and certified as affected by 20 per cent silicosis. 1944-1950 engaged at Mount Lyell in surface occupations. Died after short illness. Seventeen years underground and 23 years on the surface. Between 1905 and 1928 was employed by the Mount Lyell Company. From 1928 to 1950 employed by the Mount Lyell Company as a labourer at the Machine shops (surface). Examined 1948 and declared 70 per cent affected by silicosis and was re-examined this year.
70	67	Employed underground as a miner at the Mount Lyell Company's mines from 1927 to 1948 when he vacated mining and has not worked in the industry since.
40	39	

The Explosives Act.

Supervision was maintained of the importation, landing, and storage of explosives.

Explosives landed at Regatta Point for Queenstown were—

	lbs.
Polar A.N. Gelignite "50", 1½" x 13"	670,450
Polar A.N. Gelignite "60", 7" x 26"	100,300
Polar Quarry Monobel 7" x 20"	8,750
Total	779,500
	Feet.
Plastic Cordtex Detonating Fuse	141,000
	No.
No. 6 Detonators, Ordinary	100,000
No. 6 Detonators, Electric	1,500
Fuse Igniters	20,000
	Cases.
Safety Fuse	100

In addition, 155,000 No. 6 detonators were brought by rail to Queenstown.

All safety fuse tested was found to be satisfactory in respect of burning rate and quality.

Magazines, licensed for the storage of explosives, were maintained in a satisfactory condition.

PRODUCTION AND DEVELOPMENT.

Copper.

The Mount Lyell Mining and Railway Company Limited.—The output from all operations was 1,499,914 tons of ore mined and 113 tons of copper precipitate recovered from the mine drainage water, representing an increase of 27,513 tons of ore and 11 tons of copper precipitate, as compared with the previous year.

Surface mining at the West Lyell group of mines resulted in 1,444,132 tons of ore, representing an increase of 33,349 tons, compared with last year. Additional to this, 19 tons of copper precipitate was recovered from drainage water.

Collaterally with ore production, 840,547 tons of waste rock was mined and transported to dumps, thus making a total of 2,284,679 tons of material mined at these workings.

Production of ore from underground workings again declined owing to labour difficulties. Operations at the North Lyell mine ceased owing to the lack of miners and the Royal Tharsis mine could not be fully manned. An output of 55,782 ore tons represents a decrease of 5836 ore tons, compared with last year.

The following tabulation represents the disposition of the ore and copper precipitates produced from all operations:—

	Ore Mined. Tons.	Copper Precipitate. Tons.
West Lyell Opencut Mines	1,444,132	19
Royal Tharsis Mine	55,782	Nil
North Lyell Mine	Nil	86
Lyell Comstock Mine	Nil	8
Totals	1,499,914	113

Increased mechanisation of mining operations at West Lyell mines, is constantly required to maintain the large tonnage production and much capital has been expended in this matter.

The installation of a bit-dresser, for sharpening heavy cutting tools of the churn drill, has enabled well-hole blasting to be used in a more extensive manner and this has been a large factor in maintaining tonnage.

The introduction of multi-second delay firing of groups of churn-drill holes has improved the technique of this form of blasting.

Nine Euclid trucks, of 20-ton capacity, have been received and are proving successful in operation. These trucks are of American manufacture and, with their greater motor power and manoeuvrability, are better suited than the older types of truck for the work at West Lyell.

A new well equipped workshop, for maintenance of mining plant, was constructed at West Lyell and was in commission towards the end of the year.

A new 4½-cubic yard capacity power shovel was delivered at Hobart from America and portion was transported to West Lyell for assembly.

At the Reduction Works, the concentration plant was in operation for 349 days and treated 1,498,976 tons of ore for a recovery of 30,612 tons of copper-bearing concentrate and 60,888 tons of iron-pyrite concentrate.

The smelters operated for 232 days and treated 29,403 tons of copper-bearing concentrate and 112 tons of copper precipitate for an output of 6,951 tons of blister copper, which, after treatment in the electrolytic refinery, yielded 6,898 tons of cathode copper, 23,994 oz. of silver and 4,552 oz. of gold.

A quantity of 51,105 tons of pyritic concentrate was shipped from Regatta Point, for acid manufacture on the mainland.

In addition to the foregoing mining operations, 4,770 tons of limestone and 6,939 tons of silica were quarried and delivered to the Works for fluxing purposes.

Gold.

The only production of gold, other than that obtained from the operations of the Mount Lyell Company, was a small parcel of 3·447 oz. obtained by two men in fossicking near Queenstown.

Silver-Lead-Zinc

Mining activities in the Zeehan district have been maintained. An average of 65 men was employed in productive, developmental, and prospecting work relating to silver-lead and silver-lead-zinc ores.

Mining of silver-lead-zinc ore employed an average of 9 men continuously and 5 part time, and resulted in the sale of 288·185 tons of concentrate, which, on assay value, contained 20,367·881 oz. of silver, valued at £S5,451·387, 145·766 tons of lead, valued at £S15,554·993, and 16·304 tons of zinc, valued at £S2,198·853.

Zeehan Mines Pty. Ltd.—This company, formerly known as the Zeehan Explorations, employed an average of 47 men, mainly, in the continued development of the Oceana Mine. The main shaft was sunk from 191 feet to 354 feet. A plat was cut at 300 feet and the crosscut at that level was driven to the ore zone. A new changehouse was completed and placed in commission. Buildings to house the main winding plant were erected and an electric winder was installed. A steel headframe was erected over the main shaft. A connection was made with the power transmission line of the Hydro-Electric Commission. Exploration, by diamond drilling, was pursued at the Oceana and Austral mines.

The Electrolytic Zinc Company of Australasia Ltd.—Geological officers were engaged in surface and underground surveying and mapping on the Comstock leases, including the Main Lode, West Lode, Allison's Lode, Susanite and Britannia sections. To enable this work to be done, much effort was directed towards cleaning out and making safe portions of the old workings. The Big Ben prospect was offered to the Company but was rejected after three diamond drill holes, totalling 1,303 feet had been drilled and, together with geological mapping, had revealed disappointing results.

The Montana Silver-Lead Mine.—Tribute operations were continued until the latter part of the year when the company resumed control of the mine and proceeded to condition the plant and workings for full scale productive operations.

At the close of the year, work was in progress towards refitting the main shaft headframe and mill. The underground workings have been cleared of water and debris. Production has been continued on the same lines as was being done by the tribute party. A total of 172·777 tons of concentrate was sold. On assay returns, this ore contained 15,117·605 oz. silver, valued at £S4,051·73 and 97·348 tons of lead, valued at £S10,350·976.

Lead-Nickel Company.—This Company continued operations at the Great South Comet Mine, in the Dundas area, for a short period and then closed down. The plant was sold to the Montana Silver-Lead Company. A parcel of 5·358 tons of concentrate was sold and contained 265·757 oz. of silver, valued at £S70·159 and 3·611 tons of lead valued at £S325·016.

W. J. Hodge, East Dundas.—From the treatment of old dump material, obtained 54.92 tons of concentrate containing 2,858.724 oz. of silver, valued at £S754.703, 19.322 tons of lead, valued at £S1800.48 and 9.792 tons of zinc valued at £S1317.024.

S. Clark and E. Jones.—Working in spare time, these two men produced 39.7 tons of concentrate from their lease north-west of Zeehan. The concentrate contained 1213.11 oz. of silver, valued at £S320.261; 17.151 tons of lead, valued at £S1895.185 and 6.155 tons of zinc valued at £S827.847.

E. Tomkins, Sylvester Mine Lease.—From prospecting, in spare time, this person recovered 2.5 tons of concentrate containing 41.75 oz. of silver, valued at £S11.815; 0.85 ton of lead, valued at 113.9 and 0.357 tons of zinc valued at £S53.982.

Swansea Silver-Lead Mine.—Mr. J. J. Hill, working alone, recovered 4.5 tons of concentrate containing 250.65 oz. of silver, valued at £S70.934 and 3.087 tons of lead valued at £S413.658.

Fairburn and Maine.—Two men, working in spare time at their lease in Zeehan, obtained 6.4 tons of concentrate,

containing 402.905 oz. of silver, valued at £S110.118 and 4.029 tons of lead valued at £S491.965.

Miscellaneous parties in the Zeehan district recovered small lots of silver-lead concentrate, containing 217.28 oz. of silver and 1.368 tons of lead.

Tin.

The Razor Back Tin Mine, Dundas.—A party of 3 men was engaged in developing and prospecting a lode formation and treated approximately 130 tons of ore, from which they recovered and sold 2.406 tons of concentrate, containing 1.516 tons of tin valued at £S1,412.918.

E. Coleman, South Heemskirk.—Small-scale lode operations on lease No. 20M/41 resulted in a recovery of 0.789 ton of concentrate, containing 0.419 ton of tin valued at £S274.874.

C. Richardson, South Heemskirk.—Working a small lode formation this man obtained 0.411 ton of concentrate containing 0.023 ton of tin valued at £S20.519.

H. G. Watson, North Heemskirk.—This prospector, working an alluvial claim at Eureka Creek, obtained 0.869 ton of tin oxide concentrate, containing 0.304 ton of metallic tin valued at £S289.138.

Inspector L. F. Egan, Upper Burnie, reports:—

Employment.

The average number of men employed in the mining industry was 785, representing a decrease of 45 as compared with the previous year. A slight but progressive increase in employment took place during the year, the maximum employment occurring during the final quarter. The provision of better housing facilities, by the larger mining companies, for married employees should attract more settled types and improve the employment position generally.

MINES AND WORKS REGULATION ACT, 1915.

Accidents.

Of the 16 accidents, registered under the Mines and Works Regulation Act, 14 occurred underground and two happened on the surface. Of the underground accidents, the most serious was that in which an experienced miner was spalling a lump of ore, when a seat flew off, striking his left eye, injuring the eye ball and causing loss of sight of the eye.

Partial loss of vision was sustained by another man when a piece of ore he was lifting into a truck, broke, allowing the broken piece remaining in his hand to come up sharply and strike him in the eye.

Of the 12 remaining underground accidents, 6 occurred during stopping operations, the most serious being occasioned by an unanticipated fall of soft material from the "back". A fractured left leg, lacerated right leg and bruised back resulted from this accident.

