

TASMANIA

REPORT

OF THE

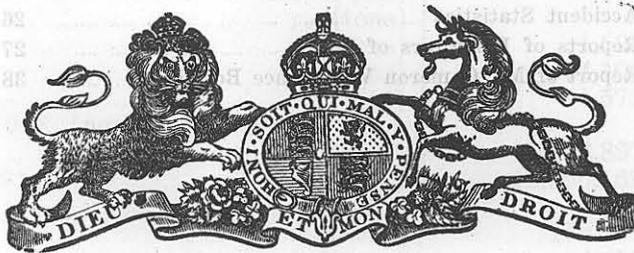
DIRECTOR OF MINES

FOR

YEAR ENDED 31ST DECEMBER

1942

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



TASMANIA:

H. H. PIMBLETT, GOVERNMENT PRINTER, HOBART

1943.

(10 20)

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H. H. PINNELL GOVERNMENT PRINTERS, HOBART

1943

2882



## 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 31st December, 1942.

### MINERAL PRODUCTION.

The total value of the output of minerals and mineral products, in Australian currency, was £3,392,583, as compared with £3,662,842 for the previous year, representing a decrease of £270,259. Increases were recorded in the production and value of copper, coal, calcium carbide, and ochre. The output of scheelite and wolfram decreased, but the collective value was substantially greater, as a result of an increase in the market price of tungsten ores. The inclined value of these products was off-set by a marked decline in the output and value of other minerals and mineral products.

The number of men directly employed in mining and metallurgical operations was 5572, as compared with 5856 for the previous year.

Continued diversions of labour to war services, disabilities in marketing under war-time conditions, protracted dry weather in areas concerned with hydraulic mining, reduced interest by private enterprise in exploratory and developmental activities, absence of new producers, and anomalous conditions in the production of strategic minerals were related more to the decreased output of metallics and non-metallics than to any factor affecting exhaustion of mineral resources.

A survey of minerals, essential for war, resulted in the formulation of proposals for arresting declines in the output of metallics critically in short supply. Implementation of the proposals, in conjunction with financial and other facilities afforded under National Security (Minerals) Regulations and by the State, should produce important developments in the industry.

Development of interest in the establishment of new industries and a short supply of materials for existing industries, absorbing non-metallics, attracted more attention to the potential resources of asbestos, dolomite, bauxite, kaolin, limestone,

talc, silica, ochre, monazite, and other members of the group of non-metallic minerals. Portending developments favour an expansion in the production of non-metallics.

There was less activity in the production of building and ornamental stones owing to restrictions in the building industry. The red granites, dolerites, serpentines, and sandstones are of particular structural and ornamental merit and a revival of the natural stone industry should ensue as a post-war development.

The Electrolytic Zinc Company of Australasia Limited was in continuous operation at Risdon in processing zinciferous calcines imported from other States and recovered from the selective treatment of Tasmanian ores. Production from imported calcines was 55,473 tons of slab zinc, valued at £1,275,879; 121.8 tons of metallic cadmium, valued at £53,750; and 13 tons of cobalt oxide, valued at £5987. Calcines actually processed from Tasmanian ores returned 18,809 tons of slab zinc, valued at £432,607; 36.75 tons of cadmium, valued at £14,919; 1129 tons of lead, valued at £25,346; 147,754 oz. of silver, valued at £19,518; and 3.254 tons of cobalt oxide, valued at £1497. An average number of 1670 men was employed at these works.

The Tasmanian ores resulted from continued exploitation of the extensive occurrences of complex zinc-lead sulphides at the Rosebery and Hercules mines on the West Coast, where an average number of 435 men was employed in mining, milling, and calcining practices. The combined quantity of ore mined was 158,657 tons. Selective flotation resulted in the production of 45,794 tons of zinc concentrates, 9596 tons of lead concentrates, and 5406 tons of copper concentrates. The recoverable quantity of metallics was fixed at 21,472.15 tons of zinc; 7561.42 tons of lead; 529.48 tons of copper; 41.39 tons of cadmium; 946,805 oz. of silver; and 9884.14 oz. of gold. Lead concentrates were exported and zinc concentrates were calcined at Zeehan and despatched to Risdon for processing.

The production of 5406 tons of copper concentrates accrued from a direction of operations to copper-sulphide sections of the ore bodies, as a commendable innovation by the Company in an effort to step-up the production of copper for the requirements of war.

The Mount Lyell Mining and Railway Company Limited continued to function as the major producer of copper. The output of crude ore from surface and underground mining was 1,532,074 tons, representing an increase of 177,842 tons in the output recorded during the previous year. Ore produced from underground workings was 4923 tons less, but there was a substantial increase in the output of ore from surface mining, as a result of an expansion of the opencuts, purchase of new large-capacity power shovels, provision of additional transport units, and innovations in transport organisation. At the concentration plant, 1,526,051 tons of ore was processed for a recovery of 49,926 tons of copper concentrate and 49,184 tons of iron pyrite concentrate. The recorded production of electrolytic copper was 11,255 tons, and this resulted from the smelting of the copper concentrate, 6012 tons of crude ore, and 147 tons of copper precipitate recovered from mine water. Of the iron pyrite concentrate recovered by selective flotation of low-grade ores, 34,449 tons were exported for use in the manufacture of fertilisers. Activities continued to be characterised by progressive advances in mining and metallurgical practices as applied to the handling of large volumes of low-grade ores. Operations by the Company substantially added to the total output of gold and silver, and afforded direct employment for an average of 1595 men.

The strategic importance of copper was appreciated, but, with the exception of one small parcel of ore from Scamander, there was no production as additional to that accruing from activities by the Mount Lyell Company and the Electrolytic Zinc Company. Diamond drilling and exploratory work on a lode series at Upper Scamander were not attended with any development of productive merit. No development of moment resulted from investigational operations in cupriferous zones on north-western fields.

Marketing disabilities and a reduced demand for lead products from Tasmanian mines, resulted in a further decline in the output of lead. The total production was 9360.42 tons, as against 11,753.47 tons for the previous year. The capacity production of the known galena series is greater than the recorded output.

Operations by the Electrolytic Zinc Company at the Rosebery and Hercules mines accounted for the greater portion of the output. The Farrell Mining Company maintained an overseas market, but, as a result of labour shortages, the throughput of ore declined to 10,840 tons. Ore treatment resulted in a recovery of 2300 tons of concentrate containing 1799 tons of lead and 20,705 oz. of silver.

Conditions of marketing and labour diversions were adverse to developmental and productive activities at small mines.

Metallic tin, in the product from lode and alluvial operations, was 1140.048 tons, valued at £297,919 sterling. The output was 107.681 tons less than for the previous year. Diversions of labour from the industry, protracted dry weather in areas concerned with hydraulic mining and the absence of new producers largely contributed to the decreased output.

The Briseis Consolidated and the Endurance Company, operating on tin alluvials; the Aberfoyle Tin No Liability, operating on a lode series; and the Bischoff Tin Mining Company, as a result

of activities by tribute parties, continued as the principal producers. These operations resulted in an output of 844 tons of metallic tin.

Quarrying of tin-granites was continued by a tribute party at the old Anchor Mine at Lottah; the Goshen Tin Mining Company was actively engaged in sluicing tin alluvials in the St. Helens district; productive operations were maintained by Renison Associated Tin Mines at Renison Bell; and quantities of tin oxide resulted from operations on the wolfram-tin lodes at the Storey's Creek Mine. The aggregate output of concentrate from these operations accounted for 127.5 tons of metallic tin.

Small mines, miscellaneous parties, and individual operators continued to be engaged on alluvial, lode, and granitic occurrences throughout the State and these operations were of collective importance in tin mining, the recorded output being 168.5 tons of metallic tin.

The declining output of tin in relation to war-time requirements was examined and proposals were formulated for stabilising production. The Mount Bischoff Mine was resumed under National Security (Minerals) Regulations and is to be worked as a Commonwealth undertaking; tin-alluvials of Dorset Flat, at South Mount Cameron, were investigated with a view of installing a large-scale dredging plant and working the area as a Commonwealth venture; and Commonwealth finance was arranged for providing a high-level water scheme for sluicing areas of alluvial ground in the St. Helens district. Commonwealth and State assistance was afforded to small enterprises, and the productive merits of several dormant properties were examined.

In quantity and value, silver continued as an important product, the recorded output being 1,190,061 oz., valued at £124,955 sterling. Operations by the Electrolytic Zinc Company on zinc-lead ores at Rosebery, and by the Mount Lyell Company on copper ores at Queenstown, contributed largely to the total production, but the output was substantially augmented by silver-lead ores from the Farrell Mine at Tullah.

In order to stimulate production, a sharp incline was arranged in the price of tungsten ores, but there was no immediate benefit, and the aggregate output of scheelite and wolfram declined from 482.41 to 397.56 tons. The depressed output was due mainly to a serious diversion of labour from the industry and not to any exhaustion of tungsten resources or depletion of ore reserves at the mines. Tungsten was in critically short supply for war requirements and proposals were formulated for stepping-up the production at established mines.

Opencutting and milling were continued by King Island Scheelite No Liability at King Island, and 215.33 tons of scheelite concentrate, valued at £71,353 sterling, were recovered from the treatment of 31,870 tons of ore. A diamond drilling campaign was commenced in search of ore volumes and grades for the purpose of stepping-up production. Encouraging results were encountered, but drilling had not been advanced sufficiently for a final assessment of productive possibilities at the close of the year.

Operations at the Storey's Creek Mine were mainly directed to the production of wolfram. Recoveries, from the mining and milling of 9022 tons of wolfram-tin ores, were 115.9 tons of high-grade wolfram and 40 tons of tin concentrate, the

latter containing 26.46 tons of metallic tin. Lode dimensions and values were maintained, but productive and developmental work was severely handicapped by labour depletions, and the output declined in consequence. Additional milling units were acquired, a programme of developmental work was designed, and proposals were formulated for relieving the labour shortage.

A progressive policy was maintained by Aberfoyle Tin No Liability and the quantity of ore mined and milled increased to 16,609 tons. The recovery of jig products was 369.8 tons of "firsts" and 615.75 tons of "seconds." Treatment of these products, by flotation and magnetic separation, resulted in a recovery of 360 tons of tin concentrate and 71 tons of wolfram. Sales from stock products amounted to 375.5 tons of tin concentrate, containing 278.5 tons of metallic tin, and 62.25 tons of wolfram. An average number of 99 men was employed.

The balance of the output of wolfram resulted from activities at small mines in eastern and north-western parts of the State.

The recorded output of gold was 18,353.36 oz., valued at £154,168 sterling, as compared with 19,908.5 oz., valued at £167,229 sterling, for the previous year.

The major portion of the gold was recovered from copper ores mined by the Mount Lyell Company, from zinc-lead ores produced by the Electrolytic Zinc Company, and from the cyanidation of tailing dumps at the Golden Gate Mine. Small quantities of gold accrued from the working of auriferous alluvials, the crushing of lode quartz, the treatment of mine dumps, the cyanidation of old tailings, and from the treatment of tin-oxides recovered from the sluicing of gold-bearing stanniferous alluvials. Production from the major activities was 17,920.3 oz. and from miscellaneous operations 433.06 oz. of fine gold.

The average market price of osmiridium was £20.62 sterling per oz., remaining at approximately the same level as that for the previous year. The recorded output declined from 206.6 oz., valued at £4212 sterling, to 142.094 oz., valued at £2930 sterling. Adamsfield was the principal field of activities, but small lots continued to come forward from irregular operations on alluvials in the Savage River areas. Uncertain conditions of marketing and gradual exhaustion of known alluvial ground, within the working capacity of small claimholders, have resulted in a drift of miners from the various fields and a persistent decline in production. The strategic importance of osmiridium has been recognised and proposals, to appreciate the price and afford an assured market, have been formulated in an effort to stimulate production.

There was a slight increase in the export of high-grade silica, but a less quantity was used in metallurgical industries within the State and the total output receded from 9268 to 7308 tons.

The Australian Commonwealth Carbide Company at Electra, the Goliath Portland Cement Company at Railton, and the Broken Hill Proprietary Company Limited at the Melrose Quarries continued as the principal producers of calcium carbide, cement, and limestone. The total output of combined products was 239,951 tons, valued at £395,114, as compared with 363,431 tons of products, valued at £476,915 for the previous year. There was an increase of 1073 tons

in the production of calcium carbide, but 91,126 tons less of limestone was exported for the iron and steel industry, and there was a marked decrease in the production of cement owing to war-time restrictions on buildings and public works. Normal export trade was affected by shortages in available shipping space.

The manufacture of calcium silicide from Tasmanian materials was continued by the Australian Commonwealth Carbide Company and the output increased to 414 tons, valued at £35,791.

War-time restrictions in industries, absorbing natural stone, adversely affected the quarrying and export of red granite. The output receded to 355 tons and operations were suspended. A commencing market for serpentine as an ornamental stone was similarly affected. Trade connections portend an active revival of the natural stone industry as a post-war development.

Developmental work was continued in the asbestos-bearing serpentines at Dundas and results were regarded, by the operating company, as sufficiently encouraging to warrant the installation of mining and separating units. Early production of asbestos is anticipated, and, if commercially successful, these operations should comprise an important development in the non-metallic industry.

There was a slight revival in ochre mining and 21 tons was exported. This industry had been inactive since 1927.

Kaolin, other than clay used in the manufacture of bricks and earthenwares, was produced for State industries and export trades. The recorded output was 1098 tons, valued at £1334.

Talc mining has been inactive since 1927, but a deposit of high-grade material at Gawler is to be developed to determine productive possibilities.

A period of settled industrial conditions prevailed in coal mining and the industry benefited by improved trade resulting from restricted importations of mainland coals. The recorded output was 134,442 tons, valued at £108,241, as compared with 109,714 tons, valued at £85,311 for the previous year.

The Cornwall Coal Company continued as the major producer and increased productive activities resulted in an output of 94,265 tons, as compared with 75,086 tons for the previous year. General advancement of coal faces and active pillar extraction accounted for 77,550 tons at the Cornwall Colliery, whilst 16,715 tons resulted from mechanised coal-winning at the Mount Nicholas Colliery.

At the Jubilee Colliery, the main heading was advanced to 2130 feet, and the output increased to 21,735 tons. Coal-winning was confined to the eastern workings and main heading development.

Coal-cutting was mechanised at the Stanhope Colliery and production increased to 7502 tons, valued at £7613.

The balance of the production accrued from operations at small collieries in the southern, eastern, and north-western districts. Preliminary arrangements were completed for a rehabilitation of operations at the Langloh Coal Mine at Hamilton and early production is anticipated.

Developmental and productive activities are reviewed, in detail, by district inspectors in the appended reports.



## QUANTITY AND VALUE OF MINERALS.

STATISTICS RELATING TO THE MINING INDUSTRY FOR THE YEAR ENDING 31ST DECEMBER, 1942.

Mineral.	MINERAL DIVISIONS.					Total Quantity.	Value.
	Northern and Southern.	Eastern.	North-Eastern.	North-Western.	Western.		
Asbestos ..... (tons)	....	....	....	....	7	7	£ 20
Bismuth ..... (tons)	....	....	....	02	....	02	10
Copper ..... (tons)	....	478	....	....	11,784·612	11,785·09	730,675
Coal ..... (tons)	1,476	129,322	....	3,644	....	134,442	108,241
Cadmium ..... (tons)	....	....	....	....	41·39	41·39	18,462
Carbide, Cement, and Lime-stone ..... (tons)	16,676	....	....	217,722	5,553	239,951	395,114
Gold ..... (fine oz.)	190·104	811·726	96·71	29·01	17,225·814	18,353·364	154,168
Granite (Red) ..... (tons)	....	355	....	....	....	355	2,937
Kaolin ..... (tons)	....	....	....	1,098	....	1,098	1,334
Lead ..... (tons)	....	....	....	....	9,360·42	9,360·42	234,011
Ochre ..... (tons)	....	....	....	21	....	21	53
Osmiridium ..... (oz.)	117·621	....	....	24·473	....	142·094	2,930
Pyrites ..... (tons)	....	....	....	....	34,449	34,449	43,061
Scheelite ..... (tons)	....	....	....	215·332	....	215·332	71,353
Silica ..... (tons)	1,448	....	....	382	5,478	7,308	3,433
Silver ..... (fine oz.)	....	....	....	....	1,190,061·44	1,190,061·44	124,955
Tin ..... (tons)	2·420	386·936	579·11	84·187	95·395	1,148·048	297,919
Wolfram ..... (tons)	....	181·43	....	1·80	....	183·23	58,397
Zinc ..... (tons)	....	....	....	....	21,472·15	21,472·15	585,116
Total Value .....	....	....	....	....	....	....	£2,832,189
Total Value Australian Currency .....	....	....	....	....	....	....	£A3,392,583
Average Number of Men Employed .....	2,085	528	316	443	2,200	5,572	....

The Electrolytic Zinc Company of Australasia Limited recovered 55,473 tons of zinc, valued at £1,275,879; 121·8115 tons of cadmium, valued at £53,750; and 16·2705 tons of cobalt oxide, valued at £7484, from other than Tasmanian ores; and employed an average of 1670 men at Risdon.  
The Australian Commonwealth Carbide Company, Electrona, produced 414 tons of calcium silicide, valued at £35,791.

**ASBESTOS.**

RETURN showing the Quantity and Value of Asbestos produced from 1899 to 1942 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
Total.....	3582·25	£7342

**BARYTES.**

RETURN showing the Quantity and Value of Barytes produced to 31st December, 1942.

Year.	Quantity.	Value.
	Tons.	£
Prior to 1916.....	50	100
1916.....	83	359
1917.....	52	234
1918.....	217	977
1919.....	558	1618
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.....	—	—
Total.....	2163·2	£7800

**BISMUTH.**

RETURN showing the Quantity and Value of Bismuth produced from 1904 to 1942 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.....	—	—
1923.....	—	—
1924.....	—	—
1925.....	—	—
1926.....	—	—
1927.....	—	—
1928.....	—	—
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
Total.....	81·774	£27,000

**COAL.**

RETURN showing the Quantity and Value of Coal raised to 31st December, 1942.

Year.	Quantity.	Value.
	Tons.	£
Previous to 1880.....	145,114	115,000
1880 to 1903 inclusive.....	767,261·5	659,010
1904.....	61,109	51,942
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
Total.....	4,268,233	£3,307,385

## COPPER.

The production for the year was 11,785.09 tons, valued at £730,675.

RETURN showing the Quantity and Value of Copper in Blister Copper, Copper Ore, and Zinc Lead Ore during the Years 1919 to 1942 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	30.4	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	435,232	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.....	529.580	32,827	11,255.132	697,818	.478	30	11,785.09	730,675
Total.....	529.580	32,827	217,512.742	12,480,781	402.827	9317	218,445.149	12,522,925

The Mount Lyell Mining and Railway Company Limited.  
Return for the Calendar Year 1942.

Ore and metal-bearing material smelted:—	Tons (Dry).
Source of Material.	
Ore:—From the Company's North Lyell Mine	6,012
Concentrates:—From the Company's North Lyell Mine, Lyell Comstock Mine, Crown Lyell Mine, and West Lyell Mines ore	49,926
Purchased ore	11
Total	55,949

Source of Material.	Tons (Dry).
Limestone delivered to works (tons)	5,523
Silica delivered at works	5,478
Pyritic concentrate shipped from Regatta Point (tons)	34,449

## Blister copper produced, containing:

Copper (tons)	11,256	Approximate value £A1,137,930.
Silver (oz.)	36,299	
Gold (oz.)	7,252	

## Average number of men employed—

Mining Department—At the Company's	
North Lyell Mine	29
Ditto, Lyell Comstock Mine	73
Ditto, Crown Lyell Mine	—
Ditto, Royal Tharsis Mine	144
Ditto, West Lyell Mines	387
Miscellaneous	190
Total	823

Reduction Works Department (including Lake Margaret) 662

Railway Department—Mount Lyell Railway 110

Total 1,595

Copper produced from the inception of the Company to the 31st December, 1942, 376,106 tons.

