

TASMANIA

REPORT

OF THE

SECRETARY FOR MINES

FOR

YEAR ENDING 31ST DECEMBER

1934

WITH REPORTS OF THE ACTING GOVERNMENT GEOLOGIST, CHEMIST
AND ASSAYER, CHIEF INSPECTOR OF MINES, CHIEF INSPECTOR
OF EXPLOSIVES, INSPECTORS OF MINES, AND THE
MOUNT CAMERON WATER-RACE BOARD

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



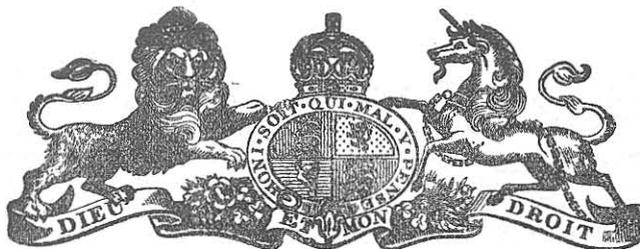
TASMANIA:

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REPORT OF THE SECRETARY FOR MINES.

Department of Mines,
Hobart, 29th September, 1935.

SIR,

I have the honour to present my report on the Department of Mines and the Mining Industry of the State for the year 1934.

GENERAL STATEMENT.

The value of metals and minerals obtained during the year is estimated at £1,037,357, as compared with £1,053,373, being less by £16,016 than last year.

The decrease is due to the interruption of productive work at Mount Lyell, caused through a shortage of water for power, and to some extent to the fall in the price of copper.

The total decrease in value of output of copper, gold, and silver from Mount Lyell Mines amounts to £131,594. Under normal conditions the total value of output from the State would have exceeded that of last year by a considerable margin.

Notwithstanding the comparatively low prices ruling for base metals, a great deal of interest has been manifested in the State's mineral areas generally, particularly in gold.

In addition to local enterprise a considerable amount of capital has been raised outside the State for the development of deposits. The non-metallic industries, which include the manufacture of cement and carbide, are extending each year.

Increases are shown in the number of mining companies registered in the State for the year, as well as in the number of water licences and mining tenements applied for.

In the various districts a great deal of preparatory work has been carried out by companies, syndicates, and parties of men. As some time must elapse before the productive stage is reached, a considerably enhanced output, both in quantity and value, can confidently be anticipated for the ensuing year.

Copper.—The production of copper at the Mount Lyell Mines amounted to 8208 tons, and was less by 2538 tons, the value being £267,116, as against £395,109 in the previous year. The average price of copper was £2 5s. per ton less than in 1933, consequently the total value of output was adversely affected by a suspension of operations as well as by the town market price for the metal. At the Mount Lyell works a small quantity of purchased ore raised in Zeehan district increased the total value of the output to £267,332.

Tin.—The sustained advance in the price of tin was responsible for greater activity in the industry, the average price for the metal being the highest since 1929. The estimated metal content of the output amounted to 952 tons, being slightly less than that of the previous year, and valued at £219,246, exceeding the latter by £29,205.

During the year a number of properties were acquired by financially equipped companies and syndicates, with a view to conducting operations on a comprehensive scale. Some time must elapse before the full productive stage is reached. Detailed information concerning the activities of these are furnished in the appended reports of the inspectors of mines for the respective districts.

Silver and Lead.—A very considerable depreciation, both in output and value, of these metals is recorded. The cause is principally due to the continued low market price for lead. The greater quantity of silver produced is in association with lead ore. A regular source of supply, however, is obtained in the treatment of copper ore at Mount Lyell. The suspension of operations at the latter, for the reason referred to, was responsible to a great extent for the abnormally low output of the metal.

The average price of lead was the lowest on record for many years, if not for all time. Naturally, this fact had a very depressing effect on the very few galena-producing mines, and was directly responsible for the low output. The fact is also reflected in the limited output of silver, for the reason that the greater quantity of the latter is produced from lead ore. Fine silver has shown a fair recovery in price, the average for the year being 1s. 9.2d.—the highest since 1929. A return to normal prices for the metal will ensure a return of activity to mines rendered dormant for economic reasons.

The extensive complex ore-bodies of the Mount Read-Rosebery districts carry a substantial proportion of silver-lead ore. A resumption of productive work on these mines on the scale of operations contemplated will ensure a large and regular output of these metals.

Zinc.—Developmental work on the zinc-lead deposits of the Mount Read and Rosebery districts has been in progress throughout the year. Ore treatment has been held over pending improvement in metal prices, as well as for completion of the Government scheme now in progress for the generation of hydro-electric power for the West Coast fields.

Gold.—A satisfactory increase in both output and valued over that of last year is shown, despite the fact that a considerable drop in yield occurred at the Mount Lyell Mines, for reasons already referred to.

Representatives of capital, as well as the individual miners, have given a good deal of attention to gold-bearing areas. Investigations have not involved the expenditure of money in developmental work on a comprehensive scale. The prospects for the ensuing year are much brighter for a higher yield than for many years past.

Osmiridium.—The market for this metal was inactive, and adds to the disabilities of the industry. The price remained at a comparatively low

figure, the average obtained by producers being £9 11s. 2d. per ounce. The known sources of the metal, so far as alluvial ground is concerned, have been practically exhausted. The rock formations containing the metal offer prospects of affording continued supplies if efficiently exploited.

The quantity raised during the year was 487 oz., valued at £4622.

Wolfram (Tungstic Acid).—The quantity raised amounted to 194 tons, of an estimated value of £27,375, which is a marked increase in both quantity and value on that produced last year. This material is recovered chiefly as a by-product from lode-tin mining operations in the Avoca district. Some attention has been given by a syndicate to the scheelite deposits of King Island. The investigations were confined to boring by diamond drill. Further action involving the proposed exploitation of these deposits will no doubt be governed by the condition and outlook of the market for tungstic acid.

Nickel.—No developments have occurred involving the exploitation of the deposits near Zeehan or elsewhere.

Iron Pyrites.—A marked increase in the quantity raised and exported to the mainland occurred during the year. The only source of this material at present being produced is from the Mount Lyell flotation plant as a by-product. The quantity recovered was 12,030 tons, valued at £1 per ton. From 1924 to 1930 the export of this material ceased. From the latter year to end of 1933 only 2000 tons were exported.

Coal.—The quantity produced was 113,633 tons, valued at £81,262, being less in quantity and value than last year's output. The chief source of supply is the St. Marys district. Limited quantities have been obtained from Catamaran and southern fields. Avoca and Fingal have also contributed small quantities. A number of men find employment in exploiting the narrow seams in the Dulverton area. The greater quantity raised here is used at the Cement Works, Railton.

Limestone.—Increasing quantities of lime-rock were required for use as flux at the Broken Hill Proprietary Company's steel works at Newcastle. The Carbide Works at Electrona absorbed 16,415 tons, and the Mount Lyell Company used 3161 tons as flux in copper-smelting. The total recorded output was 174,757 tons, valued at £44,877. In addition to the above, considerable quantities were used for agricultural purposes, as well as for burning to lime.

Building-stone, Sand, &c.—Large quantities of material are quarried annually, and used for building purposes, road-making, &c. The quantity and estimated value of these products cannot be recorded with any degree of accuracy, and are therefore not included in the statistical tables.

Dolomite.—Experimental operations for the production of magnesium metal, salts, and other compounds were continued by a local company from Smithton dolomite. The results of these experiments are reported to be highly successful. The question of utilising these deposits on a commercial scale is being followed up.