Scaling or "barring down" operations were responsible for three separate accidents, the injuries being a fractured toe, lacerated right arm and injured right knee respectively.

Boring a heavy boulder for secondary blasting in a stope a miner dislodged a smaller piece onto his right leg and ankle injuring same. Another man working in a stope hit himself with a spalling hammer, fracturing a bone in the left foot.

Trucking accidents were four in number causing injury to four men, the most serious injury being a bruised back and hip. An electric loco driver was bringing a rake of trucks out in reverse and was pushing an empty truck ahead of the loco, when the empty truck was derailed and caused to jam the injured person against the locomotive.

In the other three trucking accidents, a total of three men suffered crushed fingers. In each instance a piece of ore in the truck rolled back against the truckers' fingers.

Pieces of ore, accidentally knocked from working places above the level, caused two accidents, one man receiving a fractured right toe and the other a fractured finger on the left hand.

On the surface, two truck repair jobs caused separate accidents. In one case a hood being raised by hand crane rolled back onto the victim fracturing a bone in the

foot. On another occasion, while repairing a truck, a man's spanner slipped off a burred nut and struck him on the left hand fracturing a bone.

Safety and Prevention of Accidents.

Efforts were directed, throughout the year, to the production and maintenance of safe working conditions. Approximately 250 men are employed underground in the territory and as many of these are young inexperienced men and others are New Australians, totally unfamiliar with the work and conditions, it will be appreciated that the strictest attention by all concerned, was necessary to prevent accidents.

It is pleasing to record that at all mines and works the fullest co-operation has been received from the managements in an endeavour to reduce accidents to an absolute minimum.

Preventative and remedial efforts to eliminate possible and known risks, from the mining and allied industries, have always been in accordance with the provisions of the Mine and Works Regulation Act.

Machinery.

The provisions of the Mines and Works Regulation Act relating to machinery were imposed, where applicable, in all mining and metallurgical plants. As in other years the fullest collaboration was maintained with the Inspector of Machinery.

Health and Sanitation.

This side of the Mines and Works Regulation Act was given special attention during the year and in its various aspects has embraced such matters as ventilation of underground workings, dust and fume control, first aid equipment, and surface and underground amenities for workmen.

Ventilation.

In one instance, at a West Coast mine, unsatisfactory ventilation developed in an end through lack of a connecting rise with the level above. Pending the completion of the rise, the introduction of larger diameter ventura tubing was required together with a speeding up of the propellor type fan. This resulted in vastly improved conditions being achieved.

Dust and Fume Control.

The accumulation of clay in the feed water reticulation scheme, at one metallurgical plant, caused the depositing of clay in the fine grained flotation concentrates. After collection on disc filters and drying on oil-fired driers (with rake type conveyors), the concentrate was found to be lumpy with clay, necessitating collection and breaking up. The dust raised has been of some concern and proposed alterations in the flow sheet are designed to obviate the condition.

At the same plant, ineffective hooding, at the discharge end of the rotary tube roaster, caused a leakage of oil fume and sulphur dioxide, This condition has been largely overcome by the introduction of more effective hooding.

Surface and Underground Amenities.

Constant attention was paid throughout the year to the maintenance of clean, warm and draught free change houses together with a plentiful supply of hot water and adequate clothes drying arrangements.

Crib places on the surface and underground were the subjects of frequent inspection to ensure that clean and hygienic, as well as comfortable conditions were maintained.

Latrines.—Patent chemical dissolvant type latrines were introduced underground at one mine and have proved satisfactory to date.

First Aid.—The production and maintenance of adequate First Aid Facilities at all mines and works was an important feature of inspection work. At one mine an entirely new First Aid room was constructed and credit is due to the management for their co-operation in providing same.

Worker's (Occupational Diseases) Relief.

In the administration of the Worker's (Occupational Diseases) Relief Fund Act, 1928, arrangements were made for the examination and X-ray of 11 cases claiming compensation. In only one instance was a positive case of silicosis revealed and this was in the very early anti-primary stages of the complaint, the applicant having been engaged in the mining industry for 20 years. The Certifying Medical Officer recommended that he be paid 20 per cent of the full compensation allowable under the Act.

Of the remaining 10 cases, time spent in the mining industry ranged from 23 years to 4 years.

Other phases of the work involved the keeping of registers, the enforcement of the examination of new employees, &c., and acting as general adviser to men engaged in mining throughout the territory.

Explosives Act, 1916.

As in other years control was exercised over the importation, transport, handling and storage of explosives. This involved personal supervision of the unloading of 4 shipments of explosives at Burnie and one at Devonport.

In two instances, control was exercised on my behalf by the Harbourmasters of the Marine Boards of Burnie and Devonport. This was due to the co-incidental arrival of an oil tanker at Devonport, requiring my full attention. Appreciation is expressed of the willing co-operation of both officers.

Details of the Burnie shipments are as follows:—

Table with 3 columns: Description, Cases, Detonators. Rows include Detonators (electric) (6 x 72), (6 x 96), (6 x 144), (8 x 96), (non-electric) (No. 6), (non-electric) (No. 6).

Table with 2 columns: Item, Cases. Rows include Blasting Powder, Quarry Monobel, Polar A.N. Gelignite "60", Polar A.N. Gelignite "50".

Devonport Shipment (for use in Launceston Division)—

Table with 2 columns: Item, Cases. Rows include Polar A.N. Gelignite "50", Polar A.N. Ligdyn "25".

At the port of Currie, King Island, the Marine Authority again deputised for this Department and exercised control over the importation of two shipments of explosives. Details of the shipments are as follows:—

For mining purposes—

Table with 2 columns: Item, Cases. Rows include Polar A.N. "50" Gelignite, Polar A.N. "60" Gelignite, Quarry Monobel.

For Government purposes—

Table with 2 columns: Item, No. Row includes Detonators No. 6.

Table with 2 columns: Item, Cases. Rows include Quarry Monobel, Polar A.N. "50" Gelignite.

Inflammable Liquids Act, 1929.

Work involved in the administration of the Inflammable Liquids Act, 1929, throughout the year may be divided roughly into two categories, viz., Control over storage and Control over the discharge of oil tankers.

On the storage side a large number of authorities were issued for pump installations to be proceeded with and the usual inspections were carried out. The keeping of registers was again a routine phase of the work.

Approvals for 44-gallon drum compounds were again handled by the Chief Inspector of Explosives but in all cases the sites were inspected and the applicants advised regarding Departmental requirements.

Discharge of Oil Tankers at Devonport.

Seven oil tank ships were discharged at Devonport during the year. The first tanker arrived during my absence from the district and the Harbour Authority exercised supervision of discharging of the vessel. On the remaining six tankers, personal control was exercised in accordance with the provisions of the Act.

Only one untoward incident occurred and this concerned a member of the crew of the S.S. "Arena" who walked from his quarters onto the poop deck smoking a cigarette. Legal proceedings were immediately instituted against this man and his case was heard before local justices in the Court of Petty Sessions at Devonport on the following morning. Entering a plea of guilty, the defendant was fined £3 and ordered to pay Court costs amounting to 8s. 6d.

Details of the various shipments are shown hereunder:—

Table with 6 columns: Ship's Name, Total Pumping Time (Hours), Total Gallonage (Motor Spirit, Power Kerosene, Lighting Kerosene, Distillate). Rows include Arena, Sideling Hill, Fort Christina, and Totals.

During the whole 190 hours pumping the combined total volume of all products discharged amounted to 4,387,668-15 gallons. There was no spillage during the years operations.

Aid to Mining and Mineral Resources.

No application was made for assistance under the Aid to Mining Act.

Exploration for new mineral deposits and investigation of known mineral resources continued over an extensive area on the West Coast. As in the previous year, exploration followed a planned pattern of topographical, geological and geophysical surveys and included diamond drilling. Results, to date, have not been made public

Mining Operations and Production.

Cadmium.

The Electrolytic Zinc Company of Australasia Ltd. continued as the sole producer of cadmium. The ore was derived from mining operations on the West Coast, the cadmium occurring in a complex ore body of which lead and zinc are the main components. Production amounted to 43.70 tons, valued at £A75,334.

Copper.

With a production of 343.46 tons, valued at £S61,706.254, the E.Z. Co. of A'asia. Ltd. was again the sole producer. The copper was recovered in the form of a sulphide, in the flotation of the zinc-lead ore. This concentrate was sent to Smelters in the U.S.A. and subsequently electrolytically refined.

A party of 4 men was engaged in prospecting work at Temma 13 miles South of the Arthur River on the West Coast.

Gold.

Valued at £S131,253.008, the total production amounted to 10,584.92 fine ounces and was derived from the operations of the E.Z. Co. of A'asia. Ltd. at Rosebery and Williamsford.

Osmiridium.

No production was recorded although two men carried out some desultory prospecting at Nineteen Mile Creek on the Waratah-Corinna Road.

Yellow Ochre.

No production was recorded from the Deep Creek deposit near Smithton. The pit, however, was kept in order by the owner of the lease.

Limonite.

For use in town gas production, a total quantity of 366.5 tons was mined from the Iron Cliff deposit at Penguin and was valued by the producer at £A715. An average of 4 men was engaged in this production.

Red Ochre.

Production was again confined to the Spalford pit of Mr. A. Pearson and amounted to 48 tons, valued at £A95.5.

Beach Pebbles.

Sold to a Melbourne firm for use as grinding agents in ball mills, a total of 493 tons was produced by Mr. A. Pearson and valued, by him, at £A986.

Scheelite.

King Island Scheelite (1947) Limited.—Employing an average of 141 men King Island Scheelite (1947) Limited continued as the sole scheelite producer. Substantial price rises for tungsten ores, in the latter half of the year, have given a somewhat unreal value to the years production but the progressive nature of the operations may be gauged from the following production statistics.

	1948. Tons.	1949. Tons.	1950. Tons.
Crude ore mined and milled	148,263	158,755	157,414
Scheelite concentrates produced	637.42	802.60	791.53

In considering those figures it must be remembered that production was interrupted for a period of six weeks due to severe drought conditions early in the year. tungstic trioxide content of the concentrate amounted to 518.3092 tons, valued at £S465,296.0558.

Ore Reserves—(From information supplied by the Managing Director)

	Tons.
Ore reserves at 1st November, 1947	3,091,028
Less extracted from 1.11.47 to 31.10.50	461,582
Proved and payable ore estimated at 31st October, 1950	2,629,446

Development.