Silver produced from the inception of the Company to the 31st December, 1942, 15,284,369 oz. (fine).

Gold produced from the inception of the Company to the 31st December, 1942, 474,776 oz. (fine).

Dividends paid during the year, £135,625 = 1s. 9d. per share.

Dividends paid from the inception of the Company to the 31st December, 1942, £6,414,069.

## CADMIUM.

The quantity recovered was 41.39 tons valued at £18,462, compared with 47.07 tons valued at £21,087 for 1941.

RETURN showing the Quantity and Value of Cadmium recovered for the Years 1936 to 1942.

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
Total	394.7657	142,550

## CEMENT, CARBIDE, AND LIMESTONE.

The combined value of output from these three industries amounted to £395,114, as compared with £476,915 for 1941.

**GOLD.**

The quantity won was 18,353·364 oz., fine, valued at £154,168, as compared with 19,908·498 oz., valued at £167,229 for 1941.

*RETURN showing the Quantity and Value of Gold won to 31st December, 1942.*

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 .....	7,686·470	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 .....	4,860·7	20,649
1928 .....	3,603·43	15,306
1929 .....	5,596·88	23,772
1930 .....	4,467·2	18,975
1931 .....	4,759·31	22,118
1932 .....	5,937·17	34,943
1933 .....	6,672·74	41,783
1934 .....	5,612·26	38,930
1935 .....	8,342·68	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
<b>Total .....</b>	<b>2,215,357·068</b>	<b>£9,447,391</b>

**GRANITE (RED).**

*RETURN showing the Quantity and Value of Red Granite produced during the Years 1935 to 1942 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
<b>Total.....</b>	<b>2801·5</b>	<b>18,378</b>

**IRON PYRITES.**

*RETURN showing the Quantity and Value of Iron Pyrites produced during the Years 1915 to 1942 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.....	—	—
1925.....	—	—
1926.....	—	—
1927.....	—	—
1928.....	—	—
1929.....	—	—
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
<b>Total .....</b>	<b>399,707·973</b>	<b>£482,255</b>

**KAOLIN.**

*RETURN showing the Quantity and Value of Kaolin produced during the Years 1940 to 1942 inclusive.*

Year.	Quantity.	Value.
	Tons.	£
1940.....	835·5	988
1941.....	1130	1428
1942.....	1098	1334
<b>Total.....</b>	<b>3063·5</b>	<b>3750</b>

**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
<b>Total.....</b>	<b>2,108,943</b>	<b>£1,439,674</b>

**LEAD.**

The output was 9360·42 tons, valued at £234,011, as compared with 11,753·47 tons, valued at £293,837 for 1941.

*RETURN showing the Quantity and Value of Lead included in Silver Lead during the Years 1919 to 1942 inclusive.*

Year.	Quantity.	Value.
	Tons.	£
1919.....	2357·142	64,403
1920.....	3855·642	142,268
1921.....	1434·794	32,241
1922.....	4925·880	118,257
1923.....	4786·057	127,542
1924.....	4559·110	154,881
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
Total.....	137,468·225	£3,154,670

**NICKEL.**

*RETURN showing the Quantity and Value of Nickel produced from 1927 to 1942 inclusive.*

Year.	Quantity.	Value.
	Tons.	£
1927.....	86·2	14,656
1928.....	10	1697
1929.....	85·44	14,765
1930.....	11·76	1999
1931.....	0·2	45
1932.....	0·55	136
1933.....	8·65	1948
1934-37.....	—	—
1938.....	19·75	3604
1939-42.....	—	—
Total.....	222·55	£38,850

**OCHRE.**

*RETURN showing the Quantity and Value of Ochre produced during the Years 1918 to 1942 inclusive.*

Year.	Quantity.	Value.
	Tons.	£
1918.....	100	200
1919.....	—	—
1920.....	—	—
1921.....	14	56
1922.....	—	—
1923.....	—	—
1924.....	20	50
1925.....	—	—
1926.....	38	69
1927-1941.....	—	—
1942.....	21	53
Total.....	193	£428

**OSMIRIDIUM.**

The quantity of metal won during the year was 142·094 oz., valued at £2930, as compared with 206·578 oz., valued at £4212 for 1941.

*RETURN showing the Quantity and Value of Osmiridium produced during the Years 1910 to 1942 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.....	1669·715	39,614
1920.....	2009·196	77,114
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.....	3172·5	61,908
1927.....	632·687	7456
1928.....	1627·186	42,458
1929.....	1360	30,624
1930.....	952·7	16,235
1931.....	1279·54	18,028
1932.....	784·95	9075
1933.....	548	4849
1934.....	487·7	4622
1935.....	235	2103
1936.....	280·6	3862
1937.....	586·42	9077
1938.....	190·87	2976
1939.....	283·065	5015
1940.....	464·740	11,604
1941.....	206·578	4212
1942.....	142·094	2930
Total.....	30,101·041	£649,495

The following table gives particulars of osmium won from Adamsfield since its discovery up to 31st December, 1942:—

Period.	Quantity.	Value.
Quarter ending—	Oz. dwt. gr.	£ s. d.
30th June, 1925 .....	9 1 12	281 8 11
30th September, 1925...	625 19 9	20,144 10 11
31st December, 1925 ...	2238 5 9	68,757 1 4
31st March, 1926 .....	992 13 7	23,339 0 1
30th June, 1926 .....	633 12 20	12,202 18 4
30th September, 1926...	862 18 16	8475 8 11
31st December, 1926 ...	555 6 6	5539 1 3
31st March, 1927 .....	203 9 11½	1909 5 7
30th June, 1927 .....	142 3 9	1706 0 6
30th September, 1927...	93 16 6	1132 1 6
31st December, 1927 ...	113 10 8	1362 0 0
31st March, 1928 .....	442 8 9	10,509 18 2
30th June, 1928 .....	261 19 7	6529 9 1
30th September, 1928...	551 16 2	15,350 18 0
31st December, 1928 ...	293 5 0	7840 11 4
31st March, 1929 .....	168 9 8	4147 6 4
30th June, 1929 .....	262 7 16	5683 4 7
30th September, 1929...	292 2 23	7905 14 9
31st December, 1929 ...	313 2 17	6208 3 0
31st March, 1930 .....	186 9 17	3278 17 0
30th June, 1930 .....	67 6 11	1300 12 1
30th September, 1930...	126 16 9½	1898 4 10
31st December, 1930 ...	347 12 17	4302 11 5
31st March, 1931 .....	240 19 14	4008 2 4
30th June, 1931 .....	251 9 6	3104 14 9
30th September, 1931...	251 10 15	3428 14 6
31st December, 1931 ...	354 12 3	4741 11 10
31st March, 1932 .....	250 5 21	3372 19 9
30th June, 1932 .....	136 12 19	1504 8 9
30th September, 1932...	80 19 3	869 2 8
31st December, 1932...	123 7 18	1038 2 1
31st March, 1933 .....	161 0 0	1368 0 0
30th June, 1933 .....	162 0 0	1458 0 0
30th September, 1933...	153 0 0	1364 0 0
31st December, 1933...	60 0 0	540 0 0
31st March, 1934 .....	148 5 0	1408 0 0
30th June, 1934 .....	107 15 0	969 0 0
30th September, 1934	71 14 0	645 0 0
31st December, 1934...	160 0 0	1600 0 0
31st March, 1935 .....	40 0 0	350 0 0
30th June, 1935 .....	12 0 0	108 0 0
30th September, 1935	127 9 10	1147 4 7
31st December, 1935...	55 0 0	495 0 0
31st March, 1936 .....	30 0 0	270 0 0
30th June, 1936 .....	30 0 0	285 0 0
30th September, 1936..	133 12 0	2004 0 0
31st December, 1936...	65 0 0	1105 0 0
31st March, 1937 .....	54 0 0	918 0 0
30th June, 1937 .....	150 10 0	2709 0 0
30th September, 1937..	48 10 0	897 0 0
31st December, 1937...	76 1 15	723 0 0
31st March, 1938 .....	28 10 0	413 0 0
30th June, 1938 .....	13 0 0	174 0 0
30th September, 1938	33 7 0	540 0 0
31st December, 1938...	97 7 0	1558 0 0
31st March, 1939 .....	65 0 0	1105 0 0
30th June, 1939 .....	100 5 0	1704 0 0
30th September 1939...	48 0 0	816 0 0
31st December 1939...	52 11 11	1051 0 0
31st March, 1940 .....	124 3 0	2793 0 0
30th June, 1940 .....	118 14 0	3412 0 0
30th September, 1940	62 0 0	1550 0 0
31st December, 1940..	53 14 14	1075 0 0
31st March, 1941 .....	38 17 12	777 0 0
30th June, 1941 .....	48 0 0	960 0 0
30th September, 1941.	60 16 9	1265 0 0
31st December, 1941...	44 11 10	919 0 0
31st March, 1942 .....	20 0 0	412 0 0
30th June, 1942 .....	25 0 0	516 0 0
30th September, 1942.	29 0 0	598 0 0
31st December, 1942.	43 12 7	899 0 0
Total.....	14,309 4 22	£282,347 9 2

## SHALE.

RETURN showing the Quantity and Value of Shale produced during the Years 1910 to 1942 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
1936-1942 .....	—	—
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.....	Tasmanite Shale Oil Company Ltd.....	—
1936-1941 ...	Tasmanite Shale Oil Company Ltd.....	—
	Total .....	357,115

## SCHEELITE.

RETURN showing the Quantity and Value of Scheelite produced during the Years 1917 to 1942 inclusive.

Year.	Quantity.	Value.
	Tons.	£
1917.....	69	12,130
1918.....	216	39,252
1919.....	198·98	43,181
1920.....	105·09	17,905
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
Total.....	1528·020	£315,135



**TALC.**

RETURN showing Quantity and Value of Talc produced during the Years 1928 to 1942 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
1937-1942 .....	—	—
<b>Total .....</b>	<b>105·6</b>	<b>315</b>

**TIN.**

The output was 1148·048 tons, valued at £297,919, as compared with 1255·729 tons, valued at £328,340 for 1941.

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 1942 inclusive.

Year.	Quantity.	Value.
	Tons.	£
1873-1879 inclusive.....	16,429	1,054,923
1880 to 1904 inclusive .....	53,695·88	7,167,564
1905 .....	2724·05	362,670
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 .....	1800·899	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	282,798
1940 .....	1430·198	367,127
1941 .....	1255·729	328,340
1942 .....	1148·048	297,919
<b>Total.....</b>	<b>130,283·964</b>	<b>£20,045,028</b>

**WOLFRAM.**

RETURN showing the Quantity and Value of Wolfram produced during the Years 1899 to 1942 inclusive.

Year.	Quantity.	Value.
	Tons.	£
1899 to 1903 inclusive .....	57·34	2157
1904.....	15·5	1147
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	9396
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
<b>Total .....</b>	<b>4473·446</b>	<b>£669,688</b>

**ZINC.**

RETURN showing the Quantity and Value of Zinc produced during the Years 1917 to 1942 inclusive.

Year.	Quantity.	Value.
	Tons.	£
1917.....	48	1968
1918.....	3822	152,880
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	181,242
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
<b>Total.....</b>	<b>201,601·44</b>	<b>£4,627,120</b>

## ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED.

## RETURN FOR THE YEAR 1942.

EXTRACTION FROM ORES AND CONCENTRATES:  
RISDON.

<i>From other than Tasmanian Ores—</i>	
Zinc .....	55,473 tons
Cadmium .....	121·8115 tons
Cobalt oxide .....	13·0164 tons

<i>From Tasmanian Ores—</i>	
Zinc .....	18,809 tons
Cadmium .....	36·75 tons
Cobalt oxide .....	3·254 tons
Lead .....	1,129 tons
Silver .....	147,754 oz.

*Men Employed—*  
The average number of men employed was 1670.

## WEST COAST DIVISION.

<i>Ore Mined—</i>	
From Hercules Mine .....	51,989 Tons.
From Rosebery Mine .....	106,668
Total .....	158,657

*Concentrates Produced—*

	Tons.
Zinc concentrates .....	45,794
Lead concentrates .....	9,596
Copper concentrates .....	5,406
	60,796

*Recoverable Quantity in Ores Mined—*

Zinc .....	21,472·14 tons
Lead .....	7,561·42 tons
Copper .....	529·48 tons
Cadmium .....	41·39 tons
Silver .....	946,805·26 oz.
Gold .....	9,884·04 oz.

*Average Number of Men Employed—*

Hercules Mine .....	89
Rosebery Mine .....	322
Zeehan Smelters .....	24
Total .....	435

## QUANTITY AND VALUE OF METALS AND MINERALS RAISED.

*RETURN showing Quantity and Value of Metals and Minerals Raised in Tasmania as at 31st December, 1942.*

Mineral or Metal.	Quantity.	Value.
Asbestos .....	(tons) 3,582·25	£ 7,342
Barytes .....	(tons) 2,163·2	7,968
Bismuth .....	(tons) 81·774	27,000
Cadmium .....	(tons) 394·7657	142,550
Carbide, Cement, and Limestone .....	(tons) 2,133,782	2,730,442
Carbide to 1936 (now under Carbide, Cement, and Limestone) .....	(tons) 62,090	1,212,207
Cement to 1936 (now under Carbide, Cement, and Limestone) .....	(tons) 525,391	2,004,014
Coal .....	(tons) 4,268,233	3,307,385
*Cobalt .....	(tons) ·387	243
Copper (Blister) to 1918 (now shown under Silver and Copper) .....	(tons) 166,600	13,788,527
Copper Matte .....	(tons) 6,227	133,736
Copper Ore to 1918 (now under Copper) .....	(tons) 41,768·63	577,873
Copper (from 1919) .....	(tons) 218,445·149	12,522,925
Gold .....	(fine oz.) 2,215,357·068	9,447,391
Granite (Red) .....	(tons) 2,801·5	18,378
Graphite .....	(tons) 10	16
Ilmenite .....	(tons) 550	1,256
Iron Ore .....	(tons) 46,170	31,756
Iron Pyrites .....	(tons) 399,707·973	482,255
Kaolin .....	(tons) 3,063·5	3,750
Lead (from 1919) .....	(tons) 137,468·225	3,154,670
Limestone to 1936 (now under Carbide, Cement, and Limestone) .....	(tons) 2,108,943	1,439,674
Manganese .....	(tons) ·6	3
Nickel .....	(tons) 222·55	38,850
Ochre .....	(tons) 193	428
Osmiridium .....	(oz.) 30,093·951	649,484
Red Oxide .....	(tons) 3·5	9
Scheelite .....	(tons) 1,528·02	315,135
Silica .....	(tons) 44,106	19,321
Shale .....	(tons) 41,572	31,231
Silver Lead to 1918 (now shown under Silver and Lead) .....	(tons) 1,083,897·821	6,429,291
Silver (from 1919) .....	(fine oz.) 18,590,168·99	2,180,384
Talc .....	(tons) 105·6	315
Tin .....	(tons) 130,283·964	20,045,028
Wolfram .....	(tons) 4,473·446	669,688
Zinc .....	(tons) 201,601·44	4,627,120
Total .....	.....	£86,047,645

\* In addition, 3·254 tons of cobalt oxide, valued at £1497, has been credited as a proportional recovery from the processing of zinc calcines, produced from Tasmanian ores, but has not been brought to account in the statistical compilation for 1942.

**STATISTICS OF PRODUCTION.**

*RETURN showing the Annual Published Value of Mineral Products for the State of Tasmania from 1880 to 1942 inclusive.*

Year.	Value.	Year.	Value.
	£		£
1880 .....	554,031	1914.....	1,007,038
1881 .....	602,723	1915.....	1,225,575
1882 .....	556,306	1916.....	1,521,050
1883 .....	560,873	1917.....	1,582,322
1884 .....	468,302	1918.....	1,597,694
1885 .....	518,885	1919.....	1,301,090
1886 .....	489,966	1920.....	1,421,104
1887 .....	593,256	1921.....	822,851
1888 .....	616,733	1922.....	1,013,415
1889 .....	504,718	1923.....	1,219,456
1890 .....	444,310	1924.....	1,496,804
1891 .....	528,388	1925.....	1,700,861
1892 .....	526,909	1926.....	1,808,847
1893 .....	627,909	1927.....	1,621,027
1894 .....	732,764	1928.....	1,593,828
1895 .....	575,692	1929.....	1,790,653
1896 .....	662,058	1930.....	1,270,114
1897 .....	1,006,140	1931.....	894,986
1898 .....	1,071,084	1932.....	897,168
1899 .....	1,660,622	1933.....	1,053,373
1900 .....	1,888,695	1934.....	1,037,351
1901 .....	1,763,896	1935.....	1,387,511
1902 .....	1,378,406	1936.....	1,979,637
1903 .....	1,354,044	1937.....	2,653,822
1904 .....	1,379,204	1938.....	2,294,735
1905 .....	1,729,129	1939.....	2,520,282
1906 .....	2,257,147	1940.....	3,137,330
1907 .....	2,277,159	1941.....	3,055,838
1908 .....	1,650,027	1942.....	2,832,189
1909 .....	1,574,995	Value of pro-	
1910 .....	1,432,193	duction 1867-	
1911 .....	1,349,497	1942, pre-	
1912 .....	1,493,502	viously un-	
1913 .....	1,415,700	recorded .....	2,064,531
		Total.....	£86,047,645

*RETURN showing the Total Number of Leases and Licences in Force on 31st December, 1942.*

Mineral.	Number.	Number of Sluiceways.	Area Acres.
Antimony .....	...	...	...
Asbestos .....	1	...	10
Barytes .....	1	...	10
Bismuth .....	...	...	...
Coal.....	31	...	5973
Clay .....	3	...	78
Copper .....	2	...	30
Copper-Nickel .....	...	...	...
Dolomite .....	...	...	...
Granite .....	4	...	30
Gold .....	75	...	1176
Gravel .....	...	...	...
Iron .....	2	...	107
Limestone .....	5	...	434
Lead-Zinc .....	1	...	80
Molybdenum .....	...	...	...
Minerals .....	40	...	5402
Marble .....	...	...	...
Manganese.....	1	...	10
Osmiridium .....	1	...	10
Pyrites .....	1	...	80
Scheelite .....	3	...	281
Shale .....	3	...	117
Silica .....	1	...	10
Silver .....	12	...	407
Stone .....	3	...	65
Sand .....	1	...	5
Tin .....	310	...	8599
Wolfram.....	4	...	129
Mining Easements and Machinery Sites.....	83	...	511½
Licences to Search.....	...	...	...
Water Licences.....	346	1386	2031½
Total.....	934	1386	25,586

**STATISTICS OF MINING COMPANIES.**

*RETURN showing the Amounts Paid in Dividends by Mining Companies during the Year ending 31st December, 1942.*

Mines.	Dividends.
	£ s. d.
Copper .....	*96,875 0 0
Gold .....	...
Tin .....	56,374 0 0
Silver .....	...
Coal.....	3525 0 0
Scheelite.....	6250 0 0
Zinc .....	*243,000 0 0
Total .....	£406,024 0 0

\* These amounts represent total dividends out of Tasmanian profits, the remainder being paid from profits ex-Tasmanian.