Granite.—Two separate companies were formed to open up quarries on the red granite deposits at Coles Bay. Increasing quantities of the stone are being used locally for structural and monumental purposes. An example of the excellence

of the granite can be seen in the plinth of the recently constructed Commonwealth Bank building. A growing demand for the stone exists on the mainland, to which supplies, as available, are being shipped.

Calcium Carbide.—The works of the Australian Carbide Company at Electrona produced 6924 tons, valued at £138,500, as compared with 4553 tons, valued at £91,077 last year. Limestone used in the manufacture of this material is obtained from the company's quarries at Ida Bay.

Cement.—The cement-manufacturing industry conducted by the Goliath Company at Railton advanced to an output of 45,049 tons, valued at £157,671, being an increase in quantity of 8928 tons, and in value of £12,076, as compared with last year's operations.

AID TO MINING.

Under the provisions of the Aid to Mining Act and Unemployed Relief Act, and owing to the special contributions made by the Commonwealth Government to assist the industry, fifty-one separate grants were made to companies, syndicates, and parties of men, involving a total expenditure of £7613. Of this sum, £642 was expended in sustenance to prospectors, seventy-four parties being assisted. The allowance to prospectors ranged from £1 10s. to £2 10s. per week for periods of four to 13 weeks.

THE AID TO MINING ACT, 1927.

<i>Receipts.</i>		£	s.	d.
Royalty paid by tributers		76	2	8
Sale of plant		16	0	0
Hire of engine		4	14	0
Repairs repaid		20	0	0
Refunds		9	19	1
		£126	15	9

<i>Ore Sales.</i>		£	s.	d.
Amount received from ore sales		1,069	2	10
Which was distributed as follows:—				
Royalty and interest paid				
to State	£76	2	8	
Paid to tributers	993	0	2	
		1,069	2	10

<i>Expenditure.</i>		£	s.	d.	£	s.	d.
Sustenance allowance to prospectors	505	5	0				
Assistance to individuals and companies	697	8	11				
Drilling at Dulverton	301	10	6				
Monetary reward for discovery of osmiridium at Adamsfield	400	0	0				
Research and investigational work	34	5	3				
Miscellaneous expenses	10	19	7				
		1,949	9	3			

THE UNEMPLOYED RELIEF ACT (23 GEO. V. No. 4)—

Sustenance allowance to prospectors	£137	10	0				
Assistance to individuals and companies	307	12	9				
		445	2	9			
Loan to Mount Farrell Mining Company Limited	2,456	17	7				
Miscellaneous-General—Magnet Prospecting Syndicate No Liability (special subsidy)	1,170	0	0				
Commonwealth Grants—Latrobe Shale Oil Company (drilling)	500	0	0				
Tasmanite Shale Oil Company (subsidy)	1,091	11	2				
		£7,613	0	9			

DRILLING.

Diamond Drilling.—No diamond drilling was carried out during the year for the Department. The drill was hired from June to December to the King Island Scheelite Development Company to test the scheelite deposits at Grassy, King Island.

Drilling Shale Beds in Mersey River Valley, Latrobe.—To further test these deposits the drilling campaign was continued.

Boring operations with the Victoria (Calyx) drilling plant commenced on the 24th April on the lease of the Tasmanite Shale Oil Company Limited. The operations were continued until the 8th September, and, in all, six holes were put down, none of which intersected the shale seam.

The details of the holes are as follow:—

	Total Depth.		Bedrock.
	ft.	ins.	
No. 11	149	4	Dolerite
No. 12	251	4	Mica schist
No. 13	61	0	Mica schist
No. 14	145	6	Limestone
No. 15	60	0	Mica schist
No. 16	315	0	Mudstone

The above represents a total depth of nearly 1000 feet.

This drilling has proved the approximate position of the eastern boundary of the shale seam to have a general N. 20° W. trend from a point 5 chains east of the north-eastern corner of W. Dyson's 49-acre purchase lot, at one time 145P-M.

When operations ceased the last hole (No. 16) was still in shale measures at a depth over 300 feet, so that further drilling is necessary to determine the probable northern extension of the shale seams.

Dulverton-Railton Coal Area.—At the request of the miners, drilling with the Victoria (Calyx) drill was undertaken on the "New Bed" coal-field, with the object of obtaining useful data regarding structure, faults, &c., in connection with future development, and to prove the extension of the coal-seams at places most advantageous to the miners concerned.

Boring operations commenced on 17th September, and were continued until the end of the year. In all, seven holes were put down, with the exceptions of Nos. 5 and 7, all of which intersected the coal-seam.

The details of the holes are as follows:—

Hole.	Depth.		Coal Intersected at—		Width of Seam.
	ft.	in.	ft.	in.	
No. 1	254	0	79	8	1 5
No. 2	52	0	48	0	0 3
No. 3	75	0	73	0	1 9
No. 4	73	0	72	1	0 7
No. 5	63	0	....	....	....
No. 6	53	0	51	4	0 10
No. 7	236	8	....	....	....

The drilling campaign has proved sufficient coal for many years' mining, and has been most beneficial to the coal-mining industry of the district.

QUANTITY AND VALUE OF MINERALS.

RETURN showing the Quantity and Value of Minerals Produced in the State of Tasmania during the Year 1934.

Mineral.	Quantity.	Value.
		£
Coal	113,633 (tons)	81,262
Carbide	6924	138,500
Cement	45,049	157,671
Copper	8208·50	267,342
Gold	5622·26 (ozs. f.)	38,930
Lead	1507 (tons)	16,723
Limestone	174,757	44,877
Osmiridium	487·70 (ozs.)	4622
Pyrites.....	12,030 (tons)	12,030
Silver.....	284,687 (ozs.)	27,127
Shale.....	3276 (tons)	1630
Tin.....	952·49	219,246
Talc	5·5	16
Wolfram	194·19	27,375
Total.....	...	£1,087,351

The Electrolytic Zinc Co. of Aust. Ltd. recovered 54,629 tons of Zinc, valued at £982,285, and 172·5888 tons of metallic Cadmium, valued at £24,163, from other than Tasmanian ores, and employed an average of 782 men.

ASBESTOS.

RETURN showing the Quantity and Value of Asbestos produced from 1899 to 1920-34 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
1920-1934	—	—
Total.....	3565·5	£7105

BARYTES.

RETURN showing the Quantity and Value of Barytes produced during the Years 1916 to 1934 inclusive.

Year.	Quantity.	Value.
	Tons.	£
1916.....	83	359
1917.....	52	234
1918.....	217	977
1919.....	399	1160
1920.....	1048	4163
1921-1924	—	—
1925.....	3·5	16
1926-1928	—	—
1929.....	9·5	24
1930-1932.....	—	—
1933.....	5	15
1934.....	—	—
Total.....	1817	£6948

BISMUTH.

RETURN showing the Quantity and Value of Bismuth produced from 1904 to 1934 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	1098
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	—	—
Total.....	79·119	£25,788

CARBIDE.

The Australian Commonwealth Carbide Company Limited continued operations, and produced 6924 tons of carbide, valued at £138,486.

The quantity of limestone quarried for the year amounted to 16,415 tons. The works at Electrona employed 150 men, the limestone quarries at Ida Bay and transportation services gave employment to 40 men, and, in addition, men were engaged by contract in supplying case timber.

RETURN showing the Quantity and Value of Carbide produced during the Years 1922 to 1934.

Year.	Quantity.	Value.
	Tons.	£
1922	4512	135,509
1923	3236	64,720
1924	3305	65,660
1925	2934	60,047
1926	3420	68,400
1927	2072	34,896
1928	3829	68,877
1929	3434	53,841
1930	3297	51,437
1931	3903	67,298
1932	4049	59,495
1933	4553	91,077
1934	6924	138,500
Total.....	49,468	£959,757

CEMENT.