Three new benches were opened up at elevations of 30 feet, 170 feet, and 200 feet above sea-level.

	Tons.
Overburden removal (Period 1.11.49 to 31.10.50)	142,626
Waste rock extracted from ore body (Same period)	11,639

Plant.

The power plant again functioned smoothly and generated 5,642,558 electrical units for distribution to plant, workshops and township.

Mill.

The installation of a Vanner (Flotation plant) was completed.

The fabrication and installation of vanner retreatment plant and building was started.

Other works carried on included the construction of three new houses for employees, a new mess building and quarters in the township area, the removal of old mess house from lower to upper township and conversion to butchers shop, also similar transfer of four hut buildings.

Silver Lead.

Once again the Farrel Mining Company was the major producer of straight silver-lead, i.e., Galena as distinct from the zinc-lead ores of Rosebery. These concentrates were transported by rail to Burnie and then shipped direct to the U.S.A. for smelting.

Farrel Mining Company Limited.—Production figures for the year are as follows:—

Crude ore mined and milled, 6,902 tons.

Marketable Ore Produced.—1310 tons of silver-lead concentrates, containing 94,040 ounces of silver, valued at £S25,345.298, and 894 tons of metallic lead, valued at £S96,581.5. The total gross sale value, as submitted by the Farrell Mining Company, was £A118,852.

Total gross value based on average sterling prices for each quarter amounted to £S121,926.789.

Average Number of Men Employed—Surface 30; Underground 30.

Development.—(Based on information submitted by Mr. R. D. Midson, General Manager.)

A total of 909 feet of driving and cross cutting was carried out and several underground prospects were tested in this manner. A nice 'make of ore' was opened up on No. 5 Level, main lode South and was driven on for over 100 feet, the face still showing payable ore. This prospect was located originally by diamond drilling.

J. Dutton and Party.—This party consisting of three members continued with an investigation of ore occurrences on a prospecting claim, South of the Farrell leases.

Tin.

An average of 49 men was engaged in tin mining. Of these, the greater number was employed at Renison Associated Tin N.L., which company continued as the major producer for the Division.

Particulars of the main producers are as follows:—

Renison Associated Tin N.L.

Development.—From information supplied by the General Manager. Driving totalled 204 feet, rising 46.5 feet and cross cutting 37.5 feet. Diamond drilling was undertaken in several places and revealed fair prospects in some holes.

Crude Ore Mined.—11,277 tons of which 978 tons came from open cuts, 1142 tons from stopes and 387 tons from development.

Overburden removal totalled 2716 tons from open cuts.

Treatment.—10,291 tons dry weight of crude ore was treated for a recovery of 68.66 tons of tin concentrates, containing 46.33 tons of metallic tin, valued at £S36,277.970. Note.—Total gross sale value as supplied by producers £A35,000.

Amenities.—Mine crib house was reconditioned. A new first aid room was constructed at the mine.

General.—A new air compressor was completely installed and a much better supply of air, for mine requirements, has resulted.

Harrington, Kenworthy and Party, Waratah.—This party carried out "cleaning up" operations on the Bischoff mill-site and afforded employment to an average of 7 men. Details of their production are as follows:—

Old tailings retreated, 4077 tons.
Concentrates produced, 22·3087 tons.
Metallic tin, 14·5197 tons.

This production represented a gross Sterling value of £11,290·164.

H. T. Brooke, Tinstone Creek.—Operating for 9 months of the year only, this person ground sluiced a stoney lead in Tinstone Creek. Values varied greatly and it was difficult to assess same with close accuracy. However, it was estimated that approximately 190 cubic yards were sluiced for the following recovery:—

Concentrates, 0·4717 tons; metallic tin content, 0·3082 ton.

Gross Sterling Value.—£269·8277.

J. Housego, Waratah.—Treating tailings, in Waratah Creek, below the Power House, this operator was responsible for the production of 1·1203 tons of tin concentrates, containing 0·7381 ton of metallic tin, valued at £S506·9646. The estimated throughput for the recovery was 630 cubic yards.

Miscellaneous Parties, Waratah.—Three parties, embracing a total of 5 men, worked separate shows, for one-quarter of the year, and produced 0·6522 ton of tin concentrates of which the metallic content was 0·4119 ton, valued at £S386·6694.

Gatenby and Patterson, Naracoopa, King Island.—No production was recorded for the year, although a fair amount of construction work and plant maintenance was performed by the two men.

Zinc-Lead-Copper.

Electrolytic Zinc Co. of A'asia. Ltd.—Excluding cadmium, to which earlier reference has been made, the gross sterling value of gold, silver, copper, lead and zinc recovered during the period under review, constituted a record for the Company. The gross value in 1949 totalled £S2,725,703·739, whilst in the year under review, the figure rose to £S4,102,882·411. The metals referred to have resulted from the operation of the Rosebery and Hercules mines on the West Coast.

In addition to highly productive mining operations at Rosebery and Williamsford, the Company carried on an intensive prospecting campaign on the Murchison area, Godkin Area, Sterling Mine and Silver Falls Area. Footages diamond drilled on these projects totalled 3198 feet. Diamond drilling figures were supplied by the Company for the year ended on the 30th June, 1950.

Production of crude ores and concentrates was as follows:—

	Tons
Crude Ore, Hercules Mine, Williamsford ..	43,488
Crude Ore, Rosebery Mine, Rosebery ..	116,321
	159,809

Inspector R. J. Muir, Launceston, reports:—

I have the honour to submit the following report on the work of inspection and administration of the provisions of the Mines and Works Regulation Act, the Explosives Act, and the Inflammable Liquids Act within the Launceston inspectorial division for the year ended 30th December, 1950.

Employment.

There was an increase in the total number of men employed in mining and allied industries, other than coal mining, the average number for the year being 872 men and this would have been further increased had sufficient labour been available as a number of the larger mines were unable to satisfy their requirements.

Accidents.

Eighteen accidents were registered under the provisions of the Mines and Works Regulation Act, involving fatal injuries to two persons and non-fatal injuries to 17 others. Of the accidents, eight occurred underground and ten on the surface. The fatal accidents were caused in the first case by a fall of rock in a drive underground where the deceased was standing talking to the working party when a fall of ground occurred from the side and

Zinc concentrates recovered 48,558
Lead concentrates recovered 10,470
Copper concentrates recovered 3,794

The recoverable quantities of metallics were:—

Metal	Tons	Value £(S)
Lead	7,677·23	838,047·915
Zinc	23,213·72	2,804,497·515
Copper	343·46	61,706·254
	Fine ozs.	
Gold	10,584·92	131,253·008
Silver	990,739·25	267,377·719
	Tons	Value £(A.)
Cadmium	43·70	75,334·0

Employment.

Excluding men engaged on outside prospecting projects, the Company provided employment for an average of 489 men.

Rough averages show that of 431 employed on the Rosebery Mine, 280 were engaged in surface operations and 151 employed underground.

The Hercules Mine, Williamsford employed an average of 58 men of which the number engaged underground was 47 and the number on the surface 11.

The following items of interest were supplied by the Company:—

Diamond Drilling—

Rosebery Mine—Surface 5,298 ft.—Underground 5,147 ft.

Hercules Mine—Underground 3,458 ft.

Development—

	Driving	X-Cutting	Rising	Total
Rosebery Mine ..	1,236	361	131·5	1728·5
Hercules Mine ..	149	52	117	318

Note.—Diamond Drilling and development figures relate to year ended 30.6.1950.

In addition the Rosebery Mine Shaft was sunk 140·5 feet to 164·5 feet below No. 11 Level and timbered to 112 feet below No. 11 Level.

General.

Black P.A. Sand Filling Project.—Experimental work was continued during the year.

Granby Truck Installation.—Work has proceeded on the installation of a moveable ramp on No. 4 Level.

Mining School.—A mining school was established for the purpose of training likely men to become miners. An experienced miner was appointed instructor.

Experimental Stopping.—The "Slotting" method of stopping was introduced and shows promising results.

Milling.—The milling rate for the year ended 31.12.50 was approximately 19·75 tons per hour.

A three-foot diameter by 8 ft. long rod mill with attendant hydro bowl classifier and pumps for re-grinding middling particles and a 60 ft. traction type thickener for thickening final residue were commissioned during the year.

back of the drive, partially burying him. In the rescue operations, a second man, who was assisting, received injuries to the back and a fracture of the leg when a second fall occurred and struck him. The second fatal accident happened on the surface, at a larger works. A watchman went to investigate a fire in a building and received burns which resulted in his death two days later.

In the underground accidents, five were caused by falls of rock, of varying amounts, and two were in connection with the use of rock drill. Accidents concerning falls of rock were:—

A man was barring down when a piece came away from the "back" and struck his foot, amputating the second toe and a joint of the big toe. A similar case occurred, when a man was barring down and a piece of rock struck him, lacerating his left arm and scalp and bruising his back and shoulder. A third somewhat similar case occurred, whilst another man was barring down, when a piece of rock dropped on the ground and then rolled onto his foot, crushing it. In the other two cases, the men were collaring holes with a rock drill when a small piece of sharp quartz was dislodged

by the bit, and fell, lacerating one man's foot and another's left hand.

In the two accidents associated with rock drills, one man was using a spanner, when it slipped on the nut and caused him to fall. He sustained a bruised back and fractured ribs. In the other case the man jammed his little finger between the machine and the wall of the stope. The injury became septic and it was necessary to amputate the first joint of the finger.

In the accidents which occurred on the surface, two were due to falls of ground. At an alluvial mine the man had adjusted the nozzle and, as he was walking away, a fall occurred in the face and a piece of ground, thrown out by the fall, struck him in the back causing severe bruising. The other accident occurred in a quarry when a piece of rock slipped down the face and pinned an employee against other broken rocks. He sustained abrasions and lacerations to his left leg. Another man received an electric shock whilst working in a mill in wet conditions. When pulling away from the live conductor, which had been contacted, he injured the muscles of his shoulder.

The other accidents were of a miscellaneous nature. A man fell about two feet whilst handling timber and bruised the muscle of his leg. Another person bumped his knee on a bag of clay, causing his knee to slip out of joint. A person was cranking a motor-truck which back-fired and caused him to strain his back. Another man stepped on a pebble and slipped over, fracturing a bone in his leg. In another case, a man was pushing a truck when a following truck caught up with him and jammed his leg against the forward truck, causing abrasions and bruising. In the last case, a pipe was being cut with a coal chisel when a fragment of steel flew off and entered the employee's arm. The laceration became septic.