*RETURN showing the Mining Companies Registered during the Year ending 31st December, 1942.*

Number of Companies.	Capital.
—	—

In addition to the above, 2 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, 1942.*

Head of Revenue.	Amount.
	£ s. d.
Rent of Auriferous and Mineral Lands.....	6258 19 7
Fees, Auriferous and Mineral Lands .....	410 3 4
Survey Fees .....	545 16 6
Fees under the Explosives and Inflammable Liquids Act .....	2840 15 3
Total .....	£10,055 14 8

RETURN showing the Total Area of Land and Number of Sluiceways of Water Applied for during the Year ending December, 1942.

RETURN showing Total Number and Area of Leases and Licences Issued during the Year ending 31st December, 1942.

Mineral.	Number.	Sluiceways.	Area.	Mineral.	Leases.	Sluiceways.	Area.
			Acres.				Acres.
Asbestos .....	2	...	85	Asbestos .....	...	...	...
Bismuth .....	...	...	...	Barytes .....	...	...	...
Barytes .....	...	...	...	Clay .....	...	...	...
Clay .....	...	...	...	Copper .....	...	...	...
Coal .....	1	...	20	Copper-Nickel .....	...	...	...
Copper .....	...	...	...	Coal .....	...	...	...
Gold .....	2	...	55	Granite .....	1	...	5
Granite .....	...	...	...	Gold .....	6	...	78
Iron .....	3	...	191	Iron Ore .....	...	...	...
Lead .....	...	...	...	Limestone .....	1	...	100
Limestone .....	...	...	...	Minerals .....	2	...	287
Manganese .....	...	...	...	Manganese .....	...	...	...
Minerals .....	3	...	160	Nickel .....	...	...	...
Nickel-Silver .....	...	...	...	Osmiridium .....	...	...	...
Ochre .....	1	...	20	Phosphate .....	1	...	7
Phosphate .....	...	...	...	Silver .....	...	...	...
Sand .....	...	...	...	Silica .....	1	...	10
Silica .....	1	...	2	Silver-Lead .....	...	...	...
Silver Lead .....	1	...	40	Stone .....	...	...	...
Tin .....	71	...	2177	Tin .....	21	...	267
Wolfram .....	1	...	5	Wolfram .....	...	...	...
Machinery Sites and Mining Easements ...	1	...	1	Water-rights and Dam Sites .....	28	101	5
Water-rights and Dam Sites .....	37	89	331	Licences to Search for Coal and Oil .....	...	...	...
Licences to search for Coal .....	...	...	...	Mining Easements and Machinery Sites .....	5	...	12
<b>Total.....</b>	<b>124</b>	<b>89</b>	<b>3087</b>	<b>Total.....</b>	<b>66</b>	<b>101</b>	<b>771</b>

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 1882 to 1903, and for Six Months ending 31st December, 1903, and for the Years ending 31st December, 1904 to 1942 inclusive.

Year.	Amount.	Year.	Amount.
	£ s. d.		£ s. d.
1882.....	23,077 1 9	1912.....	17,639 19 11
1883.....	15,439 14 5	1913.....	19,410 17 8
1884.....	6,981 11 10	1914.....	14,087 0 6
1885.....	11,070 5 7	1915.....	17,679 3 6
1886.....	12,523 10 4	1916.....	14,678 19 10
1887.....	14,611 11 5	1917.....	14,669 7 2
1888.....	23,502 8 4	1918.....	17,833 14 9
1889.....	17,254 9 0	1919.....	15,388 7 7
1890.....	26,955 4 9	1920.....	16,767 11 6
1891.....	37,829 16 5	1921.....	11,248 14 11
1892.....	17,568 18 4	1922.....	14,184 7 3
1893.....	16,971 9 2	1923.....	13,224 11 9
1894.....	16,732 7 7	1924.....	14,678 13 11
1895.....	15,323 1 9	1925.....	14,229 8 7
1896.....	20,901 13 2	1926.....	15,163 15 7
1897.....	25,631 0 3	1927.....	16,887 9 9
1898.....	33,661 13 9	1928.....	14,313 12 0
1899.....	24,696 10 5	1929.....	14,665 10 7
1900.....	28,380 11 10	1930.....	11,166 7 2
1901.....	21,569 5 2	1931.....	11,520 1 10
1902.....	19,471 0 1	1932.....	10,097 18 6
1903.....	17,776 14 3	1933.....	9,459 6 9
1903, 1 July to 31 Dec. ....	14,758 17 1	1934.....	11,166 2 11
1904, Jan. to Dec. ....	16,631 8 2	1935.....	10,548 10 0
1905.....	20,208 17 0	1936.....	11,023 11 3
1906.....	24,136 12 5	1937.....	12,206 10 1
1907.....	24,794 7 7	1938.....	11,177 11 5
1908.....	20,311 3 0	1939.....	11,556 5 1
1909.....	22,804 1 5	1940.....	11,018 3 9
1910.....	22,221 18 0	1941.....	10,835 18 8
1911.....	20,556 15 10	1942.....	9,509 18 2

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, 1928 to 1942 inclusive.

Nature of Lease.	In force on 31st Dec., 1928.		In force on 31st Dec., 1929.		In force on 31st Dec., 1930.		In force on 31st Dec., 1931.		In force on 31st Dec., 1932.		In force on 31st Dec., 1933.		In force on 31st Dec., 1934.		In force on 31st Dec., 1935.		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.		
	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.	728	28,103	652	27,052	418	18,321	379	17,101	284	13,320	326	16,734	444	18,716	500	19,802	585	21,096	603	21,368	595	23,497	463	18,843	474	16,838	436	15,892	377	15,135	
For Coal, Slate, Shale, &c.	52	15,407	36	11,022	32	9,960	25	7,223	32	6,104	39	7,495	51	8,439	47	6,635	48	7,249	50	6,778	43	4,904	49	6,683	53	6,517	56	7,151	53	6,732	
For Gold Dredging Claims	40	830	36	746	40	830	57	999	77	1,987	128	3,879	167	3,987	162	3,190	155	3,183	22	2,619	117	2,491	108	1,850.5	110	1,759.5	106	2,041	75	1,176	
Mining Easements	77	475	55	409	73	504	77	434	48	316	79	475	94	578	107	629	112	634	112	663	97	630	86	617.25	85	616.25	83	529	83	511.25	
Machinery Sites	29	169	25	171	18	117	20	209	18	120	17	119																			
Licences to search for Coal or Oil	7	7,200	9	10,844	3	1,080	1	800	1	320	2	790	2	3,670	2	4,200	5	10,900	6	10,600	2	1,180	2	1,180							
Water-rights, Mineral and Gold	371	1552 & 1581 sluice-heads	486	2359 & 2053 sluice-heads	364	2095 & 1558 sluice-heads	388	2078 & 1546 sluice-heads	391	2,448 & 1,473 sluice-heads	400	1,905 & 1,650 sluice-heads	403	2,015 & 1,760 sluice-heads	447	2,092 & 1,835 sluice-heads	466	1,963 & 2,034 sluice-heads	467	2,243 & 2,049 sluice-heads	448	1,834 & 2,191 sluice-heads	388	2,172.75 & 1,574 sluice-heads	395	2,183 & 1,478 sluice-heads	386	2,065 & 1,428 sluice-heads	346	2,031.75 & 1,586 sluice-heads	

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

	Average for 1929.	Average for 1930.	Average for 1931.	Average for 1932.	Average for 1933.	Average for 1934.	Average for 1935.	Average for 1936.	Average for 1937.	Average for 1938.	Average for 1939.	Average for 1940.	Average for 1941.	Average for 1942.
Copper—Standard, spot: per ton .....	£ s. d. 75 19 7	£ s. d. 54 3 7	£ s. d. 38 7 9	£ s. d. 31 14 7	£ s. d. 32 11 4	£ s. d. 30 6 4	£ s. d. 31 18 1	£ s. d. 36 12 6	£ s. d. 60 5 9	£ s. d. 45 16 9	£ s. d. 49 17 7	£ s. d. 62 0 0	£ s. d. 62 0 0	£ s. d. 62 0 0
Lead—Soft Foreign: per ton .....	23 4 11	18 3 1	13 0 7	12 0 9	11 16 1	11 1 0	14 5 8	16 7 9	23 6 1	15 6 5	15 13 7	25 0 0	25 0 0	25 0 0
Spelter: per ton .....	24 15 1	16 16 9	12 9 0	13 13 10	15 14 11	13 15 6	14 0 0	14 6 11	22 6 8	14 1 7	14 14 0	25 15 0	25 15 0	25 15 0
Tin—Standard, spot: per ton .....	263 18 10	141 19 1	118 9 1	135 18 10	194 13 4	230 7 5	225 14 6	208 6 6	242 6 7	189 12 1	226 5 6	256 12 3	261 8 0	259 10 0
Silver—Standard, spot: per oz. ....	s. d. 2 0·57	s. d. 1 5·66	s. d. 1 2·593	s. d. 1 5·842	s. d. 1 6·144	s. d. 1 9·208	s. d. 1 9·951	s. d. 1 9·647	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. 1 11·439
Osmiridium: per oz. ....	£ s. d. 22 18 1	£ s. d. 17 0 9	£ s. d. 14 7 9	£ s. d. 11 11 0	£ s. d. 8 16 9	£ s. d. 9 11 2	£ s. d. 9 0 0	£ s. d. 12 10 0	£ 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
Wolfram: per ton .....	144 5 0	105 0 9	64 0 0	62 16 0	81 2 6	94 0 0	175 0 0	161 5 0	325 19 0	289 0 0	271 0 0	250 0 0	250 0 0	437 10 0
Nickel: per ton .....	171 0 0	170 0 0	183 15 0	234 7 6	235 0 0	225 0 0	200 0 0	178 4 0	145 0 0	182 10 0	185 0 0	...	...	...

## AID TO MINING.

The policy of assistance to mining was continued under the provisions of the Aid to Mining Act. Several grants were made for the development of mines, purchase of plants, provision of supplies of water, and for other purposes allied with mining. Sustenance allowance was granted to several organised parties for prospecting in approved localities, but no discoveries of economic moment resulted.

The total amount expended was £1627, affording employment to approximately 60 men. The total value of ore raised by assisted parties amounted to £8270. Repayments made against advances totalled £620.

An amount of £60 was expended on the cutting and conditioning of tracks to known and potential mineral areas, but there was reduced activity in prospecting in localities served by track facilities.

War-time conditions resulted in less encouragement being afforded lead and gold mining, but greater interest was directed to stepping-up the production of tin, wolfram, scheelite, and other minerals in short supply for the requirements of war. The advent of National Security (Minerals) Regulations, with provision for loans to ventures concerned with the production of strategic minerals, resulted in financial advances being made, under Commonwealth direction, to several projects directed to the production of tin.

**THE AID TO MINING ACT, 1927.**  
STATEMENT OF RECEIPTS AND PAYMENTS OF THE MINING TRUST FUND FOR  
YEAR ENDED 31ST DECEMBER, 1942.

RECEIPTS.			PAYMENTS.		
	£	s. d.		£	s. d.
Balance, 31st December, 1941	3,391	8 4	Sustenance allowance	194	0 0
Repayment of loans	262	11 4	Assistance	1,433	3 3
Hire drilling plant	63	0 0	Miscellaneous	4	17 3
Sale drilling diamonds	15	9 0			
Appropriation Act, 1941-42	2,000	0 0	Total payments	1,632	0 6
			Excess receipts over payments	4,100	8 2
	£5,732	8 8		£5,732	8 8

**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., 1942.	1st Jan., 1942, to 31st Dec., 1942.		Item.	March, 1935 (commence- ment) to 31st Dec., 1942.	1st Jan., 1942, to 31st Dec., 1942.	
	£	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	22,770	18 6	....
	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	6,476	8 8	60 0 0
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	41,513	2 10	60 0 0
Advances	5,829	9 9	357 7 10	Excess receipts over payments	2,111	5 7	2,111 5 7
Plants and operation thereof	11	18 8	....				
Metallurgical investigations	0	7 11	....				
Staff	0	10 10	....				
Balance brought forward period ended 31st December, 1941			1,813 17 9				
	£43,624	8 5	£2,171 5 7		£43,624	8 5	£2,171 5 7

## GOLD MINING ENCOURAGEMENT ACT, 1940.

(Commonwealth Act, No. 38 of 1940.)

## RECEIPTS AND PAYMENTS STATEMENT OF THE GOLD MINING ENCOURAGEMENT (COMMONWEALTH) DEPOSIT ACCOUNT FOR THE YEAR ENDED 31ST DECEMBER, 1942.

RECEIPTS.			PAYMENTS.		
	£	s. d.		£	s. d.
Balance brought forward, 31st December, 1941	1,500	0 0	Advances		
Repayments	63	12 8	Excess receipts over payments	1,563	12 8
Interest					
	£1,563	12 8		£1,563	12 8

## STATEMENT OF LOANS UNDER THE AID TO MINING ACT, 1927.

EXPENDITURE.						REPAYMENTS.							
Year.	Federal Funds.		The Mining Trust Fund and Other Funds.		Total.		Year.	Federal Funds.		The Mining Trust Fund and Other Funds.		Total.	
	£	s. d.	£	s. d.	£	s. d.		£	s. d.	£	s. d.	£	s. d.
1935	8,398	11 4	2,298	14 8	10,697	6 0	1935	300	4 9	87	10 0	387	14 9
1936	10,462	3 7	2,807	12 10	13,269	16 5	1936	1,286	12 5	1,078	5 11	2,364	18 4
1937	3,902	17 7	1,983	9 6	5,886	7 1	1937	1,244	15 5	2,246	13 9	3,491	9 2
1938	3,337	2 7	1,937	1 0	5,274	3 7	1938	3,796	4 7	422	15 3	4,218	19 10
1939	658	13 10	2,721	11 1	3,380	4 11	1939	716	19 2	390	4 0	1,107	3 2
1940	866	3 5	4,188	5 4	4,984	8 9	1940	599	6 2	944	3 9	1,543	9 11
1941	2 17	3	1,019	15 3	1,022	12 6	1941	240	7 11	684	3 8	924	11 7
1942			1,433	3 3	1,433	3 3	1942	357	7 10	262	11 4	619	19 2
Total	£27,628	9 7	£18,319	12 11	£45,948	2 6	Total	£8,541	18 3	£6,116	7 8	£14,658	5 11

## DRILLING.

Departmental drilling plants were in constant operation, partly on hire to holders of mining tenements and partly in drilling areas reserved against occupation under the provisions of the Mining Act. The total expenditure on all fields was £4676, and £281 was repaid under drilling agreements.

Drilling continued to be directed to prospecting the extent and value of the deep tin-bearing lead north of the Scotia workings at Gladstone. In defining the course and nature of the lead, results have been variable, but continuance of the drilling has been warranted to demonstrate if there is a sufficient yardage of average low-grade drifts to merit large-scale working.

One plant was employed, under hire agreement, in boring auriferous alluvials at Seabrook and New River. Bore values were not encouraging and no productive development resulted.

Drilling was continued on copper prospects in the locality of the Orieco Mine at Upper Scamander. Calculated ore ranges were penetrated, and, although copper sulphides were disclosed on the alignment of surveyed channellings, results were not encouraging and pending further determinations upon the merits of expenditure on drilling in this mineral area, the plant was transferred to Weldborough, where a boring campaign was commenced to test the persistence, width, and value of a tin-copper lode.

At the Tasmania Gold Mine, No. 3 bore was deepened to 1566 feet, but failed to penetrate the lode channelling and drilling was discontinued.

## DETAILS OF EXPENDITURE ON DRILLING DURING THE YEAR ENDED 31st DECEMBER, 1942.

Plant.	Location.	Amount.
		£ s. d.
Diamond Drill	Beaconsfield	1,509 3 8
Diamond Drill, No. 3	Upper Scamander	807 16 5
Diamond Drill, No. 3	Weldborough	207 16 2
Calyx and Surge Drills	Gladstone	1,670 11 4
Calyx Drill	Seabrook Creek (agreement)	142 13 7
Calyx Drill	New River (agreement)	135 4 0
Hand Plant	Dorset Flats (agreement)	202 9 1
Total		£4,675 14 3

(During the year a refund of £281 3s. 3d. was obtained from drilling carried out by agreement.)

## DRILLING RESULTS.

## SULLIVAN "B" DIAMOND DRILL.

This plant was employed at the Tasmania Gold Mine, Beaconsfield, and No. 3 bore was deepened to 1566 feet. The lode was not penetrated and drilling was discontinued.

## CANADIAN LONGYEAR JUNIOR STRAITLINE DIAMOND DRILL.

This plant was employed in drilling copper prospects in the vicinity of the Orieco Mine at Upper Scamander. Two holes, aggregating 863 feet of drilling, were completed, but results were not encouraging, and the plant

was transferred to Weldborough, where a boring campaign was commenced to test the persistence, width, and value of the "F-B" tin-copper lode. An aggregate drilling depth of 256 feet was completed at the close of the year.

## CALYX AND SURGE DRILLS.

The Calyx plant was employed for a period, under hire agreement, in boring auriferous alluvials at Seabrook and New River. Five holes, aggregating 142 feet, were bored at Seabrook and six holes, aggregating 105 feet, were bored at New River. Values were not encouraging and no productive development resulted.

Exclusive of the foregoing period of drilling, both plants were engaged in testing the extent and value of the deep tin-bearing lead north of the Scotia workings at

Gladstone. The number of holes drilled was 91, and the aggregate depth of bores was 8489 feet. The following tabulation indicates the tin content of the lead as traced by the bores:—

No. of Bore.	Depth to Bedrock.		Average Values. Oz. per c. yd. of 70% Conc.	Best Values		Oz. per c. yd. of 70% Conc.	
	ft.	in.		ft.	in.		
19R	106	3	3.25	95	4-102	8	37.2
11H	104	0	10.95	95	4-102	8	146.0
1z	104	0	1.04	95	4-102	8	8.08
4z	122	2	6.58	117	4-122	2	184.0
9z	117	0	5.12	110	0-117	0	85.54
15z	125	0	11.9	124	0-125	0	365.0
16z	102	6	0.89	95	4-102	6	12.75
18z	117	4	4.83	110	0-117	4	61.5
19z	104	0	0.58	95	4-102	8	7.2
20z	80	0	1.61	44	0-51	4	17.6
21z	120	10	2.56	117	4-120	10	72.6
22z	143	6	27.0	139	4-143	6	830.0
19T	119	4	1.67	113	4-119	4	20.2
20T	124	8	3.1	113	4-124	8	31.2
21T	126	4	7.65	124	8-126	0	366.0
24T	121	4	19.6	113	4-121	4	272.0
2w	55	0	7.78	45	4-55	0	92.0
1x	116	0	2.93	113	4-116	0	128.0
9x	68	0	4.85	56	8-68	0	29.1
17x	153	0	5.06	147	4-153	0	136.6
26x	98	0	0.51	90	8-98	0	7.5
27x	98	0	4.85	90	8-98	0	65.0
28x	106	0	7.52	102	0-106	0	190.9
29x	106	6	5.49	102	0-106	6	108.0
30x	108	0	17.6	102	0-108	0	312.0
31x	110	0	6.7	102	0-110	0	92.0
34x	118	0	1.25	113	4-118	0	27.8
37x	102	6	3.07	102	0-102	6	430.0
38x	101	0	3.41	90	8-101	0	33.4
39x	101	0	4.76	90	8-101	0	46.5
41x	109	0	10.38	102	0-109	0	155.0
42x	110	0	2.25	90	8-110	0	26.5

governing the health and safety of persons employed in the mines, quarries, and works.