(Works at Railton.)

RETURN showing the Quantity and Value of Cement produced during the Years 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, and 1934.

Year.	Quantity.	Value.
	Tons.	£
1924	21,026	105,130
1925	32,574	162,870
1926	33,611	166,447
1927	38,690	176,779
1928	44,799	189,380
1929	41,798	175,613
1930	37,412	115,520
1931	27,508	96,340
1932	32,231	106,809
1933	36,121	126,424
1934	45,049	157,671
Total.....	390,819	£1,578,983

COAL.

RETURN showing the Quantity and Value of Coal raised from 1880 to 1934.

Year.	Quantity.	Value.
	Tons.	£
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
Total.....	3,265,583	£2,553,408

COPPER.

The production for the year was 8208·5 tons, valued at £267,342.

RETURN showing the Quantity and Value of Copper in Blister Copper and Copper Ore during the Years 1919 to 1934 inclusive.

Year.	In Blister Copper.		In Copper Ore.		Total	
	Q'ty.	Value.	Q'ty.	Value.	Q'ty.	Value.
	Tons.	£	Tons.	£	Tons.	£
1919...	5014	503,977	13	984	5027	504,961
1920...	4791	528,177	·75	60	4791·75	528,237
1921...	6171	462,876	9·843	287	6180·843	463,163
1922...	5616	391,535	—	—	5616	391,535
1923...	6063	435,282	1·7	131	6064·7	435,413
1924...	6698	457,386	—	—	6698	457,386
1925...	6539	436,661	—	—	6539	436,661
1926...	6915	454,854	—	—	6915	454,854
1927...	5811	362,988	—	—	5811	362,988
1928...	6421	444,802	—	—	6421	444,802
1929...	8689	740,985	—	—	8689	740,985
1930...	9940	620,578	—	—	9940	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...	8202	267,116	6·5	216	8208·5	267,332
Total	110,432·1	7,318,281	39·99	1971	118,472·09	7,320,252

The Mount Lyell Mining and Railway Company Limited:
Return for the Calendar Year 1934.

Ore and metal-bearing material smelted:—

Source of Material.	Tons (Dry).
Ore:—From the Company's North Lyell Mine	15,574
Concentrates:—From the Company's North Lyell Mine, Lyell Comstock Mine, Royal Tharsis Mine, and Crown Lyell Mine ore	34,207
Purchased ore (from Zeehan District)	27
Total	49,808

Limestone delivered to works (tons) 3,161

Pyritic concentrates shipped from Regatta Point (tons), (approximate value, £12,032) 12,032

Blister copper produced:—8,280 tons, containing:

Copper (tons)	8,208	} Approximate value, £308,339
Silver (ozs.)	89,941	
Gold (ozs.)	4,651	

Average number of men employed—

Mining Department—At the Company's		
North Lyell Mine	348	
Ditto, Lyell Comstock Mine	200	
Ditto, Royal Tharsis Mine	99	
Ditto, Crown Lyell Mine	112	
Ditto, Lyell Tharsis	19	
Ditto, West Lyell	21	
Miscellaneous	106	
	905	
Reduction Works Department (including Lake Margaret)		477
Railway Department—Mount Lyell Railway		87
Total	1,469	

Copper produced from the inception of the Company to the 31st December, 1934, 277,022 tons (fine).

Silver produced from the inception of the Company to the 31st December, 1934, 14,688,406 oz. (fine).

Gold produced from the inception of the Company to the 31st December, 1934, 416,620 oz. (fine).

GOLD.

The quantity won was 5622·26 oz. fine, valued at £38,930, as compared with 6672·74 oz., valued at £41,783, for 1933.

RETURN showing the Quantity and Value of Gold won from 1880 to 1934.

Year.	Quantity.	Value.
	Oz.	£
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	15,041
1926	4,222·748	17,936
1927	4860·7	20,646
1928	3603·43	15,306
1929	5596·88	23,772
1930	4466·61	18,976
1931	4759·59	22,118
1932	5937·17	34,943
1933	6672·74	41,783
1934	5622·26	38,930
Total	1,937,947·446	£7,814,132

IRON PYRITES.

The quantity won was 12,030 tons, valued at £12,030.

RETURN showing the Quantity and Value of Iron Pyrites produced during the Years 1915 to 1934.

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
Total	82,601·973	£107,847

LEAD.

The output was 1507 tons, valued at £16,723, as compared with 2644 tons, valued at £30,987, for 1933.

RETURN showing the Quantity and Value of Lead included in Silver-Lead during the Years 1919 to 1934.

Year.	Quantity.	Value.
	Tons.	£
1919.....	2357·142	64,403
1920.....	3855·639	142,268
1921.....	1434·794	32,241
1922.....	4925·880	118,257
1923.....	4784·057	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	138,793
1930.....	4237·84	77,590
1931.....	2189·47	29,024
1932.....	2694·06	32,637
1933.....	2644	30,987
1934.....	1507	16,723
Total.....	62,960·462	£1,582,984

OCHRE.

RETURN showing the Quantity and Value of Ochre produced during the Years 1918 to 1934 inclusive.

Year.	Quantity.	Value.
	Tons.	£
1918.....	100	200
1919.....	—	—
1920.....	—	—
1921.....	14	56
1922.....	—	—
1923.....	—	—
1924.....	20	50
1925.....	—	—
1926.....	38	69
1927-1934.....	—	—
Total.....	172	£375

LIMESTONE.

The quantity won for the year was 174,757 tons, valued at £44,877.

RETURN showing the Quantity and Value of Limestone produced during the Years 1923 to 1934.

Year.	Quantity.	Value.
	Tons.	£
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.....	174,757	44,877
Total.....	1,391,940	£1,100,594

OSMIRIDIUM.

The quantity of metal won during the year was 487·7 oz., valued at £4622, as compared with 548 oz., valued at £4843, for 1933.

RETURN showing the Quantity and Value of Osmiridium produced during the Years 1910 to 1934 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	4843
1934.....	487·7	4622
Total.....	27,711·674	£607,716

NICKEL.

RETURN showing the Quantity and Value of Nickel produced from 1927 to 1934 inclusive.

Year.	Quantity.	Value.
	Tons.	£
1927.....	86·2	14,656
1928.....	10	1697
1929.....	85·44	14,765
1930.....	117·6	1999
1931.....	0·2	45
1932.....	0·55	136
1933.....	8·65	1948
1934.....	—	—
Total.....	308·64	£35,246

The following table gives particulars of osmium won from Adamsfield since its discovery up to 31st December, 1934:—

Period.	Quantity.			Value.		
	Oz.	dwt.	gr.	£	s.	d.
Quarter ending—						
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
Total.....	12,498	4	13	£251,284	4	7

SCHEELITE.

RETURN showing the Quantity and Value of Scheelite produced during the Years 1917 to 1934 inclusive.

Year.	Quantity.		Value.
	Tons.	£	
1917.....	69	12,130	
1918.....	216	39,252	
1919.....	198·98	43,181	
1920.....	105·09	17,905	
1921-1934.....	—	—	
Total.....	589·07	£112,468	

SHALE OIL.

Tasmanite Shale Oil Company.—The plant was operated by the syndicate till the end of January, 1935.

The shale output from July, 1934, to January, 1935, was 1990 tons; the oil yield for the same period being 37,905 gallons.

The total output of the syndicate was 4583 tons of shale, for an oil yield of 89,000 gallons. It should be noted that the figures are no reflection on shale quality, as the scrubbing plant was not in operation, and insufficient funds were available to maintain plant efficiency at a high figure.