Safety.

Inspection duties were regularly directed to a maximum attainment of safe and satisfactory working conditions and, generally speaking, co-operation was afforded by Managements to obtain this, although in some cases it was necessary to issue specific instructions to obtain improvements.

It was found that employees were apt to take minor risks, through lack of thought, and every opportunity was taken to impress upon them the necessity for acting carefully at all times.

Careful attention was given to details, such as the handling of explosives, shaft equipment, ladderways, and other travelling ways underground, and, in the Alluvial Mines, the maintenance of a safe batter on all steep slopes such as sides of working faces, tail races, &c.

No large uncontrolled falls of ground came under notice either on the surface or underground.

Health and Sanitation.

Regular attention has been directed to matters affecting the health of employees. Conditions of crib houses, change houses, latrines, and drinking water have been satisfactorily maintained. Ventilation at the underground mines was carried out by natural means, but at one of the larger mines, small compressed air driven and electrically driven fans, with vent tubing, were used to assist the ventilation in dead ends, &c., and a liberal supply of water was available to allay dust, with a result that the suppression of dust and the standard of ventilation were reasonable.

Housing schemes, central mess houses, canteens, and other amenities continued to operate at the larger mines and works in a betterment of the standard of living and health of employees.

The control of dust, at one stone crushing quarry, was originally not satisfactory and improvements were made to the dust collecting systems, with a resultant decrease in the dust menace.

Assistance was given to the Chairman of the Workers' (Occupational Diseases) Relief Board by arranging the medical examination of new employees and miners who requested re-examination.

Explosives.

Nitro Compounds, detonators and fuse inspected were found to be satisfactory when examined and no complaints were received concerning explosives. At one quarry due to the age of the explosives, a few sticks of Nitro Compounds have been found to be damp on the outside, due to absorption of water by the Ammonium Nitrate, but they were considered still satisfactory for use and these old "sticks" are being used as expeditiously as possible.

One incident concerning explosives was investigated. A small boy found a detonator and struck it with a hammer. The detonator exploded but fortunately without causing any injuries.

Supervision of the importation of explosives, at the Port of Launceston, was carried out and unloading and transportation of the explosives proceeded without unusual incident. Each shipment was accompanied by a certificate from the Victorian Department of Explosives that they had satisfactorily passed the necessary tests. They were found to be in good order and condition on arrival, although some of the cases had sustained minor damage during transit. Representations were made to the respective authorities to have improvements made to the wharf structure and the road surface over which the explosives are carted, and some improvements were obtained.

In the inspection of Magazines, used for the storage of explosives, it was found that they were maintained in a clean and tidy state and it was seldom necessary to direct attention to this requirement.

Machinery.

At one of the larger mines a standby diesel driven electricity generation plant was installed to supply power for pumping and other essential services in the event of a power failure on the H.E.C. lines. At two alluvial mines, 270 h.p. and 175 h.p. diesel engines, respectively, were installed, driving centrifugal pumps to supply water for sluicing purposes. These constituted the major installations. Minor alterations and additions were made at most of the works. All machinery at the various mines and works was regularly inspected and, in co-operation with the Inspector of Machinery, satisfactory guards and other safety precautions were obtained for the protection of men working in the vicinity of machinery.

Inflammable Liquids.

Premises licensed under the provisions of the Inflammable Liquids Act were inspected, and a number of applications for new storage premises was dealt with. It was necessary to instruct, in a number of cases, that the fire extinguishers be refilled due to the period of time that had elapsed since they last received attention.

Two fires were investigated. One occurred in a motor car. A four-gallon tin of petrol was being carried in the boot of the car and when the engine was started, an explosion occurred and the car caught fire. The fire was quickly extinguished and no person received any injuries. Apparently, the fumes from the tin of petrol had concentrated in the boot of the car and were ignited by the exhaust. In the second case, a fire was noticed at the base of a petrol pump and was quickly extinguished with a foam type extinguisher, without damage. Apparently, the gland of the pumping unit was leaking slightly. The pump had been wired for electric lights, which were disconnected at the base of the pump, during the war years, and a short circuit occurred in the wires, sufficient to ignite the small petrol leakage.

Aid to Mining.

Reports were compiled in connection with applications of assistance under the Aid to Mining Act, and on other matters as required. Suggestions and advice were given, particularly to those operating in a small way, for the more efficient conduct of their mines, and, generally, assistance was given, where possible, to those interested in mining.

Mining Operations and Production.

TIN.

The price of tin increased considerably, during the year, and is reflected in the value of the tin produced. In addition, the production amounting to 619-1448 tons metallic tin, was 46.2 tons greater than for the previous year. The value of the metal produced was £453,848-62 sterling. The increased production was, largely, due to the expanding policy of the Aberfoyle Mine, the largest producer in the State. The shortage of suitable labour and supplies is, however, hampering mining activities and production has not increased as would be expected with the high metal prices ruling.

W.X.X. Mine, Moorina.—A working party of four men operated this mine, under arrangement with the owner; and from the treatment of 13,550 cubic yards of alluvial material, by sluicing methods, they extracted 3-2598 tons tin concentrates, containing 2-0823 tons metallic tin, valued at £1,460-10 sterling.

Miscellaneous, Moorina.—Very little alteration occurred in the number of men or their production compared with the previous year. The same number of men, 6, was employed and their production amounted to 3-9570 tons of tin concentrates, containing 2-4487 tons of metallic tin valued at £1,874-12 sterling.

Weld Tin Syndicate, Weldborough.—(T. H. Bryce and Others):—Work by the syndicate was not continuous throughout the year due to various reasons mainly of a private nature, but when operating, two men were employed and treated 3,100 cubic yards of material, by the accepted sluicing methods, for a recovery of 0.7064 ton tin concentrates, containing 0.4516 ton metallic tin, valued at £325.13 sterling. The assets of the syndicate were disposed of at the close of the year to the Weldborough Tin Mines, of which Mr. W. E. Tucker, St. Helens, is the principal.

Cambria Mine, Weldborough.—Water was only available during the latter quarter of the year to drive the stamp battery and during this period, R. Symons and partner crushed 150 cubic yards of selected granitic material, obtained from old dumps, for a recovery of 0.4942 ton of tin concentrates, containing 0.3493 ton metallic tin, valued at £347.48 sterling.

Miscellaneous, Weldborough.—Eleven men were employed in the smaller mines of the district and produced 5.8169 tons of tin concentrates, containing 3.9460 tons of metallic tin, valued at £3,098.71 sterling.

Anchor Tin Mine, Lottah.—This mine operated throughout the year, treating tin-bearing granite-ore, which was quarried and then crushed with a stamp battery, the tin concentrate being recovered on Wilfley tables. However, owing to labour difficulties the average number of men employed was five only, and at the closing of the year it was decided to abandon operations. All assets and plant were sold. Production amounted to 10.3119 tons of tin concentrates, containing 7.3443 tons of metallic tin, valued at £5,189.96 sterling, obtained from the milling of 3,134 tons of ore.

Miscellaneous, Lottah and Blue Tier.—Former interest, in this area, was not maintained and the average number of men working declined to two. Their production was 0.5804 ton tin concentrates, containing 0.4172 ton of metallic tin, valued at 316.70 sterling.

Miscellaneous, Goshen and Goulds Country.—There was some increased activity around this area and consideration was given to commencing operations on a larger scale but no practical result eventuated. The five men employed, however, produced 2.0210 tons tin concentrates, containing 1.3214 tons metallic tin, valued at £937.60 sterling.

Goshen Tin Mines, St. Helens.—The difficulty of obtaining labour and necessary repair and maintenance work on dams and races curtailed productive activities by this company. Very little actual sluicing was carried out in the first half of the year but during the latter part 30,600 cubic yards of alluvial material were sluiced for a production of 8.1554 tons tin concentrates, containing 6.0988 tons metallic tin, valued at £4,920.46 sterling. An average of nine men only was employed but now that the races, &c., have been restored to good condition, it is hoped to continue the operation of the Argonaut and Georges Bay faces with the small team of men available.

Bell Creek Tin Mine, St. Helens.—Water for sluicing purposes was available for only about 5 months of the year and during that time the two Kirwin Brothers sluiced 18,000 cubic yards of material, from which they obtained 1.3549 tons of tin concentrates, containing 1.0098 tons metallic tin, valued at £1,004.55 sterling.

Miscellaneous, St. Helens.—The small mines, of this area, were worked by an average of six men, who recovered 2.4595 tons tin concentrates, containing 1.6461 tons metallic tin, valued at £1,351.26 sterling.

Aberfoyle Mine, Rossarden.—Production at this mine was 443.2763 tons of tin concentrates, containing 322.1807 tons metallic tin, valued at £233,808.17 sterling, obtained from the milling of 31,542 tons of ore. In addition to this tin production, which is the largest for any individual mine in the inspection division, wolfram concentrates were also produced and these are shown under the respective heading. In the mine, 4,009 feet of development work was carried out consisting of Driving 2,172 feet, Cross-cutting 1,101 feet, and Rising 736 feet. The major portion of the ore was obtained from below No. 5 level and the mining of the quartz veins on No. 7 and 8 levels was commenced. A new winder house was constructed and preparations made for the installation of a new electric winding engine. A diesel-driven electric generating unit was also installed to act as a standby for essential equipment in case of a power failure. In the men's Change House some steel lockers were installed and more are being fabricated, at the mine, for installation. At the mill, no major alterations were made and it continued to function satisfactorily. The experiments in heavy media separation were continued but no decision as to

the use of this concentrating method has yet been made. The housing of employees is still being proceeded with, and ten new cottages were erected during the year. The mess house, for the supply of meals, continued to operate and supply good meals at a very reasonable cost, being partly subsidised by the Company. An average number of 154 men was employed.

Storey's Creek Tin Mine, Storey's Creek.—Operations of this mine are reviewed under "Wolfram", that being the major product from operations.

Tin production amounted to 11.85 tons of concentrates, containing 7.63 tons metallic tin, valued at £5,557.87 sterling.