**MINES DRAFTING BRANCH.**

The number of working plans in use and which are kept up to date is 224.

Instructions issued to surveyors	81
Diagrams received from surveyors	49
Diagrams drawn on leases	154
Consolidated and other diagrams drawn	14
Lithographs entered to date	84
Various tracings prepared	84
Tracings for Launceston	63
Manuscripts entered to date	3
New manuscript plans drawn	—
Meteorological colour work, rain map	—
Underground surveys examined	31
Geological plans compiled and tracings made	—

**STAFF.**

Dr. D. E. Thomas was appointed to the position of Government Geologist as from the 7th September, 1942.

Mr. H. G. W. Keid, M.Sc., was appointed to the position of Field Geologist as from the 13th July, 1942.

Mr. H. Tylour was appointed to the position of Assistant Chief Inspector of Mines and Explosives on the 6th July, 1942.

Mr. T. Platt, Inspector of Mines, resigned on the 28th November, 1942, to accept an appointment as Chief Inspector of Coal Mines in Queensland.

**DEPARTMENTAL ACTIVITIES.**

Establishment of services to create an important addition to technical functions in mineral research and ore dressing was retarded by staffing disabilities and difficulties in obtaining a complete set-up of equipment under war-time conditions. Several units for milling, sizing, jigging, and concentrating, by tabling and flotation, were delivered and temporarily installed. Useful services were rendered and the value of mineral research to the development of the industry has been demonstrated.

The capacity of the State to respond to demands for an increased production of strategic minerals was the subject of several examinations by technical officers and useful information continued to be assembled.

Changes in the inspectorial staff and difficulties in obtaining suitably trained officers, under war conditions, affected the regularity of inspection services, but the available staff exercised every endeavour to maintain surveillance of conditions

**APPRECIATION OF SERVICES.**

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

**APPENDICES.**

The following reports are appended:—

- Geological Survey.
- Chief Chemist and Metallurgist.
- Acting Chief Inspector of Mines.
- Acting 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.

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APPENDIX I.

REPORT OF THE GEOLOGICAL SURVEY FOR 1942.

The Government Geologist (Dr. D. E. Thomas) reports:—

Staff.

Two additions were made to the staff. Mr. H. G. W. Keid, M.Sc., Field Geologist, commenced duties on the 13th July, 1942, and Mr. D. E. Thomas, D.Sc., Government Geologist, on the 7th October, 1942.

Field Work.

The following field investigations were made by me in connection with mineral deposits, mines, and other matters:—

- 1. Examination for water-supply at property of Mr. J. Park at Sorell.
- 2. Investigation of the Adamsfield osmiridium deposits.
- 3. Investigation of the Blue Tier tin deposits.

In connection with the above, plans were prepared and the following reports were written:—

- 1. Water-supply on property of Mr. J. Park, Sorell.
- 2. Osmiridium mining at Adamsfield.

Mr. Q. J. Henderson, Field Geologist, carried out the following investigations:—

- 1. Frequent visits to Beaconsfield, in connection with diamond drilling at the old Tasmania Gold Mine.
- 2. Geological examination of the proposed site for construction of safe deposit for vital Government records.
- 3. Geological examination of proposed dam-site at Kangaroo Creek for Cambridge water-supply.
- 4. Frequent visits to Upper Scamander in connection with diamond drilling at the North and South Orieco prospects, and prospecting at the Orieco Copper Mine.
- 5. Visits to Gladstone in connection with the current drilling campaign.
- 6. Trial levelling at the New Moorina Tin Mine for the purpose of locating a gravity out-fall.
- 7. Sampling at the old City of Melbourne Gold Mine at Mathinna, in connection with an application for assistance.
- 8. Inspection of the Dairy Plains oil-shale deposit.
- 9. Geological survey of the Campbell Town bauxite deposits in association with the Extension Officer.
- 10. Accompanying the Director of Mines on an inspection of an alleged occurrence of bauxite at Anderson's Creek.
- 11. Survey of a drilling campaign in connection with the Seabrook-Doctor's Rocks gold prospects.
- 12. Geological investigation of the Mt. Stronach molybdenite deposits.
- 13. Accompanying the Commonwealth Minerals Committee during its visit to Tasmania to investigate the Storey's Creek and Aberfoyle Tin and Wolf-ram Mines, the Campbell Town bauxite, and the old Tasmania Mine's tailings and slimes.
- 14. Visit to Waratah in connection with a joint investigation of the productive possibilities of the Mount Bischoff Tin Mine.
- 15. Examination and survey of the proposed new location of magazine at Barossa-rd.

- 16. Frequent visits to St. Helens in connection with trial surveys of the proposed high-level water scheme for the Bell Creek tin deposits.
- 17. Inspection of the sluicing plant at the Transit Mine to determine its suitability for transfer to a more productive location.
- 18. Several visits to Pet River dam-site in connection with the diamond drilling campaign.
- 19. Visit to King Island to assist in the geological survey of the King Island Scheelite Mine by the Commonwealth Mineral Resources Survey.
- 20. Conference in Launceston in connection with a joint report on the Mount Bischoff Tin Mine.
- 21. Visit to Butler's Gorge and Mount Arrowsmith in connection with sands for utilization in the concrete dam construction.
- 22. Visit to Port Cygnet for the purpose of collecting samples of the alkali felspar porphyrys.
- 23. Examination of the tin prospects at Clifford Creek, in the vicinity of the Priory.
- 24. Survey of the Lochaber Tin Mine, Gladstone, in connection with an application for assistance.
- 25. Visit to South Mount Cameron in connection with the examination and survey of the prospects of the Clifton Creek Tin Mine.
- 26. Visit to Blue Tier in connection with the proposed geological survey of the area by the Government Geologist.
- 27. Resumption of the geological survey of Mount Farrell silver-lead district, commenced last year.
- 28. Investigation of the copper deposits north of Mount Farrell, in the vicinity of the MacIntosh River.

In connection with the above and other examinations the following reports were prepared:—

- 1. Report on storage accommodation for deeds and valuable records.
- 2. Notes on the copper prospects north of Farrell.
- 3. Joint report on Mount Bischoff Tin Mining Company, Waratah.

In addition, numerous departmental reports and recommendations were made in connection with applications for assistance to mining in various parts of the State.

Mr. H. G. W. Keid, M.Sc., Field Geologist, carried out the following investigations:—

- 1. Investigation of the Mt. Bischoff and Mt. Bischoff Extended Mines.
- 2. Examination of the Kynance Mine and two other properties in the Zeehan district.

Plans and reports on the above were also prepared.

Routine and Other Duties.

During the year the usual routine duties of answering correspondence and interviewing visitors were carried out. These duties were concerned mainly with furnishing information about the mineral deposits of the State, and identifying rocks, minerals, and fossils. Other duties included the weighing and certifying to parcels of osmiridium sent overseas for sale, preparation of rock sections, and the preparation of representative collections for schools.

I desire to record my appreciation of the excellent work carried out by the Geological Survey Staff and the capable and energetic manner in which such work was performed.

## APPENDIX II.

## REPORT OF THE CHIEF CHEMIST AND METALLURGIST.

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

*Determinations and Analyses.*

Determinations were made for gold, silver, tin, lead, aluminium, arsenic, antimony, cerium, beryllium, barium, bismuth, boron, calcium, chlorine, chromium, osmiridium, phosphorus, thorium, tungsten, titanium, zinc, and zirconium.

Analyses were made of ores, minerals, clays rocks, coal, shale, bauxite, water, &c.

The number of determinations approximated 3000.

*Ore Dressing Investigations.*

## Tin.

*Renison Bell Ores and Mill Samples.*—Research was undertaken to quantitatively determine the size distribution of the contained cassiterite. One object of the research was to obtain data from which it would be possible to indicate the limitations of recovery by gravity

concentration of the cassiterite. Quantitative sizing necessitates treatment of comparatively large samples, with products containing one per cent or less of cassiterite. A suitable method was developed for this purpose. The method used depends on the fact that cassiterite is resistant to attack by most mineral acids, whereas sulphide and non-sulphide gangue minerals can be decomposed. The residual cassiterite from acid treatments was then screened on 200-mesh and the minus 200-mesh fraction was sized into six fractions by elutriation. Preliminary tests of the method showed that, with appropriate care in operation, mechanical and solution losses of cassiterite were negligible. Tin present as stannite is not accounted for but, in the samples tested, copper was determined to indicate the presence of stannite. Neglecting the presence of other copper bearing minerals, the tin content of the samples, present as stannite, would have an upper limit of 0.08 per cent.

Preliminary examinations showed that the ore samples contained only minor quantities of cassiterite larger than a 200-mesh screen aperture. The samples were stage-crushed to minus 10-mesh to facilitate chemical treatment.

Table Showing Size-distribution of Cassiterite.

Sample.	Sample Locality.	Tin Distribution — Percentage Cumulative.						
		Fraction.						
		+ 200 mesh	E.F.1.	E.F.2.	E.F.3.	E.F.4.	E.F.5.	E.F.6.
Ore Samples	Reid's Face .....	3.0	24.6	41.4	59.0	77.6	92.1	100
	Black Face .....	7.8	24.7	48.7	60.7	77.3	90.1	100
	Cable Face .....	5.1	51.1	71.0	80.4	92.4	96.7	100
	Battery Face .....	19.7	41.8	57.1	69.4	80.8	90.6	100
Mill Samples	Sulphide Flotation Reject Heads (Batterypan product) .....	11.7	34.1	68.5	81.9	88.1	90.5	100
	Mill Cassiterite Concentrate .....	8.4	33.7	59.7	76.6	88.1	95.5	100
	*Flotation Cassiterite Concentrate .....	2.2	40.6	74.5	94.4	99.2	99.8	100
	.....	0.1	1.5	15.5	53.9	92.1	96.5	100

\* Experimentally produced from Mill Table Tailings by Strake, Flotation, and Kieve concentrations.

The determined mean micron-diameters of cassiterite in elutriated fractions are:—"E.F.1" 61 with a range from 55 to 65, "E.F.2" 38, "E.F.3" 28, "E.F.4" 20, "E.F.5" 10, and "E.F.6" minus 10.

Cassiterite, occurring as composite grains, was determined in the sulphide reject and head samples, and amounted to 17.5 and 20.7 per cent, respectively, of the total cassiterite, the majority being smaller than 12 microns.

*Mount Bischoff—Pyritic Table Concentrates from North Valley Mill.*—Present mill treatment of these concentrates, containing approximately three per cent of tin, consists essentially of calcination in Edwards Roasters and table concentration of the calcine to a finished concentrate. Investigations were undertaken to obtain information as to an alternative treatment, consisting of classification; reduction of the plus 80-mesh portion of the concentrate to minus 80-mesh size by closed circuit ball mill grinding; rejection by flotation of the sulphides consisting mainly of pyrite, pyrrhotite, and arsenopyrite; and gravity concentration of the flotation tailings to a finished concentrate. Flotation of the sulphides resulted in rejections of 82 to 89.5 per cent of the sample, containing 2.5 to 7 per cent of the total tin, and 94.4 to 98.9 per cent of the sulphur. The flotation tailings contained up to 30 per cent of tin. Gravity concentration of the flotation tailings to a concentrate assaying 70.3 per cent of tin and 0.34 per cent of sulphur resulted in an overall recovery of 88.16 per cent of the tin.

*Mount Bischoff—General Survey.*—In collaboration with departmental officers, investigations were undertaken and a report was prepared upon mining, milling, power, and transport problems. The report contains details of the existing milling and treatment methods; sampling of all

concentration plants, covering analysis and sizing of mill products, concentration ratios and recoveries; ore treatment with reference to innovations and control; alternative methods of treatment including improvements to existing treatment methods and the application of flotation to rejection of sulphides, as an alternative to the existing practice of calcination; transport; and power supply.

## Scheelite.

*King Island Scheelite N.L.*—Ore from this mine was examined to ascertain the quantity of "free" scheelite in the sample after reduction, by rolls, to minus 5-mesh screen size. The sample, after reduction, was sized to plus and minus 60-mesh screen size and the plus 60-mesh was concentrated in a jig. The "free" scheelite in the jig concentrate was isolated from possible composite grains with garnet by magnetic separation and the tungstic acid determined. The recovery of "free" scheelite in the minus 8 plus 60 fraction of the sample amounted to 26.7 per cent. A previous investigation (No. 1379/38) indicated that scheelite in this ore was freed at 60-mesh size or somewhat coarser. Consequently, as the minus 60-mesh portion of the sample contained 28.4 per cent of the scheelite it is indicated that at least 55.1 per cent of the total scheelite in the minus 5-mesh sample was present as "free" grains.

## Wolfram.

*Interview River Wolfram Ore.*—A sample of ore was received from Interview River and submitted to concentration tests. Examination of the sample showed that the majority of the wolfram occurred as coarse masses.

Minor quantities of scheelite, arsenopyrite, and pyrite were observed. As simplicity of treatment was preferred to optimum recovery the test work was limited to jig concentration. The sample was stage-crushed to pass an 8-mesh screen and concentrated in a Denver Jig. Concentration resulted in a recovery of 83.5 per cent of the tungstic acid in a concentrate assaying 75 per cent WO<sub>3</sub> and 0.35 per cent arsenic.

Gold.

Beaconsfield—Battery Sands from West Arm.—Flotation tests were required on the finer portion only of the sands to assess the possibilities of treatment by hydraulic classification, thickening, and flotation. The sample was classified to plus and minus approximately 60-mesh screen size and the classifier overflow was submitted to flotation tests. The overflow represented 52 per cent by weight of the sample and assayed 2.68 dwt. of gold and 0.23 per cent of copper. Flotation resulted in recoveries of 54.6 and 30.2 per cent of the gold and copper respectively in a concentrate assaying 37.7 dwt. of gold and 1.79 per cent of copper. Microscopical examination of the flotation tailings showed that the sulphides, present, were oxidised. A previous investigation showed that the gold

was intimately associated with the sulphides and, after grinding to expose fresh surfaces, flotation recovery of the gold inclined to 76 per cent.

Cyanidation Tests.—Cyanidation tests were carried out on samples of gold-sands from Mathinna and Lefroy with useful results.

Carbonaceous Slate.

A sample of carbonaceous slate was received for examination and extraction of the carbonaceous content by flotation practices. It was suspected that the black mineral in the slate was graphite but examination indicated it to be carbonaceous matter. Flotation tests showed that the black mineral could be concentrated by this method.

Equipment.

New ore dressing equipment installed during the year includes Fagergren and Fahrenwald Flotation Machines, Infrasizer and Superpanner, Denver Laboratory Mineral Jig, Wilfley Table, Denver Ball, Rod, Tube Mill, and Batch Ball Mill and Ore Feeder.

In conclusion, I wish to place on record my appreciation of the services rendered by the staff.

APPENDIX III.

REPORT OF THE ACTING CHIEF INSPECTOR OF MINES.

The Acting Chief Inspector of Mines (Mr. J. O. Hudson) reports:—

Mines and Works Regulation Act.

The average number of persons employed in mining, metallurgical, and quarrying operations was 5572, compared with 5856 for the previous year.

The appended tables relate to—

- (1) Fatalities and non-fatal casualties at mines, works, and quarries, which involved absence from work for more than 14 days.
- (2) The average number of persons employed, and the rate per 1000 persons employed of fatal and non-fatal injuries, in the State and in each mineral division.

Accidents.

The total number of accidents registered under the provisions of Section 23 of the Act was 89, as against 85 for the previous year.

The 89 accidents resulted in injury to 90 persons.

There were fourteen more accidents in the Northern and Southern divisions, eight more in the North-Western Division, five more in the Eastern Division, seventeen less in the Western Division, and four less in the North-Eastern Division. Three accidents were attended with fatal injuries to four persons as compared with four accidents involving fatal injuries to five persons for the previous year.

One fatal accident occurred in the Southern Division and three in the Western Division.

Of the fatal accidents, two occurred on the surface and involved the death of three persons whilst the third accident occurred in underground workings and resulted in the death of one person.

One fatality was due to a person falling from a ramp which was protected by two hand-rails. It is assumed that he had a seizure and slipped between the hand-rails, falling a distance of thirty-six feet on to a concrete floor.

Two men were employed in an open cut, charging pops at the foot of a rill. A fall of ground from the face, which was fifty feet in height, buried both men.

The underground fatality occurred in a stope. The miner was barring down after blasting. A fall of ground, from the roof, struck him, causing injury which proved fatal four days after the occurrence.

The non-fatal accidents totalled 86 and caused injury to 86 persons, compared with 81 accidents causing injury to 85 persons for the previous year.

The rate per 1000 persons employed, killed, and injured was 16.153, compared with 15.368 for the previous year.

The rate per 1000 persons employed, fatally injured, was 0.718, compared with 0.853 for the year 1942.

The rate per 1000 incapacitated for more than 14 days was 15.434, compared with 14.575 for the previous year.

Of the non-fatal accidents, totalling 86, 18 occurred in connection with surface operations, 28 underground, seven in connection with coal mining, and 32 at metallurgical and other works.

Twenty-three accidents resulted in oschia fractures or permanent injury.

Prosecutions.

There were eight prosecutions for breaches of the Act and rules. Two cases were dismissed, one was treated as a first offence, and in five cases convictions were recorded and fines imposed. Three of the cases were for disorderly conduct, one was for failing to ascertain that a tamping stick was safe for use, one concerned failure to use appliances for the prevention of dust, and three were for firing a blast likely to injure persons.

## APPENDIX IV.

## REPORT OF THE ACTING CHIEF INSPECTOR OF EXPLOSIVES.

The Acting Chief Inspector of Explosives (Mr. J. O. Hudson) reports:—

*The Explosives Act, 1916.*

The imports of explosives were as follows:—

	Lbs.
Monobel .....	37,150
Gelignite .....	830,900
Ligdyn .....	44,300
Gelignite dynamite .....	73,800
Blasting powder .....	10,300
Sporting powder .....	.....
Permitted explosives .....	1,250
	Number.
Detonators .....	1,050,200

Attention was directed to ensure that the compounds were in good chemical and physical condition. During the year some explosives created grave concern owing to hardening when stored. This condition was investigated and it was found that it was due to one of the components used being impure and not of the usual standard. The difficulty was overcome in the factory and later shipments were found satisfactory. Owing to the difficulty in obtaining a necessary ingredient some explosives of the non-polar type were imported during the summer months. It

was pointed out that non polar explosives were not suitable for winter conditions in Tasmania. This explosive was confined to one mine and provision was made to air-condition a magazine to ensure thawing, which proved satisfactory.

One accident was recorded as having occurred during the use of explosives. In this case, a surface employee "blistered" a large rock in a quarry but failed to take shelter and was struck on the forehead by a small stone.

*The Inflammable Liquids Act, 1929.*

The installation of bulk overhead tanks at Launceston was completed. The absence of untoward incidents in connection with the storage and handling of inflammable liquids again reflected creditably upon the care exercised in the control of safety and fire hazards.

An acetylene explosion is of interest. A youth was removing the top of an acetylene gas generator. He was smoking a cigarette which caused an explosion. The youth was severely burned on the face, neck, arms, and hands.

*Prosecutions.*

Legal proceedings were instituted in one case relating to the illegal storage of 44-gallon drums of petrol. A fine of £5 was imposed, with 19s. 6d. costs.