SHALE.

The output was 3276 tons, valued at £1630.

RETURN showing the Quantity and Value of Shale produced during the Years 1910 to 1934.

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.....	2595	1297	
1929.....	4299	2982	
1930.....	5428	3490	
1931.....	1402	600	
1932.....	1097	1074	
1933.....	3401	1483	
1934.....	3276	1630	
Total.....	34,275	£23,895	

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
	Total	357,115

SILVER.

The output was 284,687 oz. (fine), valued at £27,127, as compared with 489,330 oz., valued at £39,808, for 1933.

RETURN showing the Quantity and Value of Silver contained in Silver-lead and Blister Copper during the Years 1919 to 1934.

Year	In Silver-Lead.		In Blister Copper.		Total.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Oz.	£	Oz.	£	Oz.	£
1919	296,719·27	71,831	228,624	53,733	525,343·27	125,564
1920	453,411	118,898	169,948	47,869	623,359	166,767
1921	165,637	27,181	183,021	30,395	348,658	57,576
1922	674,886	104,926	119,699	18,511	794,585	123,437
1923	516,073·61	73,742	122,528	17,597	638,601·61	91,339
1924	494,782	75,598	147,376	22,439	642,158	97,837
1925	597,012·67	86,283	133,181	19,226	730,193·67	105,509
1926	632,066	80,597	134,587	17,394	766,653	97,991
1927	640,575	75,135	101,207	11,889	741,782	87,024
1928	564,156	66,386	105,270	12,515	669,426	78,901
1929	714,930	78,252	149,424	16,308	864,354	94,560
1930	528,641	41,485	182,978	14,583	711,619	56,068
1931	242,950	16,104	148,782	9,650	391,732	25,754
1932	301,854	24,399	161,634	12,905	463,488	37,304
1933	361,768	29,394	127,562	10,414	489,330	39,808
1934	194,747	18,401	89,940	8,726	284,687	27,127
Total	7,380,208·55	988,411	2,305,761	324,155	9,685,969·55	1,312,566

TIN.

The output was 952·49 tons, valued at £219,246, as compared with 957 tons, valued at £190,041, for 1933.

RETURN showing the Quantity and Value of Tin exported from Tasmania from 1880 to 1904 (compiled from Customs Returns only), Tin Ore produced during the Years 1905 to 1918 inclusive, and Metallic Tin produced during the Years 1919 to 1934.

Year.	Quantity.		Value.
	Tons.	£	
1880 to 1904 inclusive	76,708·4	7,167,564	
1905	3891·5	362,670	
1906	4472·75	557,266	
1907	4342·75	501,681	
1908	4520·8	421,580	
1909	4511·2	418,165	
1910	3701·01	399,393	
1911	3953·05	513,500	
1912	3713·825	543,103	
1913	4010·41	531,983	
1914	2572·713	259,300	
1915	2599·234	292,306	
1916	2854·636	350,852	
1917	2637·337	427,917	
1918	2256·203	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	
Total	141,291·216	£16,741,471	

* Metallic Tin.

TALC.

The output was 5·5 tons, valued at £16.

RETURN showing Quantity and Value of Talc produced during the Years 1928 to 1934 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	
Total	102·6	307	

WOLFRAM.

RETURN showing the Quantity and Value of Wolfram produced during the Years 1919 to 1934 inclusive.

Year.	Quantity.		Value.
	Tons.	£	
1899 to 1903 inclusive	57·25	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	9886	
1928	176·15	12,094	
1929	151·86	18,358	
1930	112·6	12,216	
1931	0·29	16	
1932	—	—	
1933	104	7,301	
1934	194·19	27,375	
Total	2562·742	£289,421	

ZINC.

No zinc was produced from Tasmanian ores during the year.

RETURN showing the Quantity and Value of Zinc produced during the Years 1919 to 1934 inclusive.

Year.	Quantity.		Value.
	Tons.	£	
1919	285	13,110	
1920	9·3	334	
1921-1923	—	—	
1924	2748·75	90,485	
1925	3112·69	110,691	
1926	5377·75	183,362	
1927	6326·2	181,242	
1928	7112	188,691	
1929	6997	185,964	
1930	943	19,322	
1931-1932-1933-1934	—	—	
Total	32,911·69	£973,301	

Electrolytic Zinc Company of Australia Ltd.—
Return for calendar year 1934:—

	Tons.
Production of slab zinc	54,629
Production of metallic cadmium	172,588

The above is from ores other than Tasmanian.
The average number of men employed at Risdon was 782.

West Coast Division.—There was no productive work done on the West Coast properties during the year.

The average number of men employed was:—

Surface	26
Underground	17
Total	43

**VALUE OF METALS AND MINERALS
RAISED.**

RETURN showing Value of Metals and Minerals Raised in Tasmania from 1880 to 1934 inclusive.

Mineral or Metal.	Value.
	£
Asbestos	7105
Barytes	6948
Bismuth	25,788
Cadmium.....	20,914
Carbide	959,757
Cement.....	1,578,983
Coal	2,553,408
Copper (Blister) to 1918 (now shown under Silver and Copper).....	13,778,527
Copper Matte	133,736
Copper Ore to 1918;(now under Copper) ...	577,873
Copper (from 1919)	7,320,262
Gold	7,814,132
Ilmenite	1256
Iron Ore	25,701
Iron Pyrites	107,847
Lead (from 1919)	1,582,984
Limestone.....	1,100,594
Nickel	35,246
Ochre	375
Osmiridium	607,716
Scheelite	112,468
Shale.....	23,893
Silver-Lead to 1918 (now shown as Silver and Lead).....	6,429,291
Silver	1,312,566
Talc.....	307
Tin	16,741,471
Wolfram	289,421
Zinc	973,201
Unenumerated prior to 1894	31,988
Total	£64,153,758

STATISTICS OF PRODUCTION.

RETURN showing the Annual Value of Mineral Products for the State of Tasmania from 1880 to 1934.

Year.	Value.	Year.	Value.
	£		£
1880	554,031	1909.....	1,574,995
1881	602,723	1910	1,432,193
1882	556,306	1911	1,349,497
1883	560,873	1912.....	1,493,502
1884	468,302	1913.....	1,415,700
1885	518,885	1914.....	1,007,038
1886	489,966	1915.....	1,225,575
1887	593,256	1916.....	1,521,050
1888	616,733	1917.....	1,582,322
1889	504,718	1918.....	1,597,694
1890	444,210	1919.....	1,301,090
1891	528,388	1920.....	1,421,104
1892	526,909	1921.....	822,851
1893	627,909	1922.....	1,013,415
1894	732,764	1923.....	1,219,456
1895	575,692	1924.....	1,496,804
1896	662,058	1925.....	1,700,861
1897	1,006,140	1926.....	1,808,847
1898	1,071,084	1927.....	1,621,027
1899	1,660,622	1928.....	1,593,828
1900	1,888,695	1929.....	1,790,653
1901	1,763,896	1930.....	1,270,114
1902	1,378,406	1931	894,986
1903	1,354,044	1932.....	897,168
1904	1,379,204	1933.....	1,053,373
1905	1,729,129	1934.....	1,037,351
1906	2,257,147	Unenumerated prior to 1894	31,988
1907	2,277,159		
1908	1,650,027		
		Total.....	£64,153,758

STATISTICS OF MINING COMPANIES.

RETURN showing the Amounts Paid in Dividends by Mining Companies during the Year ending 31st December, 1934.

Mines.	Dividends.
	£
Copper .....	...
Gold .....	...
Tin	20,562
Silver .....	...
Coal.....	1807
Total	£22,369

RETURN showing the Total Area of Land and Number of Sluiceways of Water Applied for during the Year ending 31st December, 1934.