Miscellaneous, Avoca.—With the high prices for metal, interest was revived in the Gipps Creek Field, particularly by miners operating on a part-time basis. Towards the latter part of the year, 5 men were operating, the production being 0.8897 ton tin concentrates containing 0.6470 ton metallic tin, valued at £634.81 sterling.

Miscellaneous, Scottsdale.—Three men conducted sluicing operations on the alluvial material near Mount Stronach but their production was not large, due largely to the unsatisfactory water supply in this area. The production was 0.4696 ton tin concentrates, containing 0.2806 ton metallic tin, valued at £200.06 sterling.

Miscellaneous, Ringarooma and Alberton.—The activities of the smaller producers, in this area, was not great, the six men employed giving their attention also to prospecting and the possibility of re-opening some of the older mines, but no development eventuated. Production was 0.6898 ton tin concentrates, containing 0.4612 ton metallic tin, valued at £313.30 sterling.

Arba Tin Mine, Branzholm (Walsh & Company).—This mine carried out normal sluicing operations, employing 9 men and producing 8.2903 tons tin concentrates, containing 6.1723 tons metallic tin, valued at £5,302.65 sterling. Production was obtained from the treatment of 29,400 cubic yards of material, of which a considerable amount was old tailings which had been dumped over the tin-bearing ground in past years. Ore reserves were becoming depleted towards the end of the year and consideration is being given to transferring the plant to a new site in the vicinity of Black Creek.

Baker's Discovery, Branzholm.—Due mainly to the shortage of labour and the intermittent water supply, operations were not continuous but the two men, when employed, treated 5,500 cubic yards of granitic formation, by sluicing methods, to obtain a production of 0.8835 ton tin concentrates, containing 0.6255 ton metallic tin, valued at £622.25 sterling.

Ruby Flat Mine, Branzholm (Walsh & Co.)—Two men were employed at this mine and sluiced 14,300 cubic yards of alluvial material. Due to the mine not having a "clean-up," during the last quarter, the production shown is not large, amounting to 0.8628 ton tin concentrates, containing 0.5949 ton metallic tin, valued at £450.34 sterling.

Ormuz Mine, Branzholm.—An average of seven men was employed by A. S. Edwards to carry out sluicing operations on the old Arba Tin Mining Company's main face, water for the conduct of operations being obtained from the Ringarooma Race by arrangement with the Ringarooma-Cascade Water Board. The removal of the Basaltic overburden and sluicing of the tin bearing material was carried out alternately and in all, 123,902 cubic yards of material were handled for a recovery of 8.0139 tons of tin concentrates, containing 5.5127 tons metallic tin, valued at £4,136.35 sterling.

Miscellaneous, Branzholm:—Seven men found occupation at the smaller mines near Black Creek and Ruby Flat and their combined production was 5.8187 tons tin concentrates, containing 4.1734 tons metallic tin, valued at £3,068.17 sterling.

Briseis Mine, Derby.—Productive operations were carried on at the Cascade workings without interruption and 172,000 cubic yards of material were sluiced and elevated to the boxes for a recovery of 57.1292 tons tin concentrates, containing 39.7227 tons metallic tin, valued at £30,786.55 sterling. A minor portion of the production accrued from the treatment of old tailings, near the discharge of the sluice box at the old main workings. This is usual practice, as it is normal for some of the finer tin to be carried through the sluice boxes, due to the greater volume of material handled and water used.

Miscellaneous, Derby.—An average of ten men operated intermittently to produce 3.3754 tons tin concentrates, containing 2.2437 tons metallic tin, valued at £1,606.49 ster-

ling. The major portion of this was obtained from the bed of the Ringarooma River below the Briseis Mine, which it is possible to work during periods when the river is low.

Miscellaneous, Herrick and Winnaleah.—The production from the smaller mines of this area was the result of the activities of three men, of whom P. V. Cross produced the major amount, the total being 2·5473 tons tin concentrates containing 1·8334 tons metallic tin, valued at £1,482·08 sterling.

Banca Tin Mine, Winnaleah.—R. L. Rainbow carried on normal productive operations with the aid of one man for the greater part of the year, being able to conserve water for sluicing purposes in two dams. The accrued result was the production of 3·2915 tons of tin concentrates, containing 2·3472 tons metallic tin, valued at £1,703·09 sterling, from the treatment of 9,400 cubic yards of alluvial material.

O. J. Walsh & Hookway, Bradshaw's Creek.—This two-man party carried on sluicing operations in the upper reaches of the Wyniford River, during the latter half of the year, when there was sufficient water available for sluicing purposes. From the treatment of 5,560 cubic yards of material, from the River bed, they obtained 1·4665 tons tin concentrates, containing 1·0671 tons metallic tin, valued at £965·83 sterling.

Miscellaneous, Bradshaw's Creek and South Mount Cameron.—An average of 12 men found employment on the smaller mines in this fairly extensive area and produced 12·3236 tons tin concentrates, containing 9·1445 tons metallic tin, valued at £7,272·35 sterling.

Dorset Dredge, South Mount Cameron.—Conducted by the Department of Supply, this Dredge operated throughout the year. The proportion of actual running time to possible time was 79 per cent, a slightly lower figure than for the previous year, due to a greater time spent on repairs, particularly on the bucket-band which was approaching the end of its life. After handling approximately 10½ million cubic yards of material this band was replaced by a new Hadfields bucket band during the Christmas shut-down period. Approximately 30 acres of the Dorset Flats were dredged to a depth of 36 ft., for a recovery of 109·59 tons tin concentrates, containing 80·8422 tons metallic tin, valued at £62,056·19 sterling. The ground was handled at the rate of 346 cubic yards per hour and the total amount treated was 1,793,000 cubic yards. The recovered tin concentrate was treated at the tin dressing shed, by Mercury amalgamation, to extract the alluvial gold—a constituent of the ground dredged. This product is shown under "Gold". An average of 47 men was employed and, apart from the actual work on the dredge, carried out repairs and maintenance on Roads, Office buildings, Employee's Cottages, &c., to keep them in good order and repair.

Endurance Tin Mine, South Mount Cameron.—Normal sluicing operations were continued at the Clifton workings, and it was necessary to shift the barge containing the gravel pumps to a new site, approximately 6 chains south west of the old site. No alteration was made to the sluice boxes. The delivery columns enters the feed chute to the boxes as before, but now contains a right-angled bend to take it to the new barge site. The vertical lift of the gravel pumps remained unaltered at 135 feet.

Material from the workings, including some old tailings amounting to 348,600 cubic yards, passed through the sluice boxes, and from this 119·8941 tons tin concentrates, containing 86·3159 tons metallic tin, valued at £58,072·14 sterling, were recovered.

In order to protect the workings, from flood water in Clifton Creek, a new protective race, 38 chains long was constructed, largely with the use of a Bulldozer, and necessitated the removal of 12,000 cubic yards of material. A drainage race was also constructed, 13 chains long, on the south-western end of the tailings dump to control storm water and normal drainage. A total of 48 men was employed by the Company at the mine, power house near Moorina, and pumping station on the Ringarooma River, and inclusive of 7 men who were employed in clay-bagging operations, a subsidiary undertaking. Prospect-boring operations were carried out to the west of the present workings and 42 holes were drilled with favourable results which increased the ore reserves.

Mount Cameron Water Race, Gladstone.—This Government controlled scheme again played an important part in the production of tin from the Gladstone area and seven men obtained water on a royalty basis to produce, from the treatment of 85,850 cubic yards of material, 8·0358 tons tin concentrates, containing 5·3742 tons metallic

tin valued at £3,813·57 sterling. Four other mines purchased water from the race on a contract basis. Their results are shown separately.

Lanka Tin Mine, Gladstone.—This syndicate continued their operations at the Mussel Roe River, but due to the labour shortage and difficulties of supplies their returns were not as profitable as was expected. An average of 5 men, however, was employed to operate their hydraulic sluicing plant, which obtained water from the river, with a pump and engine, and from the Mount Cameron Water Race. The production of 5·5108 tons tin concentrates, containing 3·9438 tons of metallic tin, valued at £2,583·06 sterling, was obtained from the treatment of 17,900 cubic yards of material.

Star Hill Syndicate, Gladstone.—Purchasing their water from the Mount Cameron Water Race, 4 men were employed to operate the electrically driven pumping plant and to carry out sluicing with the water delivered. Two faces were worked for most of the year and 44,000 cubic yards of alluvial material were treated for a production of 8·5955 tons of tin concentrates, containing 6·2170 tons of metallic tin, valued at £4,501·51 sterling. This syndicate also operated the Star Hill Extended Workings, being supplied with water, on a royalty basis, from the Mount Cameron Water Race. These workings are in the vicinity of the old McGregor Mine.

Amber Hill Mine, Gladstone.—J. T. Shields owner of the lease of this mine came to an agreement with the Dunn Brothers to commence productive operations at this mine. A 270 h.p. diesel engine, driving an 8 inch diameter centrifugal pump was installed, together with other sluicing equipment and sluicing operations were commenced.

In order to avoid lifting the tailings, it was decided to sluice a long tail race which in places is 70 feet deep. This involved a considerable amount of work and it was only towards the end of the year that the sluicing of the tin-bearing gravels commenced. The output was 0·8397 ton of tin concentrates, containing 0·6217 ton of metallic tin, valued at £577·47 sterling. Water for sluicing purposes was supplied by the Mount Cameron Water Race to a small dam near the installed pumping unit.

Miscellaneous, Gladstone.—The small mines of this district, other than those already mentioned, employed 11 men. H. Standage, the major producer, purchased water, on a contract basis, from the Mount Cameron Water Race and installed a 175 h.p. diesel engine to drive a 9 inch diameter Thompson pump to give him a satisfactory pressure for sluicing purposes. Production amounted to 5·3452 tons tin concentrates, containing 3·5539 tons metallic tin, valued at £3,101·37 sterling.

Strait Islands.—The average number of men employed in mining on Cape Barren and Flinders Islands increased to six and there was some increase in mining activities but the production was not as great as was expected, amounting to 0·6759 ton tin concentrates, containing 0·4204 ton metallic tin, valued at £303·22 sterling.

Shepherd and Murphy Mine, Moina.—Very little work was carried out at this mine largely due to the shortage of labour. A few small parcels of mixed concentrates were sold, the tin portion amounting to 0·1478 ton concentrates containing 0·0789 ton metallic tin, valued at £78·49 sterling.