*COMPARATIVE Table of Statistics of Accidents in and about the Mines of Tasmania from 1st July, 1892, to 31st December, 1942.*

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	8·8001	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	10·794
" 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

\* Mount Lyell disaster.

TABLE showing Rate per Thousand Killed and Injured in different Divisions for the Year 1942.

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 .....	2085	19	1	18	19	9.112	.479	8.633
North-Eastern .....	319	1	...	1	1	3.134	...	3.134
Eastern .....	528	7	...	7	7	13.257	...	13.257
North-Western .....	440	14	...	14	14	31.818	...	31.818
Western .....	2200	48	3	46	49	22.272	1.363	20.909
Total .....	5572	89	4	86	90	16.152	0.718	15.434

ANALYSIS of Statistics of Accidents for Western Division.

Division.	Number of Miners Employed.	Number of Accidents.	Number of Persons		Total Number Killed & Injured.	Average per 1000 Killed and Injured.	Average per 1000.	
			Killed.	Injured.			Killed.	Injured.
Mount Lyell .....	1595	32	2	31	33	20.689	1.254	19.435
Zeehan, &c. ....	605	16	1	15	16	26.446	1.653	24.793
Total .....	2200	48	3	46	49	22.272	1.363	20.909

## APPENDIX V.

### REPORTS OF INSPECTORS OF MINES.

#### Inspector H. A. Vaudeau, Upper Burnie, reports:—

**Employment.**—The average number of men employed in mining, quarrying, and metallurgical activities was 795, as compared with 864 for the previous year. Operations afforded employment to 196 men in portion of the north-western mineral division and 599 men in the western division exclusive of Mount Lyell. Shortages of labour for mining continued to be acute.

Diversion of labour to war services and transfers to other industrial enterprises were more responsible for the reduction in employment than any factor affecting an exhaustion of mineral resources.

**Accidents.**—Twenty-four accidents were registered under the provisions of the Mines and Works Regulation Act. Twelve accidents occurred on the surface and a like number was associated with underground operations. There was one fatality and this occurred in underground workings. An exercise of merited care would have averted at least half of the number of accidents recorded.

The fatal accident occurred in an underground stope, as the result of a fall of ground. A miner had carried out blasting operations and was engaged barring down when a quantity of ground fell from the roof of the stope, struck him and inflicted injuries to which he succumbed. Blasting was carried out in directions affecting two ways of access to the stope and it was necessary to travel under roof affected by the blasting. In this case, it was affirmed that deceased had barred down portion of the roof and had advanced and was continuing with the work when a quantity of roof fell, behind him, and was followed by a further fall of roof, which inflicted the fatal injuries. An official declared that necessary instructions had been given to miners, on more than one occasion, not to fire in both directions, at the one time, and he was unaware of a departure from these instructions. At the inquest, the jury returned a verdict of accidental death.

When blistering a large piece of ore in a quarry, an employee did not proceed to the shelter shed but travelled a distance which he considered to be a safe distance from the scene of blasting. Failure to proceed to the shelter shed resulted in the employee being struck by a "scat" from the explosion. He sustained concussion and a laceration of the forehead.

A person was spalling in a quarry when a fragment of rock struck him in the left eye, inflicting injuries which caused eye blindness.

An employee was pitching a hole, with a telescope machine, when a fragment flew from the collar of the hole and struck him in the right eye, causing an injury which resulted in incapacitation for three weeks.

A person sustained abrasions to the right leg, as the result of a piece of timber rolling on him when he was engaged loading a truck from a timber-stack.

Whilst engaged moving a lump of mullock, an employee sustained an injury to his right thumb, as the result of the mullock jamming it against the leg of a set of timber.

An employee, who sustained injuries to the third and fourth fingers, was building a bulk when he struck the roof of the working place and caused a piece of ore to fall on his hand.

An employee sustained severe injuries to the left hand, as the result of the bucket of a mechanical shovel striking him thereon whilst he was altering the position of a lump of ore on a truck.

A timberman was engaged standing the leg of a gallery set when, as he stooped to pick up a staff-stick, the leg fell out of position, knocked him down, and struck him on the right ankle, inflicting injuries to both the ankle and foot.

An employee was lifting a log when he tore his hand on a projecting nail.

A spaller was engaged breaking a large lump of ore when it rolled on and injured his right foot.

A trucker was filling a truck at an ore pass when a lump of ore rolled from the truck on to his leg, inflicting abrasions. A second trucker was moving a piece of ore on a full truck when some ore rolled out of a chute and jammed his left first finger against the edge of the truck.

A carpenter was trimming the floor of a building in course of erection when the tomahawk he was using glanced off the timber, struck him on the left leg, and inflicted a deep wound.

A miner sustained right hernia as the result of slipping when carrying a rock-drilling machine up the rill of an underground stope.

An aerial attendant was filling a bucket from an ore bin when the chute door jammed and allowed an overflow of ore, which struck him on the right foot and inflicted a fracture thereof.

A labourer sustained a puncture wound and fractured bone in the left foot as the result of a pick he was using to clean out a drain glancing from a rail and striking him.

A person fractured a rib whilst up-ending a 44-gallon drum of power kerosene.

An underground stope was being filled with mullock when lagging gave way and displaced some drive sets, thereby allowing the mullock to completely block the drive. Five men were trapped in the drive, on the opposite side of the run of mullock, but diligent efforts resulted in the drive being sufficiently cleared, 14 hours later, to enable them to be released without any injuries having been sustained. From investigations it was concluded that some of the timber had been damaged by blasting and that such timber should have been replaced or double-decked before mullock was run into the stope. An assurance was received that this procedure would be observed in all future cases.

**Safety.**—Difficulty was experienced in obtaining the maintenance of safe batters at silica and clay quarries. Directions were issued for a correction of the condition of defective working, and it is anticipated that this action will produce the desired results.

Continued vigilance has been necessary at an open-cut workings to ensure that the faces are battered to a safe angle of repose.

A system of flattened stoping-rills had been allowed to deteriorate over a period of time but exception has been taken to the developed condition and it is anticipated that this will produce a desired and necessitous improvement.

Every encouragement has been extended to officials and employees in the matter of keeping all affected ground barred down, but cases have continued to arise where it has been necessary to have conditions rectified, during the course of inspections, to reduce the incidence of serious accidents.

Frequent directions have been necessary in matters affecting the extension of bulking and other systems of timbering, the improvement of ladderways, and the controlling of details of a miscellaneous nature to ensure the production and maintenance of greater degrees of safety in working conditions.

**Ventilation.**—The production and maintenance of adequate ventilation has received close attention. There is still room for improvement at one large mine, where stoping is advanced on the rise of the rill to mullock passes, and the stoped area then mullocked close to the rill. This system of stoping and filling results in a period of inadequate and stagnant ventilation and the provision of auxiliary means has been requested for improving the conditions during the unbalanced periods.

**Health and Sanitation.**—Much attention was directed to matters affecting health and sanitation. Complaints were directed against conditions obtaining at a calcining plant, and a general conference was arranged between the management and representatives of the employees to discuss conditions and measures for the elimination of dust and fume nuisances. Improvements were arranged and the management expressed a desire to reduce the incidence of dust to a minimum.

Malpractices by persons using sanitary conveniences rendered it difficult to obtain the services of attendants to maintain the conveniences in a desired state of cleanliness. Improvements were obtained in some instances and it is hoped to obtain improved conditions at other places, where the facilities are below an equitable standard.

Changing and bathing accommodation would be welcome at one mine and works, but a condition of isolation in regard to an adequate water supply has to be overcome to reconcile conditions of location and use. Improved arrangements at one mine have eliminated discontent associated with the facilities provided for changing and bathing.

Equipment provided for rendering first-aid in case of accident was reasonably satisfactory and only in one case was a complaint made in regard to the unsuitability of portion of the existing equipment. The defect was remedied.

**Explosives.**—Due regard was given to an observance of the requirements of the Explosives Act and that portion of the Mines and Works Regulation Act relating to explosives. No instance of defective explosives was en-

countered and no complaint was received regarding the quality of the nitro compounds, detonators, and the fuse in use. Unloading and despatch of explosives at the port of Burnie was attended to as occasion demanded.

**Inflammable Liquids.**—Some irregularities were encountered in the storage and handling of inflammable liquids but these were corrected as required. Endeavours to correct irregular practices without recourse to legal proceedings were attended with good results.

**Occupational Diseases.**—A considerable amount of work was involved in attending to matters for the purpose of the Workers' (Occupational Diseases) Relief Fund Act. Clean certificates were granted to approximately 117 persons.

Four persons made application to be examined for industrial afflictions. One person had been mining for 30 years and was declared to be free from disease. Three cases were positive, the stages of affection ranging from 25 to 65 per cent. Two of these had been mining for more than 40 years and one had been employed in the industry for a period exceeding 20 years.

**General.**—I was on long-service furlough for portion of the year, but desire to record my appreciation of the assistance rendered me by officials and employees in the execution of duties directed to obtaining the best possible conditions in an industry allied with many risks.

#### *Mineral Resources, Reports, Examinations, and Prospects.*

Many examinations were made in connection with the mineral resources and it is hoped that the result of these examinations will be of benefit to the industry. Expressions of appreciation have been recorded in connection with services that have been rendered.

Several reports were furnished upon applications for financial assistance under the provisions of the Aid to Mining Act. Developmental activities have been retarded by labour shortages, but useful work has been done with the labour available.

#### OPERATIONS AND PRODUCTION.

##### *Asbestos.*

Representatives of the Colonial Sugar Refining Company investigated the asbestos-bearing serpentines at the Five-Mile, and, after driving exploratory adits, the results were deemed of sufficient merit to proceed with the installation of separating units. This work was completed and early production of asbestos is expected.

An examination was made of a deposit of asbestos in the locality of the Razor Back Tin Mine at Dundas and there is a possibility of this deposit being opened up when labour becomes available.

##### *Cadmium.*

The recoverable quantity of cadmium, in ores produced by the Electrolytic Zinc Company of Australasia Limited from the Read-Rosebery Mines, was 41.39 tons, valued at £18,462 sterling.

##### *Clay.*

In addition to clay normally required for the manufacture of bricks, 1098 tons of white clay, valued at £1333, was won from a deposit at Hellyer for use at the Associated Pulp and Paper Mills at Burnie.

An appreciable amount of boring and testing has been carried out and the Transport Commission has provided a railway siding for the more convenient handling of products. Excavating plant is being obtained for overburden removal, the thickness of the overburden averaging from 4 to 5 feet. Plant has been installed at the works in Burnie to reduce the grit in the clay and a satisfactory reduction to 0.5 per cent is now possible.

Disability in obtaining plant and labour have retarded the progress that was anticipated.

##### *Copper.*

An output of 529.48 tons of copper, valued at £32,827.76 sterling, resulted from operations by the Electrolytic Zinc Company of Australasia Limited on copper sulphide sections of the ore bodies at the Read-Rosebery Mines.

A little prospecting was carried out on the area embracing the old Copper King Mine at Cuprona, but there is no record of any production.

*Gold.*

The recorded output of gold was 9941.854 fine oz., valued at £83,511.587 sterling. Of this quantity 9884.04 oz. was recovered from zinc-lead ores mined by the Electrolytic Zinc Company at the Read-Rosebery Mines.

There was a return of 12.24 oz., valued at £102.816, from operations by fossickers during periods of low tide along the coast at Doctor's Rocks.

Some boring was done on alluvials along Seabrook Creek, but only fine colours of gold were disclosed from depths of 4 to 19 feet. Those concerned considered that the bedrock had been struck and drilling was discontinued. One hole was sited in front of the sea coast near Doctor's Rocks, but boring was suspended at 50 feet, no values having been encountered. The opinion is expressed that the gold won along the sea coast from Somerset to Seabrook is being brought in by heavy seas from an alluvial occurrence now below sea level.

Operations by Geale and party were handicapped by shortage of labour and only a small quantity of gold resulted from alluvial activities.

A little gold was recovered by S. Patterson during the treatment of staniferous beach sands at Naracoopa on King Island.

The balance of the gold resulted from miscellaneous operations in the region of 19-mile Creek and Middleton Creek, mainly when mining for osmiridium.

*Graphite.*

There was no production of graphite from Pearson's workings at East Ulverstone.

Some work was carried out on an occurrence of carbonaceous slates adjacent to the workshops of the Emu Bay Railway Company at Burnie. The graphitic constituent was experimentally extracted by flotation, but the product was found to be of no commercial value.

*Iron.*

No iron ore was despatched from Sushames' property at Cuprona to the Australian Commonwealth Carbide Works at Electrona for the manufacture of ferro-silicon. Preparations were made for the formation of a road from the quarry to the main road and some clearing was done but road construction was not continued.

*Ferrico Proprietary Limited.*—Trenching and shafting were carried out on an occurrence of iron ore on Rutherford's property at Natone. Results were disappointing, but the opinion is expressed that there is a lot of good iron ore to be won in this locality, the best of the ore being underneath and adjacent to where the shafting and driving have been carried out. Some of the driving has been under "flat floors" of ore, the exposures of which occur on the surface. Testing work is being continued. It is considered that a greater depth penetration during this work would more advantageously test the occurrence of iron ore.

*Limestone.*

A quantity of 668 tons of limestone was broken and despatched from Lower Scotchtown to the Associated Pulp and Paper Mills at Burnie.

*Osmiridium.*

The recorded production of osmiridium was 24.48 oz., valued at £504.77 sterling. The output accrued from irregular operations by miscellaneous parties at the old diggings. Some of the alluvial ground is fairly deep and heavy in stone. The market price would have to be much higher to enable the "digger" to remuneratively work this ground.

*Scheelite.*

Opencutting and milling operations were actively pursued by King Island Scheelite No Liability at King Island, 31,870 tons of ore being broken and treated for a recovery of 215.332 tons of scheelite concentrate, valued at £71,353 sterling. An average number of 61 men was employed.

The power shovel was employed loading overburden into motor lorries, mainly on the 155 feet contour, and 66,154 cubic yards of ground were removed to the dump. Ore production was from the 90 feet, 120 feet, and 140 feet contours, handling and transport being mainly by tractor shovel and motor lorries. The central adit at the 90 feet contour was driven 175 feet in a westerly direction and at 120 feet a rise was lifted to the 120 feet contour. At 100 feet a crosscut was driven northerly 129 feet connecting with the northern adit. A considerable amount of boring was undertaken.

A geological and geophysical survey was undertaken by officers of the Commonwealth Mineral Resources Survey and this was followed by a diamond drilling campaign to determine volumes and grades of ore for the purpose of stepping-up the output of scheelite for the requirements of war. The proposal is to completely reconstruct quarrying and milling practices and thus substantially increase the throughput of ore.

Southerly from the King Island Scheelite Mine some 300 feet of boring was carried out, but results were disappointing.

*Silica.*

The Leven Silica Quarry was worked according to the demand for silica and the quantity exported to the mainland was 382 tons, valued at £405. Operations afforded employment for 3 to 4 men during actual quarrying periods.

*Silver-Lead.*

*Farrell Mining Company, Tullah.*—Crude ore mined and milled was 10,840 tons, resulting in a recovery of 2300 tons of concentrate, containing 207,050 oz. silver and 1799 tons of lead, valued at £66,715.25 sterling. The average number of men employed was 74.

The main south drive at No. 7 level was advanced 130 feet on the lode channel and is now out a distance of 330 feet from the main crosscut. The last 60 feet of the channel filling was not payable, but the remainder of the formation is showing a little ore on the hanging-wall over a width of six inches, and this development is being further explored.

The main south drive at No. 6 level was advanced 100 feet on the lode channel and is now out a distance of 300 feet from the main crosscut. The last 50 feet of lode formation was of poor grade and hanging-wall crosscuts revealed nothing of a payable nature.

At No. 5 level the main drive was extended northerly to the main crosscut and a rise was lifted to No. 4 level on the lode, which was barely payable.

At No. 4 level driving was continued in a southerly direction on a branch lode and developed 50 feet of payable milling ore. A rise was lifted to No. 3 level on payable ore.

An appreciable amount of foot-wall crosscutting was carried out at No. 1 level. The branch lode was cut and prospects are encouraging.

Stoping was pursued on the various levels, most of the production being from No. 2 level north and Nos. 6 and 7 levels south. Underground operations were handicapped by a shortage of skilled miners.

*Tin.*

The recorded output of metallic tin was 175.9 tons, valued at £45,651.9 sterling. Of this quantity 95.4 tons accrued from operations in the Western Division and 80.5 tons resulted from activities in that portion of the North-Western Division under my jurisdiction.

*The Mount Bischoff Tin Mining Company.*—There were 20,667 tons of crude ore crushed, 3890 tons of slimes retreated, and 4940 cubic yards of alluvial ground sluiced. These operations resulted in a recovery of 87.85 tons of concentrate from the crude ore, 15.82 tons of concentrate from the slimes, and 6.44 tons of tin oxide from the alluvial ground, making a total recovery of 110.1 tons of tin concentrate, containing 74.93 tons of metallic tin, valued at £19,445.

Mining was continued on the tributing system and operations afforded employment for 25 men underground and 62 on the surface.

*Underground Workings.*

*North Valley Lode.*—The completion of a rise from Nos. 5 to 4 levels was the only developmental work carried out on this lode. The stopes over Nos. 2, 4, and 5 levels supplied practically all the milling ore, but, owing to an inadequate supply of air for rock drilling machines and a shortage of skilled labour, sufficient ore could not be broken to keep the battery working at full capacity. Preparations were made to install a new compressor.

*Slaughter Face Lode.*—A small tonnage of good grade ore was won from this lode during the early part of the year but operations were discontinued owing to a breakdown of the air compressor.

*Surface Faces.*

*Gossan Face.*—A relatively large tonnage of crude ore was drawn from this old face, but the grade was below the average and operations were suspended towards the close of the year.

**Pig Flat Face.**—Operations were resumed at this face and 2056 tons of ore was produced and crushed. The average recoverable grade was assessed at 0.209 per cent tin. Mining and crushing charges were low and results showed a fair margin of profit above working expenses.

**White Face.**—Operations were continued at this face on a reduced scale. With the system of handling, the average grade was not payable and only the best of the ore could be worked with profitable results.

**Slaughter Face.**—Statements indicated that operations at this face were unprofitable with the exception of a small bunch of rich ore recently disclosed.

**North Valley Alluvial.**—Rebuilding of the boxes was completed and a new paddock of ground was opened up but values were irregular and operations were restricted by lack of manpower.

During the last 13 years the mine has been operating on a tributing basis and the management considered that, as a result of an alteration of legislation controlling the conditions of tributing, it would be impossible for the Company to continue operations without financial assistance. The Minerals Production Division of the Commonwealth Department of Supply and Shipping resumed the mine and property of the Company and it appears as though the old mine is to be given an opportunity to show that there is still a lot of ore available for mining if handled in a manner compatible with modern practices.

**Stanley's Tin Mine.**—A quantity of 41 tons of ore was mined, principally from pillars in the old workings of the Mount Bischoff Extended Tin Mine, and treated at the Mount Bischoff Company's Mill for a recovery of 1.55 tons of concentrate, containing 1.024 tons of tin, valued at £265.7.

**R. W. Pryde** acquired a lease at Tinstone Creek and with a mate sluiced 1550 cubic yards of ground for a recovery of 1.433 tons of tin oxide, containing 0.915 ton of metallic tin, valued at £237.44.

Treatment of tailings at Housego's Tin Mine on the Waratah River resulted in a recovery of 1.12 tons of concentrate, containing 0.743 ton of metallic tin, valued at £192.81.