Mineral.	Number.	Sluiceways.	Area.
			Acres.
Asbestos	1	...	80
Bismuth	1	...	40
Barytes .....	...	...	...
Coal.....	3	...	71
Dolomite .....	...	...	...
Granite .....	...	...	...
Gold	69	...	1428
Gravel .....	...	...	...
Minerals	7	...	211
Phosphate Rock .....	...	...	...
Scheelite	2	...	271
Shale	1	...	15
Silver	2	...	40
Stone	3	...	27
Tin.....	132	...	2335
Machinery Sites and Mining Easements ...	11	...	44
Water-rights and Dam Sites	76	299	333
Licences to search for Coal .....	...	...	...
Total.....	309	299	4954

RETURN showing Total Number and Area of Leases and Licences Issued during the Year ending 31st December, 1934.

Mineral.	Leases.	Sluiceways.	Area.
			Acres.
Asbestos	1	...	80
Copper	1	...	231
Copper, Nickel	1	...	157
Coal	3	...	96
Gold	49	...	875
Gravel	1	...	40
Sand	1	...	25
Scheelite	2	...	271
Silver-Lead	3	...	80
Stone	2	...	17
Tin	131	...	2555
Wolfram	2	...	65
Water-rights and Dam Sites	57	275	417
Licences to Search for Coal and Oil .....	...	...	...
Mining Easements and Machinery Sites	19	...	428
Total	273	275	5337

RETURN showing the Total Number of Leases and Licences in Force on the 31st December, 1934.

Mineral.	Number.	Number of Sluiceways.	Area.
			Acres.
Asbestos	2	...	81
Barytes	1	...	10
Bismuth	1	...	40
Coal	27	...	6061
Clay	3	...	70
Copper, Nickel	1	...	157
Dolomite	1	...	129
Granite	5	...	88
Gold	167	...	3987
Iron	1	...	5
Limestone	5	...	245
Molybdenum	1	...	80
Minerals	61	...	6244
Marble	1	...	10
Osmiridium	3	...	30
Scheelite	2	...	271
Phosphate	1	...	10
Silica .....	...	...	...
Silver	7	...	307
Stone	3	...	79
Shell Lime .....	...	...	...
Shale	4	...	1605
Tin	364	...	11,574
Wolfram	1	...	59
Mining Easements	94	...	578
Licence to Search	2	...	3670
Water Licences	403	1760	2015
Total	1161	1760	37,405

RETURN showing the Mining Companies Registered during the Year ending 31st December, 1934.

Number of Companies.	Capital.
7	£80,100

In addition to the above, 5 Agents for Foreign Companies and 1 Syndicate under Part VA. of the Mining Companies Amendment Act, 4 Geo. V. No. 44, were registered.

RETURN showing the Average Number of Miners Employed during the Year ending 31st December, 1934.

Division.	Number.
Northern and Southern	1303
North-Eastern	481
Eastern	746
North-Western	563
Western	1750
	4843

RETURN showing the Total Amount of Rents, Fees, &c., Received by the Mines Department during the Year ending 31st December, 1934.

Head of Revenue.	Amount.
	£ s. d.
Rent of Auriferous and Mineral Lands	8748 14 3
Fees, Auriferous and Mineral Lands	1073 0 1
Survey Fees	1686 3 1
Fees under the Explosives and Inflammable Liquids Act	1344 8 7
Total	£12,852 6 0

RETURN showing the Average Number of Persons Engaged in Mining during the Years 1880 to 1934.

Year.	Number.	Year.	Number.
1880	1653	1908	6466
1881	3156	1909	6054
1882	4098	1910	5770
1883	3818	1911	5247
1884	2972	1912	5566
1885	2783	1913	6107
1886	2681	1914	4741
1887	3961	1915	3908
1888	2989	1916	3864
1889	3141	1917	4050
1890	2868	1918	4278
1891	3219	1919	4413
1892	3295	1920	5364
1893	3403	1921	4011
1894	3433	1922	3835
1895	4062	1923	4785
1896	4350	1924	5264
1897	4510	1925	5110
1898	6052	1926	5309
1899	6622	1927	5044
1900	7023	1928	5170
1901	6923	1929	4986
1902	5934	1930	4606
1903	6017	1931	4391
1904	6194	1932	4605
1905	6581	1933	4510
1906	7005	1934	4843
1907	7516		

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 1934, inclusive.

Year.	Amount.	Year.	Amount.
	£ s. d.		£ s. d.
1882.....	23,077 1 9	1908.....	20,311 3 0
1883.....	15,439 14 5	1909.....	22,804 1 5
1884.....	6981 11 10	1910.....	22,221 18 0
1885.....	11,070 5 7	1911.....	20,556 15 10
1886.....	12,523 10 4	1912.....	17,639 19 11
1887.....	14,611 11 5	1913.....	19,410 17 8
1888.....	23,502 8 4	1914.....	14,087 0 6
1889.....	17,254 9 0	1915.....	17,679 3 6
1890.....	26,955 4 9	1916.....	14,678 19 10
1891.....	37,829 16 5	1917.....	14,669 7 2
1892.....	17,568 18 4	1918.....	17,833 14 9
1893.....	16,971 9 2	1919.....	15,888 7 7
1894.....	16,732 7 7	1920.....	16,767 11 6
1895.....	15,323 1 9	1921.....	11,248 14 11
1896.....	20,901 13 2	1922.....	14,184 7 3
1897.....	25,631 0 3	1923.....	13,224 11 9
1898.....	33,661 13 9	1924.....	14,678 13 11
1899.....	24,696 10 5	1925.....	14,229 8 7
1900.....	28,380 11 10	1926.....	15,163 15 7
1901.....	21,569 5 2	1927.....	16,887 9 9
1902.....	19,471 0 1	1928.....	14,313 12 0
1903.....	17,776 14 3	1929.....	14,665 10 7
1903, 1 July to 31 Dec.	14,758 17 1	1930.....	11,166 7 2
1904.....	16,631 8 2	1931.....	11,520 1 10
1905, Jan. to Dec.	20,208 17 0	1932.....	10,097 18 6
1906.....	24,136 12 5	1933.....	9459 6 9
1907.....	24,794 7 7	1934.....	11,166 2 11

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, 1922 to 1934, inclusive.

Nature of Lease.	In force on 31st Dec., 1922.		In force on 31st Dec., 1923.		In force on 31st Dec., 1924.		In force on 31st Dec., 1925.		In force on 31st Dec., 1926.		In force on 31st Dec., 1927.		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.		
	No.	Area	No.																								
For Minerals, Silver, Tin, &c.	716	Acres. 26,459	614	Acres. 21,880	460	Acres. 23,308	532	Acres. 23,588	541	Acres. 22,129	642	Acres. 25,604	728	Acres. 28,103	652	Acres. 27,052	418	Acres. 18,321	379	Acres. 17,101	284	Acres. 13,320	326	Acres. 16,734	444	Acres. 18,716	
For Coal, Slate, Shale, &c.	73	16,809	66	16,053	27	8901	35	9922	49	13,136	39	11,077	52	15,407	36	11,022	32	9960	25	7223	32	6104	39	7495	51	8439	
For Gold Dredging Claims	127	2424	108	1687	91	1829	70	1340	42	870	38	749	40	830	36	746	40	830	57	999	77	1987	128	3879	167	3987	
Mining Easements	36	399	33	369	20	289	20	195	42	363	41	502	52	626	60	756	30	353	—	—	—	—	—	—	—	—	
Machinery Sites	87	607	81	606	77	592	77	570	68	494	77	484	77	475	55	409	73	504	77	434	48	316	79	475	94	578	
Licences to search for Coal or Oil	31	123	30	124	26	115	27	112	25	150	21	110	29	169	25	171	18	117	20	209	18	120	17	119	17	119	
Water-rights, Mineral and Gold	73	137,692	36	34,761	21	38,528	19	14,130	8	10,669	4	5090	7	7200	9	10,844	3	1080	1	800	1	320	2	796	2	3670	
	493	3002 & 1814 sluice-heads	435	2147 & 1612 sluice-heads	338	1990 & 1520 sluice-heads	371	2167 & 1604 sluice-heads	360	2190 & 1591 sluice-heads	394	2246 & 1748 sluice-heads	371	1552 & 1581 sluice-heads	486	2359 & 2053 sluice-heads	364	2095 & 1558 sluice-heads	388	2078 & 1546 sluice-heads	391	2448 & 1473 sluice-heads	400	1905 & 1650 sluice-heads	403	2015 & 1760 sluice-heads	