Miscellaneous, Moina.—One parcel of tin concentrates was sold, from this area, by a small producer and amounted to 0·0509 ton tin concentrates, containing 0·0290 ton of metallic tin, valued at £21·95 sterling.

WOLFRAM.

The sterling price of wolfram increased considerably during the year to £1,339 but this did not cause a corresponding rise in production. Actually the tonnage produced was lower than the previous year while the value, with the rising price, was so enhanced to convey an opposite impression. Production amounted to 200·1026 tons wolfram valued at £113,984·3 sterling.

Storey's Creek Mine, Storey's Creek.—Shortage of labour was the main factor in hampering operations at this mine, the largest producer in the inspection division, and it was for this reason that no large-scale development was carried out. A Winze was sunk 70 feet along the lode below No. 5 level, the previous lowest workings in the mine, and driving was proceeding in either direction from it, the lode maintaining its width and value at this level.

Productive operations were confined to 1A lode on Nos. 1, 2, 3, and 4 levels and 7,620 tons of ore were mined and milled for a recovery of 113·85 tons of wolfram concentrates, with a tungstic trioxide content of 81·99 tons, valued at £67,558·88 sterling.

The high quality of these concentrates and the absence of impurities causes them to be keenly sought by overseas buyers. An average of 63 men was employed and it is hoped that the number will increase with the better housing facilities now being provided. Several new cottages were completed and arrangements are being made to obtain some prefabricated dwellings to further increase the housing facilities for married miners. The tin concentrates produced are shown under the respective heading.

Aberfoyle Mine, Rossarden.—This mine is reviewed under "Tin". Wolfram production amounted to 86.0321 tons concentrates, containing 62.6545 tons tungstic trioxide valued at £46,281.39 sterling.

Shepherd and Murphy Mine, Moina.—Of the mixed concentrates produced at this mine, 0.1277 ton of wolfram concentrates, contained 0.0814 ton of tungstic trioxide, valued at £80.51 sterling.

Miscellaneous, St. Helens and Moina.—One parcel of wolfram concentrates was sold from each of these districts and amounted to 0.0928 ton, containing 0.0689 ton tungstic trioxide, valued at £63.52 sterling.

GOLD.

The sterling price of gold remained constant throughout the year and there was very little activity in this section of the industry. The majority of the production was obtained as a subsidiary production in the treatment of alluvial material from the recovery of tin concentrates. Production amounted to 397.421 fine ozs. valued at £4,923.02 sterling.

Dorset Dredge, South Mt. Cameron.—From the treatment of tin concentrates gold bullion was obtained and contained 372.82 fine oz. of gold, valued at £4,622.97 sterling.

Miscellaneous, Beaconsfield.—A party of four men re-opened the Golden Horseshoe mine, erected a 5-head battery, and was the major producer in the area. The production of this district totalled 18.660 fine oz., valued at £231.38 sterling.

Miscellaneous.—Small quantities of gold were also produced from the vicinity of Lefroy, Gladstone, South Mount Cameron and Derby, and in all amounted to 5.941 fine oz. of gold valued at £73.67 sterling.

SILVER, LEAD, ZINC.

The West Mount Claude Mining Syndicate continued operations at the Old Round Hill Mine and from operations, which were partly of a prospecting nature, obtained 200 tons of ore which was treated in a small concentrating plant for the recovery of a saleable product of 9.7969 tons of concentrates. This concentrate contained 507.655 oz. silver, valued at £139.45 sterling, and 7.4090 tons of lead, valued at £854.97 sterling. An average of four men was given employment in these operations.

BISMUTH.

Although there was a considerable increase in the purchase price of this metal, one small parcel amounting to 0.0039 ton bismuth, valued at £6.33 sterling, from the Shepherd & Murphy Mine, was the only production.

LIMESTONE.

The production of limestone, exclusive of that used in cement manufacture, amounted to 21,373 tons and this was quarried for the purpose of the manufacture of burnt lime and crushed to form Agricultural Limestone.

Inspector D. Besford, Hobart, reports:—

Employment.

The average number of persons employed in Mines, Works, and Quarries, operating under the Mines and Works Regulation Act, was 2,668 compared with 2,565 for the previous year.

The distribution was as follows:—

Works	2,171
Coal Mining	334
Quarries and Brickworks	156
Osmiridium and Tin	7
Total	2,668

Accidents.

No fatal accidents occurred during the year, and of the twenty-three accidents causing incapacitation for at least fourteen working days, thirteen were associated with surface operations at metallurgical works, and ten occurred underground at coal mines.

Melrose Agricultural Lime Quarries, Eugenana.—An average of 36 men found employment at these works where limestone is quarried and crushed for agricultural purposes. Difficulties in obtaining supplies for repairs to crushers and other equipment hampered production, but 13,302 tons of limestone were quarried and pulverised, valued at £19,196 Australian currency.

Railton Lime Works, Railton.—These works produced three products, namely Builders Lime, Burnt Lime, and Crushed Limestone, in the manufacture of which, five men were employed and 3,256 tons of limestone, valued at £1,342 Australian currency, was produced and treated.

Beaconsfield Lime Products, Flowery Gully.—Considerable difficulty is being experienced, by this Company, in obtaining equipment to carry out programmed operations, but with the plant available there was an output of 3,795 tons limestone, valued at £A2,885, to produce supplies of burnt lime and ground limestone. In the output of those products and on construction work, 17 men were employed.

Beams Brothers, Flowery Gully.—This party quarried 1,020 tons of limestone, valued at £A382, which was burnt and sold as burnt lime for building and agricultural purposes.

CEMENT.

Goliath Portland Cement Company, Railton.—In the production of cement and Tasbestos (Asbestos cement sheeting), this Company functioned normally throughout the year. The major alterations around the plant were the completion and occupation of the main offices and the construction of a new moulding shop for the production of various shaped articles of asbestos cement sheet. The number of men employed was 187, and, in the manufacture of cement, 108,263 tons of limestone and 1,114 tons of iron ore were required. The cafeteria and other amenities for the employees, continued to function satisfactorily.

CLAY.

Clay was produced for use in connection with paper and brick manufacture.

Endurance Clay Pit, South Mount Cameron.—The Endurance Mine carried out operations to obtain a high grade white clay for the Associated Pulp and Paper Mills, at Burnie, in paper manufactures. The overburden is sluiced off the clay, and the exposed clay, if of satisfactory quality, is bagged and forwarded to Burnie. The years production was 5,704 tons, valued at £16,475 Australian currency.

M. Kirwin, St. Helens.—With the discovery of a suitable clay for paper manufacture, near St. Helens, M. Kirwin entered into an agreement with the Associated Pulp and Paper Mills, and, assisted by four men, forwarded 2,572 tons of clay, valued at £A6,434 to Burnie.

L. W. Smith Brickworks, Dulverton.—L. W. Smith purchased the Brickworks known as Haine's Brickworks and altered the name to L. W. Smith Brickworks. New workshops and offices were constructed and other improvements are contemplated. Eight men were employed and 2,814 tons of clay were used in the manufacture of bricks.

Eleven persons received foot or leg injuries, ten persons received injuries to the arm or hand, one man received injuries to the ribs, and one workman sprained his back. None of the injuries was of a dangerous character, and the injured persons were able to resume their ordinary occupation after a short absence.

The most serious accident occurred when two motor mechanics were injured while they were engaged in fitting a new tyre and tube to a motor vehicle. The new tyre and tube were fitted to the rim and keeper, and air was admitted until the full pressure of eighty pounds was applied, when it was observed that the joint in the rim was not fitting properly. One of the men unscrewed the valve, in order to let the air pressure escape from the tube. After the air had been escaping for some time, it suddenly ceased escaping. One of the workmen thinking that the full pressure had been released from the tube, proceeded to knock the joint into its proper position, when he struck a blow with his hammer, the

keeper immediately flew off, and struck both persons. They sustained fractured limbs, one man receiving a blow on the leg and the other a blow on the forearm.

Three accidents occurred at the coal face, due to falls of coal. The injuries were not of a serious nature.

One workman received a serious shock, while on his way home from a mine, when he came into contact with a live electric wire connected to a private installation. The man was rendered unconscious for several hours, but later recovered without any apparent ill effects. As the accident did not occur in connection with the operations at the mine it was not recorded under the Mines and Works Regulation Act.

Safety.

Attention has been directed to the safe working of mines, works and quarries, including the maintenance of healthy conditions of employment.

Working places have been regularly inspected, and tests have been carried out in all underground working places for the presence of inflammable and noxious gas. Tests were also carried out in the old workings adjacent to the pillar extraction places, in order to ascertain whether any gas was present. No inflammable gas was discovered during the year.

Roof conditions were closely examined to ascertain whether the roof was safe for employment. Bad conditions were found in some cases and necessary repair work had to be carried out in order to secure the roof and prevent collapse. Several cases of severe weighting occurred, especially along the main haulage roads, and workmen had to be engaged continuously in strengthening and replacing the existing supports.

In one case, it was found necessary to order the installation of additional "chocks" in order to ensure safe working.

It was also found necessary to order the erection of suitable fences to protect workmen when engaged in elevated positions.

Quarry faces were regularly inspected, and in one case it was considered necessary to work the face by means of benches in order to provide safe working conditions.

Electric shot-firing apparatus was tested to determine whether it was suitable for the proposed conditions. One exploder was found faulty and was ordered to be repaired.

Close attention has been paid to dust conditions in and around the various mines and works, and an inspection was made of the old workings in an adjacent mine to ascertain whether it was safe for operations to approach those workings.

Underground machinery was regularly inspected and tested to ensure that it was being maintained in safe condition.

In some cases it was found that the timber supplied to the mine was not good, and the matter was discussed with the supplying contractor in order to obtain a better quality timber.

Complaints were investigated with regard to unsafe blasting at a quarry and steps were taken to ensure safe blasting practice.

Ventilation.

The ventilation of underground working places, at the various mines, was kept under close observation. Main air currents were checked by means of the anemometer to ascertain whether the provisions of the Act were being complied with. In some cases, deficiencies were found and had to be rectified. In one case, it was found that a large fall of ground had occurred in the return airway, and this had to be reopened to restore the ventilation. In some cases, the brattice was either absent or was badly erected, consequently the working place was not adequately supplied with air. The necessary work was ordered to be carried out to provide a proper air circulation. Difficulty was experienced in obtaining supplies of brattice cloth, and this caused some inconvenience. It was found necessary to withdraw workmen in some cases of deficiency and in other cases the firing of shots, during the working shift, was forbidden until sufficient air was provided to carry away the fumes from blasting.