At the **Big Dipper** on Wombat Flat, approximately 3240 cubic yards of ground were sluiced for a return of 1.6 tons of tin oxide, containing 1.05 tons of metallic tin, valued at £273.

**W. Betts** treated about 97 cubic yards of ground at Ritchie Creek and recovered 0.303 ton of concentrate, valued at £50.

**Renison Associated Tin Mines.**—Mining and milling were continued until the latter part of the year when production was suspended to enable faces to be developed to a safe working condition and to a stage to afford a better and more continuous supply of ore to the mill. The acute shortage of labour in the early part of the year was cited as a factor responsible for quantities of overburden not being systematically removed from the faces. An open-cut face was opened at the Dalcoath workings to augment the ore supply. To connect these workings with the Boulder-Renison Bell tramline it was necessary to erect an ore bin, provide a gravitation haulage of 10.5 chains, and lay an additional 5 chains of tramline to the open-cut face. The "Lead Lode" in the locality of the mill was developed to the extent of cutting an approach and driving on a lode channel for a distance of 140 feet. An adit was also driven under the Black Face. Developmental work will be extended as suitable labour becomes available. During the progress of developmental work alterations and additions were made to the milling plant. Ore mined and milled totalled 10,152 tons, and 81,822 tons of concentrates were recovered, containing 54.9 tons of metallic tin, valued at £14,235.9 sterling. An average of 37 men was employed.

**Tasmanian Amalgamated Tin Mines.**—An output of 48 tons of concentrate, containing 32.43 tons of metallic tin, valued at £8416.7, resulted from the mining and milling of 5768 tons of ore. A rise was lifted from the 200 feet level, known as Conder's Adit, to 50 feet in dense sulphides, when broken and wet ground was struck. No further progress could be made by rising until an adit was driven 96 feet to drain the country after which a rise was holed to the surface workings. In the latter half of the year the Inclined Adit was abandoned and it was necessary to pass the ore through the rise to Conder's Adit along which it was trucked to the mill hopper. The management indicated difficulties being experienced in meeting expenditure with a shortage of skilled labour, breakages in the mill, and developmental work necessary for production. There is a large known tonnage of sulphide ore, but this cannot be treated with the present concentrating mill, which is suitable only for oxidised ores.

**J. Pepper** sluiced some 92 cubic yards of ground at Pine Hill, and recovered 0.139 ton of tin oxide, containing 0.082 ton of metallic tin, valued at £21.3.

**J. S. Fenton** continued the treatment of tailings deposited in the Dalcoath Creek and recovered 0.106 ton of tin oxide, valued at £15.3. He has now taken over and commenced operations on Cox's sluicing claim.

**Grand Prize Mine.**—Work was continued by Casey and Smith on the southern lease. Approximately 360 tons of ore was broken and crushed at a light battery for a recovery of 6.85 tons of concentrate, containing 3.852 tons of metallic tin, valued at £1048.88.

Three men were intermittently engaged on the northern section and crushed 32 tons of ore for an output of 0.776 ton of tin oxide, containing 0.041 ton of metallic tin, valued at £104.06.

**X-Gorge Tin Mine.**—A. J. Salmon produced 4 tons of ore and by hand-crushing recovered 0.27 ton of tin oxide, containing 0.18 ton of metallic tin, valued at £46.45. The major portion of the year was devoted to prospecting the ground adjoining the mineral section, and trenching has opened up some kindly looking tin stone.

**Razor Back Tin Mine, Dundas.**—Two men, intermittently working on the northern lease, produced and hand-crushed 15 tons of ore for a recovery of 2.11 tons of concentrate, containing 1.239 tons of metallic tin, valued at £321.52.

Two men installed a grinding pan and oil engine on the old mill site, and, as opportunity allowed, were engaged in treating accumulations of residue and ore waste. A small quantity of tin concentrate was recovered and sold.

**Old Federation Tin Mine.**—J. Geason mined and treated about 28 tons of ore for an output of 2.523 tons of concentrate, containing 1.28 tons of metallic tin, valued at £233.33.

**E. Coleman** treated approximately 50 tons of lode material and recovered 1.11 tons of concentrate, valued at £99.13. There is a quantity of good milling ore lying about his workings.

**R. Smith** sluiced 170 cubic yards of ground at North Heemskirk and recovered 0.968 ton of tin oxide, containing 0.687 ton of metallic tin, valued at £178.37.

**H. G. Watson** ground sluiced 80 cubic yards of alluvials at North Heemskirk and recovered 0.37 ton of tin oxide, valued at £49.2.

**The Golden Sovereign Company** acquired an option over an area embracing Mayne's Tin Mine at South Heemskirk. An old battery was reconditioned and a concentrating table and strakes were added as concentrating units, but the project was abandoned in the early stages of crushing. Initial attention was directed to crushing the old dumps, but these were found to be too low in value and the tin too fine for economic working. There is no record of any production.

**S. W. Patterson and party** treated 157 cubic yards of beach sands at Narracoopa on King Island and recovered 1.55 tons of concentrate, containing 1.025 tons of metallic tin, valued at £265.938.

Other parties working at different places for varying periods obtained the following results:—

Name.	Tin Oxide.		Metallic Tin.	Value.	Locality.
	Tons.	Tons.			
Tunbridge .. .. .	0.013	0.008	2.076	Waratah	
Hayes .. .. .	0.408	0.207	53.717	Triat Flat, Kara	
Crabtree .. .. .	0.118	0.077	19.982	Middleton Ck.	
Humphries .. .. .	0.239	0.153	49.204	S. Heemskirk	
Clark .. .. .	0.128	0.031	8.045	Mt. Lindsay	
Cruickshank .. .. .	0.257	0.192	49.824	Balfour	
Griffiths .. .. .	0.058	0.044	11.418	Balfour	
Bayley .. .. .	0.187	0.074	19.203	Balfour	
Tomkins .. .. .	0.030	0.014	3.633	Zeehan	
Lucas .. .. .	0.019	0.010	2.595	Waratah	
Burgess .. .. .	0.050	0.033	8.564	King Island	
Copping .. .. .	0.172	0.101	26.210	X-River	

Three other men were prospecting for varying periods, two at Heemskirk and one at Renison Bell. One prospector, M. Donoghue, exposed a small lode carrying payable tin, but lack of crushing facilities was a handicap to production.

#### Zinc-Lead-Copper.

**Electrolytic Zinc Company of Australasia Limited, Rosebery, Williamsford, and Zeehan.**—The Hercules Mine produced 51,989 tons of ore and the Rosebery Mine 106,668 tons of ore, the total of 158,657 tons being treated at the Rosebery Mill for a recovery of 45,794 tons of zinc con-

concentrates, 9596 tons of lead concentrates, and 5406 tons of copper concentrates, containing 9884.14 oz. of gold, valued at £83,025.958; 946,805.26 oz. of silver, valued at £99,414.5255; 21,472.14 tons of zinc, valued at £585,116.0875; 7561.42 tons of lead, valued at £189,035.5; 529.48 tons of copper, valued at £32,827.76; and 41.39 tons of cadmium, valued at £18,462, making a total value of £1,007,881.821. The average number of men employed at the mines and works at Williamsford and Rosebery was 411. An average of 24 men was employed at the calcining works at Zeehan, where zinc concentrates from Rosebery were calcined and despatched to Risdon for final treatment.

The Superintendent has supplied the following information regarding developmental work:—

**Diamond Drilling.**—Footage bored totalled 5986, 4163 feet being drilled at the Rosebery Mine and 1823 feet at the Hercules Mine. No major ore occurrences were disclosed by drilling, but useful extensions of known ore were proved, the south-east lode on No. 9 level in particular showing a greater width than in No. 8 level. A prospect drilling campaign was commenced on the Dalmeny section. Four holes were bored but no ore of commercial value has been disclosed.

Developmental work, completed at the Rosebery Mine, comprised 739 feet of driving, 86 feet of crosscutting, 394 feet of rising, and 24 feet of winzing. The north drive on No. 6 level was advanced in low grade zincy ore. The north and south drives on No. 9 level were advanced in good grade ore. No. 9A winze from No. 9

level was sunk in average grade ore and has reached No. 10 level horizon.

Developmental work completed at the Hercules Mine comprised 456 feet of driving, 50 feet of crosscutting, 468 feet of rising, and 12 feet of winzing. To assist the war effort copper ore is being mined, the biggest tonnage coming from the copper section of "A" lode.

There have been no major alterations to the mining methods.

Shortage of manpower has restricted developmental work at both mines.

A breakaway of mullock occurred from 20N stope, No. 6 level, blocking the north drive and entrapping five men. The men were freed by relief gangs after 14 hours.

A fire occurred in the mine office and the building was partly destroyed, but all valuable records were saved.

An 8-cell Gardner-Denver flotation machine was added to the milling equipment for the purpose of taking off a copper concentrate. A sulphur burner was installed to produce sodium sulphite as a reagent for copper flotation.

Production has been maintained, but to enable this to be done it has been necessary to seriously curtail developmental work owing to shortage of labour. This must inevitably affect production, unless more labour is made available in the near future.

#### *Red Ochre.*

There was a production of 21 tons of red ochre, valued at £53, from an occurrence at Abbotsham. The ochre was exported to the mainland.

### *Northern Inspection Division.*

**Employment.**—The average number of men employed in metalliferous mining was 867, as compared with 1068 for the previous year. The decrease was largely due to a diversion of labour to war services and protracted dry weather in areas concerned with the sluicing of tin alluvials.

**Accidents.**—Seven accidents, resulting in non-fatal injuries to a like number of persons, were registered under the provisions of the Mines and Works Regulation Act, representing a decrease of six in the number recorded for the previous year.

The seven accidents were allied with surface operations, four occurring at works, two happening in quarries, and one being associated with sluicing operations.

In one case, the injury necessitated the amputation of the first joint of the right index-finger of the person concerned, but in the other cases the injuries were of a minor nature, although periods of incapacity exceeded 14 ordinary days.

**Safety.**—Constant care was directed to the production and maintenance of safe working conditions. The trimming of rock-piles in quarries, the battering back of quarry faces, the preservation of safe angles of repose of drifts and overburden in sluicing practices, and the safe battering of races in alluvial workings were of major importance in measures directed to the control of safety. The general care exercised is reflected in the small number of accidents attending operations of a minor to a major magnitude.

**Ventilation.**—The ventilation of underground workings has been reasonably satisfactory, but a period is approaching, at one mine, when innovations will be necessary to afford better control of air circulation and, in this regard, it may be necessary to provide mechanically controlled ventilation as against the existing natural conditions.

**Health and Sanitation.**—Due regard was directed to the provision and maintenance of crib houses, changing and bathing accommodation, latrines, and first-aid appliances at the principal mines. Continued failure by employees to make use of a well-equipped change-house at a large alluvial mine is regrettable, both from the aspect of hygiene and enforced expenditure.

Control of the dust nuisance in mines and works was under constant surveillance, and although conditions were generally satisfactory, lesser disabilities continued to develop, and remedial measures were sought as occasion demanded. At one plant atmospheric dust was less troublesome, as a result of the installation of a dust collecting unit, but added improvement is possible with the applied system.

**Explosives.**—Instances were encountered of nitro-compounds hardening at moderate temperatures, and this feature was the subject of a special investigation to determine and remove the cause of an apparently hazardous development in the physical condition of the compounds. The same physical characteristic has not been observed in compounds of later manufacture.

Nothing of an untoward nature was encountered in connection with the detonators and safety-fuse used at the mines and quarries.

**Machinery.**—Maintenance and protection of machinery and appliances received the attention demanded by the provisions of the Mines and Works Regulation Act. Safety-cages, winding and haulage ropes, and general appliances were maintained in good order, and no condition involving the unsafety of employees came under immediate observation.

**Inflammable Liquids.**—Care continued to be exercised in the handling and storage of inflammable liquids, and no untoward incidence was recorded. Restrictions in the use of petrol resulted in the continued disuse of a large number of installations.

**Workers' (Occupational Diseases) Relief Fund.**—Services involved under the provisions of this Act concerned arrangements for the medical examination of new employees and employees considered to have contracted industrial ailments. Several cases of alleged affliction were investigated for the purpose of applications for compensation.

**Mineral Resources.**—Several properties were examined in connection with applications for financial assistance under the provisions of the Aid to Mining Act. As opportunity permitted, in the general execution of duties, reports were compiled upon prospects and possibilities of areas having a material bearing upon the development of the mineral resources.

## MINING OPERATIONS AND PRODUCTION.

**Gold.**—Gold mining was less active, the total output being 908·436 oz. fine gold, valued at £7631 sterling, as compared with 1029·7oz., valued at £8616 sterling, for the previous year.

**Lisle.**—Operations on auriferous alluvials in the Lisle basin continued to decline. Miscellaneous parties recovered 31·5 oz. of alluvial gold containing 28·494 oz. fine gold.

**Beaconsfield.**—Gold mining was quiescent at Beaconsfield, the only recorded production being 2·94 oz. from the crushing of a small parcel of stone at the Golden Horse-shoe mine.

**Lefroy.**—Cyanidation of old battery tailings was continued by the Lefroy Dumps Syndicate, at Sludge Creek, and 1090 tons of tailings was processed for a return of 128·8 oz. fine gold.

A small parcel of stone was selected from an old dump and was crushed by F. Randel for a return of 2·94 oz. fine gold.

Miscellaneous parties recovered 5·2 oz., containing 4·73 oz. fine gold, from alluvial workings.

**Mathinna.**—Conditioning and cyanidation of slimes was continued at the Golden Gate Mine, and 9313 tons were processed for a return of 784·21 oz. fine gold.

H. Moses crushed a small quantity of stone from the Old Boys lease and accounted for 18·09 oz. fine gold.

There was no production of moment from operations by miscellaneous parties in the Mathinna area.

Mining was quiescent at Alberton and New River, the only production being 1·48 oz. fine gold from the mechanical treatment of battery tailings on the Mount Victoria leases.

Alluvial gold extracted by the Endurance Tin Mining Company from tin concentrate, recovered from the sluicing of tin alluvials at South Mount Cameron, returned 88·65 oz. fine gold.

**Copper.**

Diamond drilling was carried out by the Department on the copper series at Upper Scamander, and although target areas were penetrated, ore widths and values were not encouraging, whereupon the plant was transferred to Weldborough for prospect drilling along the line of the "F-B" lode.

A small quantity of copper ore was produced from the old Orieco workings for an output of 0·478 ton copper. Winzang was carried out from the floor of the main adit, but lode developments were not encouraging and operations were suspended.

**Tin.**

The recorded output of metallic tin was 966·156 tons, valued at £250,717 sterling, as compared with 1027·3 tons, valued at £268,595 sterling, for the previous year. Diversion of labour to war services, reduced activities by small parties, and protracted dry weather in areas concerned with hydraulic mining were largely responsible for an aggregate decline in the production of tin.

**Storey's Creek Tin Mine, Storey's Creek.**—Ore mined and milled was 9022 tons, for an output of 40·1 tons of tin oxide, containing 26·46 tons of metallic tin and 115·9 tons of high-grade wolfram. Operations were seriously affected by a shortage of labour, the number of employees decreasing from 91 to 69 and the throughput of ore being 3987 tons less than for the previous year.

Lode dimensions and values were well maintained, and production was assisted by the completion of an auxiliary haulage between Nos. 4 and 5 levels, pending a connection of the main haulage with the latter level. An extensive developmental and constructional programme is to be undertaken when labour becomes available. The programme involves a new main shaft for skip haulage, modern crushing units, and a new concentrating mill. When completed the project will result in centralised operations and will facilitate the introduction of mill residues for slope filling.

**Aberfoyle Tin N.L., Rossarden.**—Productive operations were well sustained, and it was possible to pursue active development work aggregating 2120 feet of driving, 217 feet of crosscutting, and 89 feet of rising on the various levels. The policy of the company in prospect drilling was hampered by a shortage of labour, and the footage drilled was limited to 418. Stopping was pursued on Nos.

1 to 4 levels, the stopes on the upper levels approaching depletion whilst those on the lower levels were in the early stages of development.

Ore mined and milled was 16,609 tons, and recoveries were 369·8 tons of jig "firsts" and 615·75 tons of jig "seconds." Flotation and magnetic separation of these products resulted in an output of 360 tons of tin concentrate, averaging 74·5 per cent of metallic tin and 71 tons of wolfram. Sales of finished products from stocks amounted to 375·527 tons of tin oxide, containing 278·55 tons of metallic tin and 62·25 tons of high grade wolfram.

Important innovations in milling equipment were commenced and will comprise two crude ore bins, "Ross" feeders, jaw crushers, and belt conveyor for transport of crushed ore from the crushing station to the mill. An improved return water system was provided to alleviate water shortage during dry periods. Two K.V.A. banks of static capacitors were installed to provide simultaneous operation of compressors on the existing power transformers. An average of 99 men was employed.

Operations by miscellaneous parties on lode and alluvial occurrences in the Storey's Creek-Rossarden district accounted for an output of 1·189 tons of tin oxide, containing 0·838 tons of metallic tin, but there are no developments of moment to be recorded in connection with these activities.

**Goshen Tin Mines, St. Helens.**—Sluicing at various faces of mining tenements at St. Helens resulted in an output of 38 tons of tin oxide, containing 27·79 tons of metallic tin. Irregular seasonal periods again resulted in variable sluicing activities, and the number of men employed ranged from 12 to 36.

Conditions enabled sluicing to be pursued for a short period on the company's lease along the Groom River at Goshen. An output of 5·55 tons of oxide, containing 3·94 tons of metallic tin, resulted from these operations.

**Georges Bay Tin Mining Company, St. Helens.**—Operations on tin alluvials were not materially active, and resulted in the production of 2·143 tons of concentrate, containing 1·75 tons of metallic tin.

Miscellaneous parties operating on tin alluvials in the St. Helens district accounted for 5·74 tons of oxide, containing 3·97 tons of metallic tin. These operations afforded employment for 13 men.

**Tasman Tin N.L., Lottah.**—Quarrying and milling of tin granites were continued by the tribute party at the old Anchor Mine. The quantity of tinstone crushed was estimated at 8023 tons, and 20·21 tons of concentrate, containing 14·48 tons of metallic tin, was sold from stock products. Operations gave employment to an average of 18 men.

**Bryce and Eddy, Weldborough.**—Sluicing was continued on a run of shallow alluvials on the recreation reserve, and resulted in an output of 0·429 ton of oxide, containing 0·31 ton of metallic tin.

**Fancy Creek.**—Sluicing was more active by Walker and party on an extension of the alluvials and formation at the old Fancy Creek workings, and production increased to 2·84 tons of tin oxide, containing 2·35 tons of metallic tin.

**H. Harridge, Moorina.**—Intermittent sluicing was pursued on the occupied lease on the Frome River for 0·94 ton of concentrate, which contained 0·63 ton of metallic tin.

**A. W. Bird, Moorina.**—Sluicing was actively pursued on runs of tin alluvials, flanking the western side of the Weld River, and resulted in an output of 16·24 tons of tin oxide, containing 9·88 tons of metallic tin. Operations afforded employment for an average of 9 men.

Miscellaneous parties operating on shallow alluvials and granitic formations in the Lottah-Moorina area accounted for an output of 15·41 tons of oxide, containing 10·93 tons of metallic tin. There were no developments of moment, but these operations gave employment to 28 men.

**Shean Bros., Pioneer.**—Five men were actively engaged in sluicing 15,000 cubic yards of alluvial ground flanking the Wyniford River, and recovered 6·96 tons of concentrate, containing 5·21 tons of metallic tin.