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

	Average for 1922.	Average for 1923.	Average for 1924.	Average for 1925.	Average for 1926.	Average for 1927.	Average for 1928.	Average for 1929.	Average for 1930.	Average for 1931.	Average for 1932.	Average for 1933.	Average for 1934.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Copper--Standard, spot: per ton	62 3 6	66 7 4	63 4 3	61 9 7	58 0 8	59 5 8	72 2 10	75 19 7	54 3 7	38 7 9	31 14 7	32 11 4	30 6 4
Lead--Soft Foreign: per ton	23 14 10	25 19 4	33 13 11	35 17 3	31 2 2	21 9 6	22 13 6	23 4 11	18 3 1	13 0 7	12 0 9	11 16 1	11 1 0
Spelter: per ton	29 14 2	32 18 4	33 12 0	36 5 0	34 2 8	26 6 1	25 14 9	24 15 1	16 16 9	12 9 0	13 13 10	15 14 11	13 15 6
Tin--Standard, spot: per ton	159 10 9	191 7 5	248 17 4	261 1 8	291 3 0	254 17 7	216 6 6	263 18 10	141 19 1	118 9 1	135 18 10	194 13 4	230 7 5
Silver--Standard, spot: per oz.	s. d. 2 10 4	s. d. 2 8 37	s. d. 2 9 97	s. d. 2 8	s. d. 2 4 2	s. d. 2 2 38	s. d. 2 2 15	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
Osmiridium: per oz.....	£ s. d. 28 6 7	£ s. d. 27 10 4	...	...	£ s. d. 11 13 4	£ s. d. 21 16 5	£ s. d. 25 9 0	£ 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
Wolfram: per ton.....	70 0 0	65 0 0	...	...	70 0 0	61 10 0	104 5 0	144 5 0	105 0 0	64 0 0	62 16 0	81 2 6	94 0 0
Nickel: per ton.....	...	...	...	...	...	...	...	171 0 0	170 0 0	188 15 0	234 7 6	235 0 0	225 0 0

MINES DRAFTING BRANCH.

The number of working plans in use and which are all kept up to date is 208, as compared with 206 in 1933.

Instructions issued to surveyors	286
Diagrams received from surveyors	177
Diagrams drawn on leases	524
Consolidated and other diagrams drawn	34
Lithographs entered to date	201
Various tracings prepared	37
Tracings for Launceston	239
Manuscripts entered to date	25
New manuscript plans drawn	2
Geological colour work (eight printings)	3
Underground surveys examined	37

MINING MANAGER'S EXAMINATION.

One colliery manager's certificate was granted under Regulation 13. There were no other applications for certificates, therefore no examination was held.

STAFF.

Mr. E. E. Broadhurst, M.Sc., who during the period of leave granted to Field Geologist F. J. Finucane was temporarily engaged in that position, resigned from the service in March.

Mr. F. J. Finucane, M.Sc., was granted leave of absence for one year, from 26th June, 1933, and resigned from the Department at the end of that term.

The Government Geologist (Mr. P. B. Nye, M.Sc., B.M.E.) was granted special leave for one year, from 21st September, to accept the position

of chief executive officer of an aerial and geological survey being conducted jointly by the Commonwealth, Western Australian, and Queensland Governments in Northern Australia.

Mr. E. Rider, who had carried out the duties of Magazine-keeper and Inspector of Explosives since 1st August, 1923, retired on 5th January, 1934, and was succeeded by Mr. E. W. J. Dean, who was appointed as from 12th May, 1934.

Mr. W. F. Evans was appointed Assistant Chemist and Assayer (on probation) as from 12th May, 1934.

Mr. I. E. Corby was appointed Junior Clerk as from 21st July, 1934.

Mr. Douglas Wilson, who was appointed Inspector of Mines, Queenstown, as from 12th August, 1932, resigned on 29th September, 1934, and was succeeded by Mr. J. F. Shaw, whose appointment dated from 5th October, 1934.

Miss G. Smith, Typist, who was appointed on 27th March, 1928, resigned on 2nd October, 1934.

CONCLUSION.

I desire to express my appreciation of the loyal and efficient help rendered by all officers of the Department, including the Mining Drafting Branch, and to the wardens and registrars of mines of the respective districts.

I have the honour to be,

Sir,

Your obedient servant,

J. B. SCOTT,
Secretary for Mines.

APPENDIX I.

REPORT OF ACTING GOVERNMENT GEOLOGIST FOR 1934.

The Acting Government Geologist (Mr. F. BLAKE) reports:—

Field Work.

The geological survey of the goldfields of the State was continued during the year, and examinations were completed of Warrentinna, Forester, Lyndhurst, Bell Mount, Stormont, and Black Bluff areas.

A geological examination and surveys of Mount Lyell copper-field were undertaken by the complete staff.

The following list includes all field surveys, &c., which were carried out during the year and the officers by whom they were conducted:—

- (1) Warrentinna goldfield, by F. Blake.
- (2) Forester goldfield, by F. Blake.
- (3) Lyndhurst goldfield, by F. Blake.
- (4) Stormont, Bell Mount, and Black Bluff districts, by E. Broadhurst.
- (5) North end of Blue Tier, Beaconsfield, by P. B. Nye and F. Blake.
- (6) Alluvial gold deposits at Beaconsfield, by P. B. Nye and F. Blake.
- (7) Dam site on Derwent River, by P. B. Nye.
- (8) Strathblane Coal Mine, by P. B. Nye.
- (9) Little Wilson River and Mount Ramsay districts, by Q. J. Henderson.
- (10) King Island scheelite deposits, by P. B. Nye.
- (11) Mount Rex Mine, by P. B. Nye.
- (12) Mount Lyell district, by P. B. Nye, F. Blake, and Q. J. Henderson.
- (13) Dam site at Lake St. Clair, by P. B. Nye.
- (14) Dolomite area at Smithton, by F. Blake.
- (15) Gold at Myrtlebank, by F. Blake.
- (16) Meadowbanks Estate, Glenora, by F. Blake.

Reports.