Wet and dry bulb temperatures were regularly recorded in the various underground working places, and were generally found to be within the prescribed limits. One working place was found with temperature readings of 70° Fah. wet bulb and 71° Fah. dry bulb. The Regulations provide that when the wet bulb temperature is 70° Fahrenheit, there must be at least two degrees difference between it and the reading on the dry bulb thermometer.

This place was ordered to cease working until the required two degrees deficiency could be obtained. There was a good flow of air through the place, but the air was heated from adjacent old workings. All other observed temperatures were well below the limits laid down by the Regulations and were generally below 60° Fah. wet bulb and 62° Fah. dry bulb temperatures.

Uneven and high roof conditions, in one section, caused difficulty in maintaining an adequate flow of air into the working places, as it was very difficult to efficiently erect brattice under such conditions. Unless a very high velocity is available at the entrance to such places bratticing becomes ineffective.

Machinery.

The underground machinery was regularly examined, and electrical tests were carried out to ensure that the electrical equipment was maintained in safe condition. Some defects were found and had to be remedied, to allow the equipment to be safely handled. In some cases, it was possible to make the necessary adjustments, but, in other cases, the equipment was put out of service until the necessary repairs were carried out by an electrician.

The insulation resistance of some of the underground installations was found to be below the minimum of 1 Megohm, and instructions were issued for the defect to be remedied. Damp conditions renders the ordinary V.I.R. cables unsuitable for use underground, and it found necessary to order the replacement of these unsuitable cables, in some cases.

In one case, it was found that lights had been installed underground by connecting two lights in series across two phase wires. The electrician was immediately instructed to disconnect the lights, as the practice is not good. The pressure on any lighting system should not exceed the limits of "Low Voltage".

Earth leakage units were regularly tested. In some cases, these units did not function satisfactorily, and adjustments had to be carried out before the portable underground machines were allowed to continue operating.

Some workmen reported receiving slight shocks from one of the drilling machines. This matter was investigated, and it was found that the shocks were received from the low voltage continuity circuit. The faulty equipment was repaired.

Health and Sanitation.

Matters affecting health have been given due attention, and remedial measures have been enforced in some cases. Additional sanitary conveniences had to be provided, at some places, in the underground workings, and better arrangements, for the regular cleaning of the conveniences, had to be insisted upon.

Exposure of workmen to harmful dust and fumes was closely watched, and precautionary measures were taken when and where considered necessary.

Explosives.

The storage of explosives has been constantly checked and, in some cases, it was found necessary to insist upon alterations, or additions to existing storage arrangements.

One detonator magazine was destroyed when a young boy, less than ten years of age, unscrewed the lock-fitting and entered the magazine containing several thousand detonators. Before admitting a piece of lighted fuse into the building, he carried away a box containing about one thousand electric detonators and deposited the contents several yards away. He also carried several hundred ordinary detonators out of the building and then lighted a piece of fuse which he placed inside the detonator magazine. The lighted fuse caused the detonators to explode, and the magazine was blown to pieces. About three hundred detonators were found at the side of a tramtrack, about three hundred yards from the magazine. Apparently the boy had these detonators upon his person when the explosion occurred. He probably became frightened and threw them away into the bush.

Several detonators were tested and all were found in good condition, even though some were several years old.

One case of misfired shots was investigated. When a series of twelve shots were fired at a quarry it was discovered that five shots had misfired. The powder monkey tested the circuit, for continuity, after connecting the shots to the shotfiring cable and everything was in satisfactory condition. When the exploder was opened up at the quarry it was found that some foreign material had got into the casing and it is probable that this was

the cause of the misfires. Such a condition could have caused a faulty contact when the plunger was pushed down. The exploder was overhauled before reassembly and it functioned satisfactorily.

Inflammable Liquids.

No untoward incident was observed in connection with the storage and handling of inflammable liquids. Petrol storage installations were inspected and were generally found to comply with the provisions of the Inflammable Liquids Act.

General.

A visit was made to Adamsfield and the various osmiridium claims were inspected.

Several surveys were carried out at the small mines which experienced difficulty in obtaining the services of Licenced Surveyors to carry out this necessary work.

The new Dam Site at Risdon was inspected to see that the work was being carried out in accordance with the approved plan.

Operations and Production.

The total production of coal was 222,351 tons valued at £231,599 at the mine bins. An average number of 334 persons was employed at the mines. The corresponding figures for the previous year were 181,618 tons, valued at £181,897, and 315 persons.

The output was again a record, and represented an increase of 22.4 per cent over the previous year's production. The increase was chiefly due to the increased time worked, as seven weeks work was lost, during the previous year, owing to an industrial dispute. There was also an average increase of about 6 per cent in the number of persons employed.

All coal mines recorded an increase in production ranging from an increase of nearly 80 per cent at the Fingal Colliery to about 7 per cent increase at the Cornwall Colliery. The largest increase was 10,860 tons from the Mt. Nicholas Colliery.

Fingal-Mt. Nicholas-Dalmayne Coalfield.

The total production from this coalfield was 191,281 tons which represents 86 per cent of the State's total coal production. The previous years figures were 158,065 and 87 per cent.

The Cornwall Colliery.—This colliery produced 100,105 tons valued at £90,095, at the mine bins, and employed an average of 131 persons. The corresponding figures for the previous year were 93,551 tons, valued at £84,196, and 128 persons.

Operations continued on the same lines as in the previous year, with only five parties of miners engaged on pillar extraction, the remainder being engaged in the solid places.

One of the working places was advanced through to the surface at the Northern side of the Mount Nicholas Range, and the main fan was installed at this point in order to reduce the length of the ventilating circuit, thereby reducing the power consumption used to ventilate the mine. The outlet also provided a more direct second means of egress from the workings.

A continuous Mining Machine was imported from U.S.A. and was delivered towards the end of the year. This machine was placed in the underground workings in the New Tunnel Section of the mine where it was given a trial run. The initial trials indicated that the machine would function satisfactorily at the face, but transport and power facilities will have to be improved if the operations are to be successful.

Mount Nicholas Colliery.—This colliery produced 34,180 tons valued at £30,762, at the mine bins, and employed an average of 52 persons, compared with 23,320 tons, valued at £20,989, and 46 persons for the previous year.

This mine showed the highest total increase in production which represents an increase of 46 per cent and an increase of 13 per cent in the average number of employees.

Operations continued on the same lines as in the previous year, but it was decided to suspend operations in the 8 ft. section and workmen were placed in the other two sections.

Roof conditions improved slightly in the 6 ft. section, but conditions at the face could not be regarded as satisfactory, as the top section of inferior material continues to fall and becomes mixed with the coal below, thereby resulting in dirty coal. Production from this

section is obtained by means of electric drills and blasting out of the solid. This method of getting coal does not tend to improve the quality of the coal, as the dirt becomes intimately mixed with the good coal and the miners are not able to separate it.

Production from No. 2 seam continues by means of coal-cutting machine and "Joy" loader. Some faults were encountered which caused delays and difficulties.

The surface haulage from the mine bins to the screens is to be straightened, as many delays, due to upset skips have occurred. It is anticipated that the new layout will eliminate some of the delays.

Jubilee Colliery.—This colliery produced 22,806 tons, valued at £24,293, and employed an average of 45 persons. The previous year's figures were 20,841 tons, valued at £21,988, and 44 persons.

Production continued on the same lines as the previous year. Faulting was encountered and caused excessive weighting in one place, the timber supports being forced right into the floor, and thereby causing the roadway to be nearly closed.

A large landslide occurred, due to very heavy rains, and part of the surface haulage road was carried away. This incident resulted in a loss of about 650 tons of coal. Restoring the displaced portion of the haulage road was also an expensive job as the majority of the employees had to be engaged on the work.

Weighting in the Main Haulage also caused trouble and much time had to be spent in repairs and strengthening the supports.

Several falls occurred in the return airway and this caused difficulty in maintaining the circulation of an adequate amount of air in the mine. A small auxiliary fan was installed to improve the air circulation in the Main Heading Section of the mine but the ventilation of this section remained below standard, and it is impossible to foresee any permanent improvement until the new airway is completed and until a larger ventilating fan is installed. Men were engaged in reopening the airway on the left side of the haulage.

Dalmayne Colliery.—This colliery produced 2,681 tons, valued at £3,873, and employed an average of 7 persons. The production was 336 tons greater than the previous year for the same number of employees.

A new drive was commenced from the surface, but progress was slow as hand-boring in the sandstone rock was difficult. When the drive is connected to the underground workings, a better air circulation and second means of egress will result.

An electric generator and a pump were installed to deal with the water in the dip workings. The installation greatly facilitated drainage which previously had to be done by means of a hand pump.

Fingal Colliery.—This colliery produced 22,252 tons, valued at £27,488, and employed an average of 17 persons. The previous year's figures were 12,637 tons, valued at £14,608, and 15 persons.

The output represents an increase of nearly 80 per cent which was the largest percentage increase for any mine in the State. The output per employee was also the highest while the production of 1,711.7 tons per underground employee was nearly 600 tons greater than the next highest.

An electric haulage engine was installed, at the surface, to haul coal from the mine. This installation speeded up the transport and thereby increased the output.

Production was obtained from solid places. Holes are bored by electric boring machines and blasting is carried out by means of hand-operated electric shotfiring apparatus, firing up to five shots in series. The working places are generally damp without an excessive amount of water.

Duncan Colliery.—This colliery produced 9,257 tons, valued at £8,330, and employed an average of 13 persons, compared with 5,461 tons, valued at £5,077, and 12 persons for the previous year.

A new roadway was connected to the surface, and an electric Main and Tail Haulage Engine was installed. A new ventilating fan was also installed and the ventilation of the mine was much improved.

The heading continued to advance to the dip and a great deal of water was encountered, which rendered conditions uncomfortable at the face and retarded production.

Silkstone Mine.—Preliminary work was carried out in connection with the Silkstone Area, at the Western side of Mt. Nicholas Range, but no coal was produced.

Avoca Coalfield.

Stanhope Colliery.—This colliery produced 10,707 tons, valued at £13,393, and employed an average of 31 persons. The previous year's figures were 9,535 tons, valued at £9,447, and 27 persons.