**Eastern Leads Tin Mine, Pioneer.**—An increased throughput of tin alluvials resulted from more active operations on this property. An output of 6·3 tons of oxide, containing 4·55 tons of metallic tin, accrued from the sluicing of 13,000 cubic yards of ground.

*Endurance Tin Mining Company, South Mount Cameron.*—Hydraulic mining was actively continued on recent and ancient tin alluvials, and a substantial increase in the production of tin oxide resulted from the sluicing of 508,500 cubic yards of ground. The quantity of concentrate sold was 218.82 tons, containing 161.21 tons of metallic tin. Alluvial gold extracted from the tin oxide contained 88.66 oz. fine gold.

Tributers continued with the treatment of dumps at the old Pioneer workings and recovered 2.172 tons of oxide, containing 1.51 tons of metallic tin.

*H. F. Woods and Party, Pioneer.*—This party acquired the water rights of the Waugh Company and proceeded with race extensions and laying of pipe columns to bring an area of alluvial ground, on the eastern side of the Ringarooma River, within control of gravitational sluicing. The scheme was sufficiently advanced to enable 8400 cubic yards of ground to be sluiced and elevated for a recovery of 2.84 tons of concentrate, containing 2.05 tons of metallic tin.

Operations by miscellaneous parties on tin alluvials in the Herrick-South Mount Cameron area were less active, but accounted for an output of 15.49 tons of oxide, containing 11.08 tons of metallic tin. These activities afforded employment for a number of men varying from 13 to 35 according to seasonal conditions.

*Star Hill Syndicate, Gladstone.*—Mechanically controlled nozzling was continued by this syndicate, and 10.88 tons of tin oxide, containing 7.76 tons of metallic tin, resulted from the sluicing of 45,000 cubic yards of ground.

*Lanka Tin Mine, Gladstone.*—Sluicing was less active on the tin alluvials at this mine, and the production declined to 0.48 ton of oxide, containing 0.34 ton of metallic tin.

Miscellaneous parties, using water from the Mount Cameron race, produced 17.16 tons of tin concentrate, estimated to contain 11.81 tons of metallic tin.

*J. H. Dobson, Boobyalla.*—Sluicing and elevating were continued with a steam plant on relatively shallow alluvials at Boobyalla. An output of 5.55 tons of oxide, containing 3.99 tons of metallic tin, resulted from the treatment of 30,116 cubic yards of ground.

Miscellaneous operations in the Gladstone area accounted for an output of 7.23 tons of tin oxide, estimated to contain 5.16 tons of metallic tin.

*Briseis Consolidated N.L., Derby.*—Following the completion of a boring campaign to test the down-stream continuation of the Cascade lead, a programme of river works was commenced for a diversion of the Rigarooma River in preparation for a progressive extension of the sluicing face along the course of the lead.

Developmental work and the stripping of basaltic overburden were hampered by a shortage of labour, but the aggregate throughput of overburden exceeded that for the previous year. Overburden removed amounted to 237,500 cubic yards, and 707,000 cubic yards of drifts was sluiced and elevated with electrical pumping units. The quantity of tin oxide recovered from the drifts was 457.5 tons, and this was estimated to contain 329.4 tons of metallic tin. Operations afforded employment for an average of 146 men.

The number of miscellaneous operators in the Derby-Winnaleah area varied from 6 to 20 men, according to seasonal conditions, and these activities, on shallow alluvials, accounted for an output of 4.08 tons of tin oxide, containing 2.77 tons of metallic tin.

*Arba Tin Mine, Branxholm.*—Tribute parties continued with operations and produced 21.45 tons of oxide, containing 14.27 tons of metallic tin. These operations gave employment to 9 men.

*Ruby Flat (O. J. Walsh) Branxholm.*—Sluicing was pursued on detrital material and granite-leader formation for an output of 5.16 tons of tin oxide, estimated to contain 3.52 tons of metallic tin.

*Baker's Discovery, Branxholm.*—Sluicing periods were limited by seasonal periods, but available water enabled sufficient sluicing to be pursued for an output of 3.32 tons of oxide, containing 2.31 tons of metallic tin from tin-granites and shallow alluvials.

Miscellaneous parties operating on shallow alluvials and granitic formations in the Branxholm area recovered 7.89 tons of tin oxide, which returned 5.53 tons of metallic tin.

*John Bull Tin Mining Company, Bell's Hill.*—Activities by this company were confined to the crushing of dumps of "forkings" from the early sluicing of detritals and granitic formations. Operations resulted in the recovery of 3.62 tons of concentrate, containing 2.28 tons of metallic tin.

Miscellaneous parties in the Ringarooma area accounted for an output of 4.42 tons of oxide estimated to contain 2.75 tons of metallic tin, but there is no noteworthy development to be recorded in connection with these activities.

Interest continued to be evinced in occurrences of alluvial tin in the Mount Stronach area, but there was no recorded production.

*Strait Islands.*—Mining was not materially active. The recorded production from Cape Barren Island was 1.04 tons of tin oxide, containing 0.72 ton of metallic tin, and from Flinders Island 0.34 ton of oxide, containing 0.24 ton of metallic tin.

**Wolfram.**

The total production of wolfram was 183.23 tons, as compared with 235.5 tons for the previous year. Decreased production was mainly due to a diversion of labour from the Storey's Creek Mine, where the output declined from 205 to 115.9 tons. At this time, there has been no depletion of production possibilities, and it is regrettable that there should be a diversion of labour when tungsten ores are in short supply for the requirements of war.

Operations on the tin-wolfram lode series at the Aberfoyle Mine resulted in the production of 71 tons and the sale of 62.25 tons of wolfram.

An output of 3.28 tons of wolfram resulted from operations by miscellaneous parties on wolfram veins at Upper Scamander and Gipp Creek.

Wolfram mining was not appreciably active in the Moira district, the total output being 1.8 tons, of which 1.59 tons accrued from small-scale operations at the Red Robin Mine.

**Limestone.**

Operations continued uninterruptedly by the Broken Hill Proprietary Company Limited at the Melrose quarries, and 158,265 tons of limestone were shipped from Devonport. An average of 103 men was employed.

Other limestone production, including ground stone for agricultural purposes, amounted to 6975 tons.

**Cement.**

A decline in trade resulted in curtailment of operations by the Goliath Portland Cement Company at Railton. Full production on one kiln only was possible over about seven months of the year, but, with reduced manpower, operations were spread to make the best use of men available. There were no major plant alterations, and quarry development was carried on to meet the current and future requirements.

*Southern Inspection Division.*

*Employment.*—The average number of persons employed in mines, works, and quarries, including the small collieries in the North-Western Mineral Division, was 2296, as compared with 2144 for the previous year.

*Accidents.*—There was one fatality, and nineteen persons were incapacitated for more than 14 days, as the result of injury during the course of employment.

The fatal accident occurred at a metallurgical works and was due to a person falling from a ramp on to a concrete floor, a distance of 30 feet. It was assumed that the deceased had a seizure and fell through the hand-rails affording normal protection to the ramp.

Four accidents, of a trivial nature, occurred in colliery workings and fifteen mishaps, involving non-fatal injuries, were associated with surface operations at mines and works.

*Safety.*—Explosions of air-borne calcium-silicide dust continued to receive attention, with the object of eliminating the explosion hazard, and, latterly, technical considerations were inclined to the adoption of inert atmospheres in pulverising practices.

The barring down of affected ground and the maintenance of safe batters at quarry faces were under regular surveillance. Conditions attending the removal of pillars and general hewing of coal, particularly in machine cutting, caused periods of concern and the insistence upon measures directed to ensuring added safety for employees.

An extension of grunching and the firing of several fuse-controlled shots at one time in coal faces developed an abnormal hazard in some collieries. Shot-firing conditions were examined, and initial representations were made for the establishment of rules to suitably control shot-firing practices in the interests of safety.

*Ventilation.*—There were no untoward incidents involving accumulation of inflammable or noxious gases in mines, but the ventilation of sections of colliery workings was not maintained at a standard normally desired, and frequent requests were made for improved conditions. Ample quantities of air were caused to enter the principal collieries by mechanical means, but deficiencies in circulating systems resulted in undesirable conditions at many coal faces. Small collieries continued to rely mostly upon natural ventilation, and results were not generally satisfactory. In some cases the workings have advanced to a stage that will necessitate the installation of fans to ensure proper control of ventilation. A nuisance of smoke, fumes, and dust from intermittent shot-firing, in the absence of adequately controlled ventilation, caused some concern, and measures were instituted to ultimately eliminate the disability.

*Health and Sanitation.*—The correction of conditions of dust arising from crushing, drilling, coal-cutting, and other operations was under frequent observation. Some improvements were effected, but there is still much to be accomplished to attain the standard of dust-control desired.

Some improvements were obtained in bathing and changing accommodation, crib places, and sanitary conveniences, but innovations are still necessary in existing facilities.

*Explosives.*—No difficulties were experienced in the general storage and handling of explosives. Arrangements were made for improved magazines at several quarries, and these are to be progressively effected. Irregularities observed in the handling and use of explosives were corrected without necessity for legal proceedings. No major defects were encountered and no complaints were received regarding the quality of the nitro-compounds, detonators, and safety-fuse used at the mines and works.

*Inflammable Liquids.*—Restrictions on fuel consumption reduced the amount of work usually involved on new installations and resulted in a number of pump installations being placed out of commission pending an alteration of the restrictions. Conditions governing commissioned installations and the general handling of petrol and kerosene were kept under surveillance. Irregular practices were corrected as occasion demanded.

*Machinery.*—Due regard was given to the safe protection and maintenance of machinery and appliances as required by the Mines and Works Regulation Act and

the Inspection of Machinery Act. Much time was involved in making an examination of various legislative enactments and in preparing a set of rules relating to the use of electricity and electrical machinery in collieries. An establishment of electrical rules is becoming necessary with the expanding mechanisation of colliery practices.

## OPERATIONS AND PRODUCTION.

*Coal.*

The total output of coal was 134,442 tons, valued at £108,241, as compared with 109,714 tons, valued at £85,311, for the previous year. An average number of 244 men was employed directly in production. The increased output was the result of a greater demand for Tasmanian coal owing to short supplies of imported coal. Although the coals of this State are not as high-grade as coals that have been imported, the enforced expansion of consumption is demonstrating that the fuel requirements of many industries and undertakings can be satisfied without the pre-war importation ratio. The adoption of modern methods of combustion by fuel and furnace engineers would continue to benefit mining in a State which is favoured with immense coal resources. There were no industrial stoppages in the industry during the year.

*Fingal-Mount Nicholas-Dalmaine Coalfield.*—The Cornwall Coal Company continued as the major producer, and accounted for a total output of 94,265 tons of coal, valued at £75,409 at the colliery bins. An output of 77,550 tons accrued from operations at the Cornwall Colliery, and 16,715 tons of coal were produced under mechanised conditions at the Mount Nicholas Colliery.

At the Jubilee Coal Mine, the main heading was advanced to 2130 feet, and coal winning was confined to developmental places off this heading and to the eastern workings. The output was 21,735 tons, valued at £17,162, and 45 men were employed.

From a normal development of the bord and pillar system, the Dalmaine Mine produced 1757 tons of coal, valued at £803, and employed 6 men.

Four men were employed and 3937 tons of coal, valued at £1969, resulted from bord and pillar working at the Fingal Colliery.

*Avoca Coalfield.*—Innovations at the Stanhope Colliery comprised general electrification, installation of crushing and sizing units, and the mechanisation of coal cutting. The number of employees increased from 15 to 17, and mechanisation resulted in an increase of 2741 tons in the output of coal, the total output being 7502 tons, valued at £7613.

Troubled seam conditions affected operations at the Mount Christie Coal Mine, and production receded to 308 tons, valued at £280.

*Sandfly-Cygnnet Coalfield.*—The output of coal from the Sandfly Mine decreased to 939 tons, valued at £997. The Semi-anthracitic coal from this mine is a suitable fuel for the conversion of limestone to lime, but production has been retarded by seam troubles, water difficulties, and a shortage of labour.

*Upper Derwent Coalfield.*—The Langloh Coal Mine remained idle until the latter part of the year, when the leases were transferred and immediate steps were taken to unwater and condition the workings for a resumption of protective operations, which is expected early in the new year. Coal quality and locality advantages place this mine in a favourable position for future production.

*York Plains Coalfield.*—Modified longwalling was continued at the York Plains Mine, and 537 tons of coal, valued at £805, were produced for the fuel requirements of hop kilns.

*The Mersey Coalfield.*—Several small collieries continued to work under low-seam conditions on this coalfield, but there was less productive activity, and the total output receded to 3644 tons.

The Aberdeen Mine produced 1322 tons, valued at £1099, and employed 4 men.

The Tarleton Mine produced 860 tons, valued at £726, and engaged 3 men.

An output of 757 tons, valued at £783, resulted from operations at the Illamatha Colliery, and 4 men were employed.

The Black Beauty Mine produced 423 tons, valued at £394, and engaged 2 men.

Botts No. 2 Mine produced 282 tons, valued at £201, and then closed down.

#### *Carbide, Limestone, and Silica.*

Limestone was quarried at Ida Bay, and silica was produced in the district for the Australian Commonwealth Carbide Company. These minerals are used principally in the manufacture of the products of the company. The company also arranges a supply of limestone for the Electrolytic Zinc Company at the Risdon works. The quantity of limestone quarried was 22,654 tons, valued at £16,150, and the quantity of silica was 1448 tons, valued at £1321. To augment supplies of limestone attention was directed to deposits at Junee. A boring campaign was arranged, and there are prospects of a quarry being opened in this locality.

The Australian Commonwealth Carbide Company produced 9637 tons of calcium carbide, valued at £192,740, representing an increase of 1073 tons in the production recorded for the previous year. In addition, 414 tons of calcium silicide, valued at £35,791, was manufactured from local materials.

#### *Red Granite.*

Continued expansion of the red granite industry was adversely affected by building restrictions, imposed under wartime conditions, and Balmoral Red (Aust.) Pty. Ltd. was compelled to suspend operations after producing 355 tons of marketable granite, valued at £2937, during the earlier part of the year.

#### *Osmiridium.*

Adamsfield continued as the active centre of osmiridium mining, but even though there was no material variation in the average price, productive possibilities were less

attractive, and the output declined from 192 oz. to 117.621 oz. Gradual depletion of easily worked ground and inadequacy of water supplies to enable claimholders to work deeper ground resulted in many experienced miners drifting from the field to employment in other spheres. Operations directed to rehabilitating lode mining resulted in no major development. Favoured with head-water facilities, N. C. Clark and F. Roach continued with small-scale sluicing and elevating. Latterly, attention was directed to securing an increased price and an improved marketing arrangement, with the object of stimulating production.

#### *Tin.*

Small parties continued with prospecting and productive operations on occurrences of alluvial tin, between Cox Bight and Port Davey, and accounted for an output of 2.923 tons of tin oxide, containing 2.14 tons of metallic tin.

There was no material activity in tin mining at Coles Bay, and the only recorded production was 0.084 ton of oxide, containing 0.058 ton of metallic tin.

#### *Ore Treatment.*

The Electrolytic Zinc Company of Australasia Limited was in continuous operation at Risdon on the processing of imported calcines and zinc calcines recovered from mining, milling, and calcining operations at Rosebery. Plant extensions were carried out as labour and material became available.

Products from the treatment of imported calcines comprised 55,473 tons of zinc, valued at £1,275,879; 121.8115 tons of cadmium, valued at £53,750; and 13.0164 tons of cobalt oxide, valued at £5987. Calcines recovered from Tasmanian ores and actually processed at Risdon returned 18,809 tons of slab zinc, valued at £432,607; 36.75 tons of cadmium, valued at £14,919; 1129 tons of lead, valued at £25,346; 147,754 oz. of silver, valued at £19,518; and 3.254 tons of cobalt oxide, valued at £1497.

The average number of men employed was 1670.

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

*Employment.*—The average number of persons employed in the mining industry was 1600, representing a decrease of 158 in the number employed last year.

Of the total number, 1595 were employed in connection with operations by the Mount Lyell Mining and Railway Company Limited. The remainder was employed for portion of the year in prospecting for asbestos and gold.

*Accidents.*—Thirty-two accidents, causing fatal injuries to two persons and non-fatal injuries to 31 persons, were registered under the provisions of the Mines and Works Regulation Act, compared with 35 accidents, which caused fatal injuries to four persons and non-fatal injuries to 32 persons, registered during the previous year.

Twenty-four accidents, causing fatal injuries to two and non-fatal injuries to 23 persons, occurred in connection with surface operations, and eight accidents, causing injuries to a like number of persons, occurred underground.

Of these accidents, 11 were recorded as being caused by carelessness of the persons involved, 10 by misadventure, five through the carelessness of a workmate, two from inexperience, one resulted from the use of defective gear, while another was indirectly due to a faulty layout of underground traffic lines. One accident was attributed to bad visibility, due to restrictions of outside lighting under National Security Regulations. The cause of one accident has not been established.

Of the accidents allied with surface operations, two men were fatally injured by a fall of about 80 tons of rock from an opencut face. Investigations revealed that these men had been working immediately below this face and the fall occurred without giving any warning when slipping away from a concealed "greasy head." The two men were buried by the fallen rock and were dead when recovered. A verdict of accidental death was returned by the jury in the Coroner's Court. Ninety-nine working days were lost by one man through having his foot jammed between the buffers of railway trucks. He was engaged in shunting operations and had no previous experience in such work. A young inexperienced person was using a popper to bore holes in some rocks on the floor of an opencut when he bored into an unexploded charge. The resulting explosion caused him to receive moderately severe injuries

which incapacitated him for 67 working days. A person was driving an electric power shovel at an opencut working when a stone rolled down the rill of broken ground, struck the side of the shovel-cabin, pinned his foot on the controls, and caused injury that necessitated the amputation of one toe. Contrary to instructions a mill employee attempted to use a broom under a moving belt conveyor. His arm was caught between a guide roller and the belt, and he sustained injuries that resulted in the loss of 43 working days. Sixty-eight working days were lost by one man, who, when employed at an opencut workings, sustained a broken arm as a result of being struck by a pick which was dropped from a height by his mate. Three men suffered from hernia through lifting excessive weights, while two others received injuries as a result of tripping over obstacles on the floor where they were walking. Another man had a finger of his hand broken by a steel ball falling on it, when he was engaged in loading steel balls into a ball mill. He lost 58 days. The remaining accidents associated with surface operations were not of a serious nature.

Of the accidents that occurred in underground workings, one young person had a remarkable escape from serious injury when he was caught between the side of a shaft and a moving cage. Apparently this man attempted to step out of the cage while it was travelling down a shaft and was dragged between the cage and walls of the shaft for a distance of 70 feet. He was not seriously injured and returned to work after being absent for 14 working days. Another man was involved in two accidents during one month. He was caught and jammed by a railway truck against a concrete wall, sustaining injuries to his back and ribs. After being absent from work for 20 days, he had the misfortune to have his finger jammed between the buffers of a truck when engaged in coupling up a rake. This caused him to lose another 25 days. Another person lacerated his leg with an axe while engaged in timber work in a stope, and was incapacitated for 36 days. Other underground accidents were of a minor nature.

*Safety.*—Inspection work has been regularly directed towards the maintenance of safe working conditions. Corrections have been made and advice given when

required to achieve these conditions. Strict attention has always been directed towards the removal of affected ground before any persons are allowed to work underneath it, and, with the exception of two instances, satisfactory results have been obtained.