In connection with the above and other examinations, committees, &c., the following reports were prepared:—

- (1) Prospect at North End of Blue Tier, Beaconsfield, by P. B. Nye and F. Blake.
- (2) Alluvial Gold Deposits in Brandy Creek and the Proposal to bring in a Water-race, by P. B. Nye and F. Blake.
- (3) Proposed Dam Site on Derwent River, by P. B. Nye.
- (4) Esperance or Strathblane Coal Mine, by P. B. Nye.
- (5) Little Wilson River and Mount Ramsay Alluvial Tin Prospects, by Q. J. Henderson.
- (6) Quarterly Review of Gold-mining Industry of Tasmania for Quarter ending 31st December, 1933, by P. B. Nye.
- (7) Lefroy and Back Creek Districts, by E. Broadhurst.
- (8) Stormont, Bell Mount, and Black Bluff Districts, by E. Broadhurst.
- (9) Beryllium Ores in Tasmania, by P. B. Nye.
- (10) King Island Scheelite Deposits, and Boring Campaign to Test Same, by P. B. Nye.
- (11) Mount Rex Mine, by P. B. Nye.
- (12) Review of Gold-mining Industry for Quarter ending 31st March, 1934, by P. B. Nye.
- (13) Physiography of Tasmania, by P. B. Nye.
- (14) Tasmanian Shale Oil Committee (1934), by P. B. Nye (Chairman).
- (15) Structural and Land Form Committee, by P. B. Nye.
- (16) Mineral Deposits of Tasmania, by P. B. Nye.
- (17) Sampling Murray's Alluvial Gold Prospect, Beaconsfield, by F. Blake.
- (18) Granite and Sandstone in Tasmania, by F. Blake.
- (19) General Geology of Mount Lyell District, by P. B. Nye, F. Blake, and Q. J. Henderson.
- (20) Economic Geology of Mount Lyell District, by P. B. Nye.
- (21) Proposed Dam Site at Lake St. Clair, by P. B. Nye.
- (22) Testing of Dolomite Lease at Smithton, by F. Blake.
- (23) Review of Gold-mining Industry of Tasmania for Quarter ending 30th June, 1934, by F. Blake.

- (24) Eastburn and Barwick Prospect, Myrtlebank, by F. Blake.
- (25) Review of Gold-mining Industry of Tasmania for Quarter ending 30th September, 1934, by F. Blake.
- (26) Portion of Meadowbanks Estate, Glenora, by F. Blake.

Publications.

The report on the Smithton district was printed and issued as Geological Survey Bulletin No. 41, together with the maps of the north-east and south-east quarter-sheets.

The following reports, with accompanying geological maps, were submitted for publication, and will be issued during 1935 as Bulletins Nos. 42 and 43 respectively:—

- Lefroy and Back Creek Goldfields, by E. Broadhurst, M.Sc.
- Mathinna and Tower Hill Goldfields, by K. J. Finucane, M.Sc.

The report of the "Geology and Ore-deposits of the Rosebery District" is ready for publication, but the map and plans are not yet complete.

Staff.

Mr. K. J. Finucane, whose period of 12 months' leave of absence was completed on 25th June, did not return to Tasmania, but tendered his resignation from the Mines Department as from that date. Mr. E. Broadhurst, who had been appointed temporarily in the absence of Mr. K. J. Finucane, had already left the State on 16th March to take up a position in Victoria.

The Government Geologist, Mr. P. B. Nye, was granted 12 months' leave of absence from 6th September to enable him to undertake the duties of Executive Officer to the Northern Geological, Geophysical, and Aerial Survey of Australia, controlled by a committee representative of the Commonwealth, Western Australian, and Queensland Governments.

On 15th October Mr. F. Blake was appointed to carry out the duties of Government Geologist during the absence of Mr. P. B. Nye.

Interpretation of the Geological Record of the State.

The following modifications are necessary as the result of the work during 1934:—

Palæozoic.

Field work in Warrentinna district disclosed several poorly preserved fossil plant remains in weathered slates of the Mathinna series near Mara Station. These were submitted to Mr. R. A. Keble, Palæontologist to the National Museum, Melbourne, for identification, who considered the fossils were remarkably like psilophytales as found in Silurian rocks in Victoria, and which have never been found in any part of the world lower than the Silurian. Although no previous fossils have been identified in the Mathinna series of slates and quartzites, it has been the practice of late years to refer the rocks to the Cambro-Ordovician period. When better preserved fossils, which can be more definitely identified, can be obtained it may be necessary to place the Mathinna series in the Silurian period, but without further evidence this cannot be attempted.

Devonian Igneous Rocks.

Intensive surveys of the Mount Lyell district established the fact that the complex suite of porphyries in that region are intrusive into Silurian sedimentary rocks. The porphyry group is divided into four main types, with transitional changes from one type to another, proving that they represent differentiation products of the one parent magma.

The field work disclosed that the Lyell schists are derived from the porphyries. The alteration of the porphyries to schists was caused mainly by earth-movements, which deformed them, but the final and most complete alteration was due to the action of mineralising solutions.

Drilling Campaign at Latrobe.

The Commonwealth Government made available a further sum of £500 to continue testing the oil shale deposits at Latrobe. Six holes were bored, with a total depth of approximately 1000 feet, and not one of these holes intersected Tasmanite shale. Three of them bottomed on schist at shallow depths, and two others on dolerite and limestone respectively. When operations ceased the last bore had reached a depth of 315 feet, and was still in mudstone. These bores serve to indicate the approximate eastern boundary of the shale. No additional shale reserves were proved.

Tasmanian Shale Oil Inquiry Committee.

During the year this committee, with Mr. P. B. Nye as chairman, completed its investigations and submitted a final report. Estimates indicated that the installation and operation of a 250-ton-per-day plant, which was considered to be the largest and most economic unit commensurate with Tasmanian market for oil products, would incur heavy loss. The committee discussed another possible method of utilising the shale, viz., preparation of bitumen as the principal product, and decided that the method offered sufficient prospects to justify expenditure on experimental investigations. Arrangements were made for experiments to be conducted at the Department of Mines Laboratory, Launceston.

Routine and Other Duties.

The usual duties of interviewing visitors, answering correspondence, &c., were carried out. These were mainly

concerned with identification of specimens, and furnishing information about mineral deposits, mines, publications, &c., in connection with the mining industry of the State.

Other duties included—

- (1) Preparation of rock sections.
- (2) Attention and additions to departmental collections.
- (3) Preparation of plans, sections, maps, &c., to accompany reports.
- (4) Weighing of, and certifying to, parcels of osmiridium being shipped overseas.
- (5) Attention and additions to departmental library.
- (6) Reports and recommendations in connection with aid to mining, prospecting, &c.
- (7) Attendance at meetings of Mine Managers' Examination Board.
- (8) Preparation of collections of specimens for schools and other institutions.
- (9) Attendance at meetings of Shale Oil Inquiry Committee.

Conclusions.

I desire to record my appreciation of the co-operation and excellent work carried out by the staff of the Geological Survey, and the capable and energetic manner in which such work was undertaken.

APPENDIX II.

REPORT OF THE CHEMIST AND ASSAYER.

The Chemist and Assayer (Mr. W. St. C. MANSON) reports:—

I have the honour to submit my annual report for the year 1934.

During the year the following elements were determined:—Gold, silver, tin, lead, aluminium, antimony, arsenic, beryllium, barium, calcium, chlorine, chromium, iron, magnesium, molybdenum, nickel, osmiridium, phosphorus, platinum, potassium, sodium, sulphur, titanium, tungsten, zinc, and zirconium; also analyses of clays, cement, rocks, minerals, alloys, coal, shale, water, &c.

The number of determinations amounted to 5300.

Boring.

During the year equipment was forwarded to various parts of the State, and stored when returned.

Tasmanite Shale—Flotation.

Intermittent research was carried out, the object of which was to examine in further detail the separation of spore case material from the inorganic matter of the shale. Investigations to date give favourable indications, and this research will be continued early in the new year.

Porcelain ball mills and a 4-inch M.S. type flotation machine have been purchased during the year.

Several inquiries were made to have metallurgical tests undertaken, but owing to pressure of other work no opportunity existed to do same.