Production was obtained from workings to the left of the Main Heading and the seam remained fairly constant, but some faulting was encountered.

Failure to provide a suitable return airway to the surface led to difficult ventilating conditions, and the owners decided to extract pillars, but after extracting only a small amount of coal, roof conditions became bad and the section had to be abandoned. An attempt is to be made to drive a road to the surface in order to provide a suitable air return, when further development of the mine will be undertaken.

Merrywood Colliery.—This colliery produced 8,208 tons, valued at £9,500, and employed an average of 10 persons, compared with 5,241 tons, valued at £5,449, and 7 persons for the previous year. Some of the coal was produced from the open cut, where about two thousand tons of coal was uncovered by previous operations.

A large diesel motor lorry capable of carrying fourteen tons of coal was put into service and this vehicle continued to operate successfully.

No new developments were undertaken, and the seam remained constant, excepting for small local faulting.

Upper Derwent Coalfield.

The Langloh Colliery produced 8,709 tons, valued at £16,424, and employed an average of 19 persons. The previous year's figures were 5,606 tons, valued at £10,636, and 20 persons.

The workings were connected to the surface towards the end of the year, and the air conditions were greatly improved as large falls continued to occur in the long return airway, and restricted the air current. The new outlet also provided a more satisfactory second means of egress.

Sandfly—Cygnet Coalfield

The Sandfly Colliery at Kaoota produced 1,402 tons, valued at £2,405, and employed an average of 3 persons. The output was only three tons more than the previous year and the same number of men was engaged.

Operations continued on the same lines, as in the previous year, but increased water inflow, towards the end of the year, caused delays. It has become necessary to instal a more effective pumping plant in order to deal with the water from the workings which are advancing to the dip. Arrangements are in hand to instal an electric pump underground, and an electric drill, with suitable Gate End Box, has been procured.

The Mersey Coalfield.

The production from this field amounted to 2,044 tons, valued at £5,036 and an average of 8 persons was employed, compared with 1,772 tons valued at £4,075 and 7 persons for the previous year.

Production was obtained from the Illamatha and Aberdeen Collieries, at Spreyton, by mining a thin seam of coal which averaged less than twenty-four inches.

Faulting was encountered in both mines, but was more serious in the Illamatha Colliery where a large upthrow fault cut off the workings, and caused operations to be confined to a narrow strip of coal between two faults. The large fault will have to be negotiated when the narrow strip of coal has been extracted.

Ore Treatment.

The Electrolytic Zinc Company treated 170,446 tons of calcines at the Risdon Works, compared with 167,727 tons for the previous year.

Zinc recovery amounted to 83,652 tons having a gross value of £3,940,356. Cadmium production was 223.4 tons having a gross value of £381,499, and 15.97 tons of cobalt oxide was recovered valued at £8,339.

Production of superphosphate was increased to 60,000 tons and zinc sulphate was also increased.

No. 2 Flash Roasting Furnace was completed and commenced operating towards the end of July. Acid production was thereby increased. The first shipment of Acid to South Australia was made in May, and it is expected that the boat should take about two weeks to complete each trip.

Production was retarded at times due to transport difficulties and also to power restrictions.

Extensions to the wharf were completed and the enclosed area will be filled in. These extensions will greatly facilitate the handling of materials at the wharf.

Constructional work in connection with the second unit of the Contact Acid plant is continuing slowly owing to shortages of material, and it is not expected that this unit will be completed for some considerable time.

Major excavations were completed in connection with the site for the new Ammonium Sulphate plant. Erection of the necessary buildings was commenced.

The rock-fill bank of the twenty-million-gallon dam was completed and reinforced concrete facing, in copper jointed panels, is being added to complete the upstream face of the bank.

The consumption of limestone was greatly reduced owing to the adoption of a new system whereby calcine is added, to the circuit, instead of crushed limestone. This new system operated satisfactorily after initial faults were remedied.

An average of 2,010 persons was employed at the works compared with an average of 1,899 for the previous year.

Carbide and Limestone.

The Australian Commonwealth Carbide Company produced 9,282 tons of calcium carbide, valued at £314,087, and employed an average of 161 persons, the corresponding figures for the previous year were 8,757 tons, valued at £246,679, and 162 persons.

Although the production was higher than the previous year shortages of material, chiefly coke, restricted production.

Shortages of material also prevented the completion of the new furnace which is still under construction, and it is not likely that it will be in operation for some considerable time.

Limestone.

Production of limestone amounted to 22,846 tons, valued at £39,252, at the quarry, and an average of 51 persons was employed. The production was 6,800 tons less than for the previous year, chiefly as the result of reduced consumption at the Electrolytic Zinc Company's Works. Only 2,300 tons were delivered to these works, compared with about 11,000 tons for the previous year.

A total of 19,071 tons of limestone was delivered to the Carbide works at Electrona to be used in the production of carbide. The balance of the output of limestone was used building and agricultural purposes.

Granite.

Granite production from the Coles Bay Quarry, amounted to 93 tons, valued at £1,045, compared with 61 tons for the previous year.

Osmiridium.

The production of osmiridium from Adamsfield was 46.141 ounces, valued at £1,339, and 5 men were engaged in production. The corresponding figures for the previous year were 39.3 ounces, valued at £914, and 4 men.

Production was obtained from the alluvial workings, as in the previous year, but water shortage caused great difficulty and it was not possible to continue working full time during the dry weather.

Tin.

The production of tin oxide from Cox Bight was 1.263 tons, containing 0.942 tons of metallic tin, valued at £837 and 2 persons were employed, compared with a production of 2.796 tons of metallic tin, valued at £1,082, and 3 men for the previous year.

Kaolin.

The production of kaolin from Surges Bay amounted to 1,923 tons, valued at £11,087, and an average of 5 men was employed. Figures for the previous year were 1,528 tons, valued at £7,930, and the same number of persons.

Quarries.

The average number of persons employed in quarries, operating under the Mines and Works Regulations Act, was 105, compared with 121 for the previous year. All quarries and brickworks were short of the necessary manpower and production was affected in consequence.

REPORT OF THE MOUNT CAMERON WATER RACE BOARD FOR THE YEAR ENDED 31st DECEMBER, 1950.

SIR,

We have the honour to submit the report of the Mount Cameron Water Race Board for the year ended the 31st December, 1950.

Production of tin-oxide from all activities, serviced by the race, was 20·8071 tons as compared with 20·2926 tons for the previous year, representing a slight rising of 0·5145 ton.

The output of tin-oxide under the fixed scale of payment for water was 12·775 tons and that under the royalty scale was 8·0321 tons representing an increase of 3·4656 tons in the former and a decrease of 2·951 tons in the latter productions.

Revenue was £1,280 17s. as compared with £1,089 12s. 7d. for last year.

Expenditure was £1,592 12s. 3d. as against £1,708 18s. 3d. for the previous year the decrease being due mainly to a non-recurring expenditure in payment of wages in lieu of long-service furlough and of a retiring allowance to a channel keeper.

There was a loss of £311 15s. 3d. in the normal working of the race system. The loss included a rising of £200 16s. 3d. in the salary and wages of employees.

On the unit basis of 100 sluichead weeks, the output of tin-oxide was 1·12 tons under the fixed scale and 0·631 ton under the royalty scale, but revenue under the former was £43·78 per ton of tin-oxide as compared with £89·932 per ton under the latter scale of charges. The regulation enacted to lift the fixed charge for water from sixteen to twenty shillings per sluichead eased the disparity but the effect was small as users on the fixed scale claimed privilege of entitlement to pay half-rates because machinery was being used in sluicing operations. On the

basis of a sluichead-week, revenue averaged 9·88 shillings under the fixed scale and 11·36 shillings under the royalty scale of charges for water, the net effect being that revenue benefited more from users of water on the royalty scale than on the fixed rate, from aspects of both production value and consumption of water.

The Board is of the opinion that the continued working system is desirable as it affords employment for a number of miners, augments the production of essential tin and contributes to the stability of the Gladstone township. Members are conscious of the recurring financial loss and are to consider ways and means of appreciating the financial position.

Race System.

Rehabilitation of the race system was completed and intakes, races, syphons, flumes, dams and culverts are in good order.

Cottages.

Amenities have been provided at the cottages of the channel-keepers and have resulted in a betterment of the living conditions.

We have the honour to be, Sir, Your obedient servants,

W. H. WILLIAMS, Chairman of the Board, C. G. RYAN, B. J. T. DUNNE, Members.

The Hon. the Minister for Mines, Hobart.

STATEMENT FOR THE YEAR ENDED 31ST DECEMBER, 1950.

Rainfall.

The registered rainfall for the year was as follows:— Great Mussel Roe ... 37 inches 40 points. Little Mussel Roe ... 37 inches 19 points.

Revenue.

Revenue from the sale of water for mining purposes was £1,280 17s., representing an increase of £230 4s. 5d., as compared with that of the previous year. Total revenue, from all sources, amounted to £1,280 17s.

Disbursements.

Expenditure amounted to £1,592 12s. 3d., representing a decrease of £116 6s., as compared with that of the previous year.

Statistics.

The statistics for the year are as follows:—

Average number of claims supplied per week ... 4 Greatest number supplied in any one week ... 7 Total number of heads supplied:— Fixed or cash sale ... 1,131 Royalty or credit scale ... 1,271

Tin ore raised:— tons. cwts. qrs. lbs. Under fixed scale ... 12 15 2 5 Under royalty scale ... 8 0 2 16 20 16 0 21

Average number of men employed per week—10.

Statement of Receipts and Payments of the Mount Cameron Water Race Suspense Account for the Year Ended 31st December, 1950.

Table with two columns: Receipts and Payments. Receipts: Water sold under fixed scale (558 10 0), Water sold under Royalty scale (722 7 0), Balance—Excess of Payments over Receipts (311 15 3), Total (£1,592 12 3). Payments: Salaries and wages (1,374 17 9), Pay-roll tax (34 7 4), Reconditioning Amber Creek Syphon (20 4 10), Tools for use on Race (26 16 8), Repairs Channel-keepers' cottages (30 0 7), Car allowance for Manager (50 1 9), Cartage and freight (23 11 3), Insurance (23 19 8), Advertising, printing and telephone (8 12 5), Total (£1,592 12 3).