Attention was directed to a faulty illumination system in a long transport tunnel where it was found that the arrangement of the electric lamps on the side of the tunnel caused, by direct glare, bad visibility for drivers of the electric locomotives used for haulage. Lighting arrangements have been altered by introducing a system of shading the lamps, and this has considerably increased the range of vision along the tunnel, thereby increasing the safety of haulage operations. Attention was also directed to a building situated on a sharp curve near the entrance of this tunnel which also prevented the drivers from having a clear view of the track at the approach of the tunnel. The building has been removed.

At a station where ore is unloaded from ore rakes into a mill bin, it was found that a dangerous condition existed through the bin openings being too wide. Representations were made to the management and resulted in alterations that have improved the condition of working.

The condition of life-lines and the use of these lines by men working in dangerous positions have been kept under surveillance with satisfactory results.

Underground the protection of open ore-passes has received attention and various types of covers and grids have been discussed and tried, but, as yet, no entirely satisfactory type of cover has been found for the elimination of hazards allied with open passes.

The safe condition of winding ropes, engine hoists, shafts, machinery, and other appliances used underground and on the surface has been maintained.

It is pleasing to report that the chain cage-suspension system, which, as mentioned in the previous report, has been installed at all plats in one mine, has functioned perfectly during the year, and has entirely eliminated the necessity for using the old lever-type of chairs in any shaft where it is necessary to rest a cage at plat-level while being loaded. It is of interest to note that the upkeep of this new system has been practically nil for the year.

**Ventilation.**—Ventilation of underground workings and some surface buildings has received attention and reasonably satisfactory conditions have been achieved. Temperature conditions at working places have been noted and found satisfactory.

In one underground mine the ventilation was not adequate and was improved by the installation of a larger capacity suction-fan at the surface and building a comprehensive system of air-flow control doors and brattices at the various levels and rises of the workings.

With the object of removing fumes caused by the exhaust from motor vehicles and from other operations, the ventilation of workrooms attached to a large garage received attention. Better conditions were obtained in this case by the installation of two exhaust fans connected to large diameter flues provided with adjustable intake air-vents at suitable points.

**Health and Sanitation.**—Attention has been directed to matters affecting the health of employees in the mines and works. Reasonable conditions at crib-places, change-houses, and latrines have been maintained. Casualty dressing rooms have been improved to a high standard, and personnel with up-to-date training in St. Johns Ambulance work are in charge of these dressing stations.

By the use of a Konimeter sampler tests have been conducted to observe if any undue concentration of dust was contained in the air at various places of work. In some instances these have been found excessive, and, on representation being made to the management, alterations have been made to correct the observed faults.

Close supervision was needed to enforce the use of water to suppress dust arising from various surface and underground operations. The use of water jets and sprays is a partial protection to workers against the dust menace which causes silicosis, but, although this fact is widely recognised by the employees, they are the greatest offenders in the matter of using appliances provided for such protection. Again it has been necessary to severely reprimand several employees for not making sufficient use of water, and in one instance it was necessary to take legal proceedings against a worker for failing to such appliances.

Changing and bathing facilities have operated in a satisfactory manner during the year and the majority of the employees avail themselves of such facilities. A hot and cold water supply has been fitted to hand wash-basins at a mill crib-place and is available for employees to use before eating their meals.

**Explosives.**—Supervision has been maintained of the handling and use of explosives. An enquiry was conducted into the probable cause of a fatal accident mentioned in the previous report, by officers of the Department and a technical representative of the manufacturers of the explosive. All the circumstances connected with the accident and the methods used in handling explosives were examined and it was considered that the probable cause of the explosion was due to smearing the sides of the hole with explosive substance through forcing the cartridges past an obstruction. To prevent a recurrence of this hazard it was decided to adopt copper loading tubes.

Two accidents occurred during the use of explosives and were considered to have been due to carelessness. In one instance a person was injured by a scat flying from a bulled hole. The occurrence was investigated and legal proceedings were taken against a ganger and two miners for firing a blast in a manner likely to cause injury to some person. In the second case, reviewed under "Accidents," a man was injured by boring into an unexploded charge.

Care and attention were directed to the proper use of tamping sticks when charging explosives. In order to prevent the sticks from splitting and burring at the ends, a wooden ferrule was suggested and adopted, with beneficial results.

**Machinery.**—No accidents of a serious nature have been recorded during the year in connection with machinery.

The records of regular inspections and test kept by the registered managers were examined and checked, and conditions were found to be satisfactory.

Occasional joint inspections were made with the Inspector of Machinery and beneficial results accrued. In one instance it was considered that an internal lighting effect, which had been adjusted to comply with National Security Regulations, caused a danger to engine attendants. This matter was examined and proper illumination was restored.

**Prosecutions.**—Legal action was taken against eight persons. One person was convicted for having used obscene language, two were involved in a fight and were charged with unseemly behaviour and the use of insulting language, and three persons were charged with being jointly and severally responsible for the firing of a blast under circumstances likely to cause injury to some person. Two of these persons were fined. Another man was charged and found guilty of failing to use water to allay dust during rock-drilling operations. One person was observed to be tamping explosives with a stick with a nail in the end. He was prosecuted, convicted, and fined.

**Explosives Act.**—Supervision has been maintained in respect of the importation, landing, transport, storage, and general use of explosives.

Explosives landed at Regatta Point for Queenstown were:—

	lbs.
Polar A.N. gelignite "50" 1 $\frac{1}{2}$ "	464,850
Polar A.N. gelignite "60" 1 $\frac{1}{4}$ "	2,950
Polar A.N. gelatine dynamite "75" 1 $\frac{1}{2}$ "	2,800
Polar A.N. gelatine dynamite "75" $\frac{3}{8}$ "	6,900
<b>Total</b>	<b>477,500</b>
	<b>Number.</b>
Detonators, No. 6 L/A	700,000
Detanotors, electric	1,200
Fuse igniters	45,000
	<b>Cases.</b>
Safety fuse, in reels	500

Supervision of all magazines and depots has been maintained and generally satisfactory conditions have been observed. One large-capacity magazine has been constructed and put into commission.

During the cold weather period some trouble was experienced with portion of one consignment of 2000 cases of Polar A.N. gelignite. Some of the cartridges contained in the cases were affected by low winter temperatures and become very hard. Directions were given to treat these hard explosives as frozen, and arrangements were made to thaw them before using. Representation of this trouble was made to the manufacturers, and subsequent deliveries proved satisfactory.

Some recurrence of the trouble experienced in former years which causes deterioration in the ammonium nitrate gelignite through deliquescence, was again experienced in respect of one consignment. This fault, as

before, appeared to be due to faulty wrapping of the cartridges, and upon complaint being made, subsequent deliveries were noted to be more carefully wrapped.

Detonators, both ordinary and electric, have been found to give satisfactory service.

Attention has been given to the testing of the burning rate of all safety-fuse used. The results of these tests have been satisfactory.

*Inflammable Liquids Act.*—Inspections were made of premises licensed under the provisions of the Inflammable Liquids Act, and reasonable conditions have been maintained.

Owing to the restrictions due to rationing of supplies, several licences have been cancelled, whilst others have been amended to provide for reduced storage. This has resulted in storage quantities being reduced by 6792 gallons of mineral spirit and 1000 gallons of mineral oil.

*The Workers' (Occupational Diseases) Relief Fund Act.*—Certificates certifying that 62 new employees were free from disease have been received and registered.

Applications were made by 47 persons for examination of the effects of industrial disease. In seven instances applicants were found to be affected by silicosis. A comparative analysis of the affected cases is as follows:—

	1941.	1942.
Incapacitated (affected by silicosis 100 per cent) .....	Nil	1
Partially incapacitated (over 50 per cent affection) .....	1	1
Partially incapacitated (50 per cent affection) .....	1	Nil
Partially incapacitated (under 50 per cent affection) .....	6	5
Totals .....	8	7

The following tabulation illustrates the ages and length of service in mining occupations of the seven persons certified as suffering from silicosis:—

Certified Incapacity due to Silicosis. Per cent.	Age of Person Affected. Years.	Length of Service in Mining Occupations. Years.
100	54	34 underground
75	63	45 surface as smelter employee
40	53	12½ underground
30	44	12½ underground, 5 surface
20	57	26 underground
20	55	12 underground, 9 surface
20	36	15 underground

*General.*—During the latter part of the year the supervision of the Zeehan mineral district was added to this inspection area. Returns and records are included in the report for the Western Division by the Inspector of Mines, Burnie.

An important new activity in the North Dundas district is the prospecting work being carried out under the direction of the Colonial Sugar Refining Company in the asbestos-bearing serpentine belt.

Developmental work consists of 260 feet driven by three adits across the formations, a series of trenches, and a small shaft, which have proved the existences of a strong formation of chrysotile asbestos. Also some useful type of an amphibole asbestos has been noted.

Preparations are in hand to install a small mill to treat this ore.

Industrial conditions have been maintained on a reasonable basis in spite of difficulties encountered through war-time restrictions and a general shortage of labour. Labour shortage has caused a curtailment of underground operations, both in regard to development and production, and has made much overtime work necessary.

The Sick and Accident Fund, Hospital Union, and Dental Clinic operating for the mine employees has worked smoothly.

*Aid to Mining.*—Isolated prospectors working on tin-bearing country in the Heemskirk district have been visited and assisted by advice and the sampling of their claims. An examination was made of an asbestos-bearing area near the mouth of the Spero River. Arrangements were made to grant assistance to two men to proceed with the development of this prospect, but they failed to avail themselves of the opportunity. Examinations were also made of asbestos deposits on the western shore of Mac-

quarie Harbour, and in the North Dundas district. Reports were prepared and submitted upon these activities and mineral possibilities.

Prospecting for gold has been practically suspended in the district, apart from a limited amount of work in the Jane River district.

#### Mining Operations and Production.

##### Asbestos.

Under the direction of officers of the Colonial Sugar Refining Company, a party of three men was engaged in testing the productive value of a deposit of chrysotile type of asbestos at Asbestos Point in Macquarie Harbour. Operations extending over a period of four months were directed towards testing the formations by trenching and shafting. Encouraging results were obtained and a parcel of seven tons of ore was shipped to Sydney for testing. The value of this ore was stated to be £20 nett.

While this work was in progress the Company commenced to prospect the asbestos-bearing serpentine formation in the North Dundas area, and, as this prospect has proved equal to that at Macquarie Harbour, with an added advantage in accessibility, the Macquarie Harbour leases will not be further developed until production is fully established on the Dundas area.

##### Copper.

*The Mount Lyell Mining and Railway Company Limited.*—The output from all mines was 1,532,074 tons of ore, representing an increase of 177,842 tons compared with the production last year. This increase was obtained from surface mining operations. Underground activities resulted in a further decrease of 4923 tons of ore.

Opencut mining methods at the West Lyell group of mines, including the West Lyell, Prince Lyell, and Lyell Tharsis sections, produced a record tonnage of 1,344,605 tons of ore, being an increase of 182,765 tons in the output of ore for last year.

This increased production has been due to an extension of opencut benches, opening up a new face at the Lyell Tharsis section, additional transport units, and improved transport organisation.

Two new power shovels, each with a capacity of 2½ cubic yards, have been added to the equipment. One of these shovels is powered by diesel engines, while the other is driven by electric power.

Operations at the North Lyell mine have been confined to the removal of a pillar of ore left by stoping. This resulted in a comparatively small production of 7138 tons, a decrease of 14,192 tons in the output for the previous year.

Mining operations were commenced at the Crown Lyell Mine during the first quarter of this year, but, owing to insufficient labour, the work had to be stopped after producing 398 tons of ore.

Underground mining proceeded at full capacity in the Royal Tharsis mine and resulted in 129,929 tons of ore being produced. This is an increase of 37,128 tons for the year.

At the Lyell Comstock mine a small proportion of the ore is won from an opencut and this, combined with that from the underground sections, resulted in a production of 50,004 tons of ore, representing a decrease of 21,159 tons in the output for last year. The mine is only being worked on one shift and some stopes are idle owing to labour shortage. For this reason also no development work has been carried out.

Mill tailings pumped from the mill have continued to be used for filling depleted portions of the underground workings in all mines excepting the Lyell Comstock. This mine is filled with mullock won from an adjacent quarry.

Mining operations were conducted in a safe manner and there were no serious settlements of ground.

The following tabulation represents the disposition of ore production:—

	1941. Tons.	1942. Tons.
North Lyell Mine .....	21,330	7,138
Crown Lyell Mine .....	7,098	398
Lyell Comstock Mine .....	71,163	50,004
Royal Tharsis Mine .....	92,801	129,929
West Lyell Opencut Mines .....	1,161,840	1,344,605
Totals .....	1,354,232	1,532,074

*Reduction Works.*—The concentration plant operating for 358 days 8 hours processed 1,526,051 tons of ore, and recovered 49,926 tons of copper-bearing concentrates and 49,184 tons of pyritic concentrates.

The copper-bearing concentrates were smelted and 34,449 tons of pyritic concentrates were shipped from Regatta Point.

The smelting plant treated the copper-bearing concentrates together with 6012 tons of ore from the North Lyell Mine and 147 tons of copper precipitates derived from mine water. A production of 11,330 tons of blister copper resulted from these operations.

Under normal running the refinery produced 11,225·138 tons of electrolytic copper and recovered a concentrate containing 36,207·920 oz. of silver and 7251·964 oz. of gold.

The planned additions to the concentration plant were completed and have operated up to the designed capacity.

A steel-wool dust filter unit, installed during last year, has proved successful in saving the fine flue dust from the smelters. A second unit has been installed. Preparations are being made to enlarge this plant.

Experiments were conducted with a bulk flotation process in place of the differential method used. This did not prove successful owing to technical troubles, but,

through the alterations made by the addition of new plant, it was found that a higher recovery could be obtained by continuing with the original process.

Reasonable conditions have been maintained in the control of dust arising from crushing operations, and extensive alterations were made at the crude ore bins to improve these conditions.

A large well-equipped crib place has been provided for mill employees.

#### Gold.

The estimated production of gold was 7282·527 oz., valued at £61,173·227, representing a decrease of 4·794 oz. in the output recorded for last year.

Of this quantity, 7251·946 oz. was recovered from the treatment of copper-bearing ores by the Mount Lyell Company.

The remaining 30·581 oz. was derived from alluvial workings in the Jane River district.

Productive activities by the Mount Lyell Company are contained in the following comparative table:—

	1941.		1942.	
	Weight.	£	Weight.	£
Copper (Electrolytic) ...	11,642·104 tons	721,910·450 S.	11,255·138 tons	697,818·562 S.
Silver .....	43,831·950 oz. f.	4,602·294 S.	36,207·920 oz. f.	3,801·832 S.
Gold .....	7,970·790 oz. f.	66,954·636 S.	7,251·946 oz. f.	60,916·346 S.
Pyritic concentrate .....	40,076 tons	50,095·000 A.	34,499 tons	43,061·000 A.
Limestone .....	5,677 tons	1,987·000 A.	5,523 tons	1,783·000 A.
Silica .....	6,544 tons	1,638·000 A.	5,478 tons	1,743·000 A.

S. = Sterling value

A. = Australian currency.

f. = fine.

## APPENDIX VI.

### REPORT OF THE MOUNT CAMERON WATER-RACE BOARD FOR THE YEAR ENDING 31st DECEMBER, 1942.

SIR,

We have the honour to submit the report of the Mount Cameron Water-race Board for the year ending 31st December, 1942.

The production of tin oxide from all activities serviced by the race decreased from 36·2875 to 33·9772 tons. There was a decline of 9·8196 tons by users of water on a royalty scale and an increase of 7·5093 tons by users of water supplied on a fixed scale.

The average number of producers declined from 23 to 15, and revenue was £160 12s. 2d. less than for the previous year. Adjustments in wages and costs of living; pay-roll tax; and additional expenditure on repairs to races, syphons, dams, and culverts were largely responsible for an increase of £157 3s. 6d. in expenditure. Reduced revenue from royalty payments and the increased expenditure resulted in a net loss of £104 3s. 6d.

The Mount Cameron Water Race is a major factor in the stability of the Gladstone community, but altering conditions of alluvial mining, a numerical decline in users and decreasing revenue from production on a royalty basis deteriorated the financial working of the race, the efficient maintenance of which required a staff personnel of a manager and two channel-keepers.

#### Races.

Five miles of the main race, between Cape Portland and Eddystone roads was scrubbed and, with usual patrol work, the race was maintained in good order.

Branch races were scrubbed, cleaned, and maintained in serviceable condition.

#### Syphons.

The flexible section of the concrete syphon, across the Ringarooma River, exhibited no weakness, and constant conditioning enabled the wood section to be held in serviceable condition. It was necessary to reinforce

parts of the wooden trestling and to replace some of the old wood-stave pipes with selected discards from the metal section.

The Amber Creek syphon was dismantled, tarred, and replaced. The metal syphon, near Moore's cottage, continues to develop bottom corrosion, and this condition has necessitated care to preserve a maximum life. The Little Mussel Roe Syphon has been maintained in a satisfactory condition, the No. 6 syphon is in good order, and the old metal syphon near the Fly-by-night workings is serving a useful purpose in preserving an adequate supply of water for domestic purposes.

#### Flumings.

Part of the flume-tunnel, under the main road, collapsed owing to decaying timber. Repairs were undertaken, and all defective sets of timber throughout the tunnel were replaced.

Several small flumes and culverts were repaired as occasion demanded to ensure a serviceable condition throughout the system.

#### Dams.

All dams were maintained in good order, except the intake wall of the main race at the Great Mussel Roe River. The intake wall is not in good order, but is being held in serviceable condition pending necessitous replacement.

We have the honour to be,

Sir,

Your obedient servants,

W. H. WILLIAMS,

Chairman of the Board.

C. G. RYAN,

G. MALLINSON, } Members.

The Hon the Minister for Mines,

## STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1942.

*Rainfall.*

The registered rainfall for the year was as follows:—

Great Mussel Roe	46 inches 69 points
Little Mussel Roe	46 inches 56 points

*Revenue.*

The revenue for the year amounted to £961 14s. 5d., being a decrease of £160 12s. 2d. on that for the previous year.

*Disbursements.*

The expenditure for the year amounted to £1065 17s. 11d., being an increase of £157 3s. 6d. against that of the previous year.

*Statistics.*

The statistics for the year are as follows:—

Average number of claims supplied per week	6.5
Greatest number supplied in any one week	8
Total number of heads supplied under:—	
Fixed or cash scale	292
Royalty or credit scale	2527
Tin ore raised—	tons. cwt. qr. lb.
Under royalty scale	19    18    1    19
Under fixed scale	14    1    0    14
	33    19    2    5

Average number of men employed per week—15.

*Statement of Receipts and Payments of the Mount Cameron Water-race Suspense Account for the Year ended 31st December, 1942.**Receipts.*

	£	s.	d.
Water sold under fixed scale	115	10	0
Water sold under royalty scale	820	4	5
Water sold for domestic purposes	26	0	0
<b>Total receipts</b>	<b>961</b>	<b>14</b>	<b>5</b>
<i>Excess payments over receipts</i>	104	3	6

£1,065 17 11

*Payments.*

	£	s.	d.
Salaries and wages	850	5	11
Travelling expenses	1	5	11
Stationery and printing	4	18	0
Insurance	9	5	4
Stores	5	8	0
Repairs to race, syphons, dams, and culverts	153	17	11
Repairs to channel keepers' cottagers	10	8	8
Repairs to telephones	1	0	0
Child Endowment pay-roll tax	29	8	2

£1,065 17 11