General.

A good deal of routine work was attended to and information supplied to inquirers. It has been found necessary to continue the performance of a considerable amount of overtime.

I wish to place on record my appreciation of the work carried out by the staff during the period under review.

APPENDIX III.

REPORT OF THE CHIEF INSPECTOR OF MINES.

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

I beg to submit my annual report for the year 1934 in connection with the administration of the Mines and Works Regulation Act, 1915.

Tables are attached showing—

- (1) Fatal accidents and injuries received in or about mines, works, and quarries in Tasmania.
- (2) The rate per 1000 of fatalities and injuries in the different divisions.
- (3) The average price of metals from the years 1922 to 1934.

The average number of persons employed for the year was 4843, being an increase of 333 compared with the year 1933. The increase would have been considerably greater but for the mines on the West Coast being idle for a period, due to the shortage of water for power.

Accidents.

The total number of accidents reported during the year was 108, being an increase of 31 compared with the year 1932. The 108 accidents caused injury to 109 persons, being an increase of 31 compared with the previous year. There was an increase of one accident in the Northern and Southern Division. In the Eastern Division there was an increase of one accident, and in the North-Eastern Division there was a reduction of two accidents. In the North-Western Division there was an increase of four accidents, and in the Western division an increase of 28 accidents, as compared with the year 1933. The increase of accidents can be largely attributed to the number of inexperienced men who are being employed.

The fatal accidents were three, causing the deaths of four persons, and there was a decrease of three on the previous year. The non-fatal accidents were 105, causing

injury to 105 persons, being an increase of 24 compared with the previous year. The rate per 1000 persons employed killed and injured was 22.506, compared with 17.295 for the previous year. The rate per 1000 persons employed who were fatally injured was 0.826, the rate for the year 1933 being 1.552. The rate per 1000 persons employed who received injuries necessitating absence from work for more than 14 days was 46.286, compared with 15.742 for the previous year.

The four fatal accidents were caused as follows:—

- (1) In a drive two miners were firing a round of holes. A premature explosion occurred, which caused fatal injuries to both men. Inquiry failed to disclose the cause of the accident.
- (2) An employee at the converters of a smelting plant was barring clinkers off a smoke-box. A piece of clinker, falling, struck the bar he was using, which struck his head, causing fatal injury.
- (3) A brakesman employed on an electric underground train jumped off a truck to turn the points. He slipped and fell under the wheels of the truck, being killed instantly.

Of the 105 serious accidents, 81 occurred underground and 24 on the surface. Nine occurred at works and quarries, three at coal mines, two at sluicing claims, and the remaining 91 at metal mines.

The injuries in 29 cases were such as to cause fractures or loss of sight. The remaining 76 cases caused injury which necessitated absence from work.

Prosecutions.

There were three prosecutions for failing to comply with the provisions of the Act. One case was for careless use

of explosives, and two for unseemly and riotous conduct. In all three cases convictions were obtained and fines imposed.

Operations: Southern Mining Division.

The Electrolytic Zinc Company operated continuously during the year, and produced 54,629 tons of zinc, valued at £982,285, and 172,588 tons of metallic cadmium, valued at £24,163, from ore mined in other States. An average of 782 persons were employed. The company did not treat any ore produced in Tasmania owing to the low metal prices. An additional unit to the plant is nearing completion, and will greatly increase the output in the future.

The Catamaran Coal Mine operated fairly regularly, and produced 7040 tons, valued at £4937, at the mine-bins, and employed, on the average, 50 men.

Prospecting for coal has been continued at Strathblane, and a small tonnage has been marketed from Sandfly.

The Australian Commonwealth Carbide Company operated continuously during the year, and produced 6924 tons, valued at £138,500, and sold 14,557 tons of limestone, valued at £8741. An average of 154 persons were employed.

Adamsfield.—Owing to the low price of metal, the number of men employed was reduced to 60, and the output to 487 oz. On the lode deposits very little work has been carried out.

Quarries.—The bluestone quarries have worked fairly continuously. There has been a slight improvement in the output from brickwork quarries.

In conclusion, I again desire to express my appreciation of the energetic manner in which inspectors have carried out their duties.

TABLE showing Rate per Thousand Killed and Injured in different Divisions for the Year 1934.

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	1303	2	...	2	2	1.535	...	1.535
North-Eastern	481	2	...	2	2	4.158	...	4.158
Eastern	746	6	...	6	6	8.042	...	8.042
North-Western	563	14	...	14	14	24.866	...	24.866
Western	1750	84	4	81	85	48.571	2.285	46.286
Total	4843	108	4	105	109	22.506	0.826	26.680

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	1469	78	4	75	79	53.778	2.723	51.055
Zeehan, &c.	281	6	...	6	6	21.352	...	21.352
Total	1750	84	4	81	85	48.571	2.285	46.286

COMPARATIVE Table of Statistics of Accidents in and about the Mines of Tasmania
from 1st July, 1892, to 31st December, 1934.

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	8·706
" 1907 " 1907	7516	68	6	64	70	9·314	0·798	8·515
" 1908 " 1908	6464	60	6	58	64	9·900	0·928	8·972
" 1909 " 1909	6054	54	6	49	55	9·085	0·991	8·093
" 1910 " 1910	5770	63	8	57	65	11·265	1·386	9·878
" 1911 " 1911	5247	80	4	77	81	15·437	0·762	14·675
" 1912 " 1912	5566	60	53*	53	106	19·044	9·522	9·522
" 1913 " 1913	6106	64	6	60	66	10·809	0·982	9·826
" 1914 " 1914	4741	69	9	62	71	14·977	1·896	13·081
" 1915 " 1915	3908	71	6	67	73	18·679	1·535	17·144
" 1916 " 1916	3864	53	2	51	53	13·716	0·517	13·198
" 1917 " 1917	4050	50	2	48	50	12·345	0·493	11·852
" 1918 " 1918	4279	50	5	45	50	11·684	1·168	10·516
" 1919 " 1919	4413	58	1	57	58	13·143	0·226	12·917
" 1920 " 1920	5364	52	2	50	52	9·694	0·372	9·322
" 1921 " 1921	4011	40	3	37	40	9·972	0·748	9·224
" 1922 " 1922	3835	31	4	27	31	8·083	1·043	7·040
" 1923 " 1923	4785	64	2	63	65	13·584	0·417	13·166
" 1924 " 1924	5264	72	1	73	74	14·057	0·189	13·867
" 1925 " 1925	5110	62	2	61	63	12·328	0·391	11·937
" 1926 " 1926	5309	54	5	52	57	10·736	0·941	9·794
" 1927 " 1927	5044	70	5	65	70	13·877	0·991	12·886
" 1928 " 1928	5170	47	1	46	47	9·090	0·193	8·897
" 1929 " 1929	4986	59	17	55	72	14·440	3·409	11·031
" 1930 " 1930	4606	55	4	52	56	12·158	0·868	11·289
" 1931 " 1931	4391	38	8	35	43	9·792	1·821	7·970
" 1932 " 1932	4605	71	4	67	71	15·418	0·868	14·549
" 1933 " 1933	4510	77	7	71	78	17·295	1·552	15·742
" 1934 " 1934	4843	108	4	105	109	22,506	0·826	21·680

* Mount Lyell disaster.

APPENDIX IV.

REPORT OF THE CHIEF INSPECTOR OF EXPLOSIVES.

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

I have the honour to submit my report on the administration of the Explosives Act, 1916, and the Inflammable Liquids Act, 1929, for the year 1934.

The imports of explosives for the year was as follows:—

	lb.
Monobel	80,000
Gelignite	728,000
Ligdyn	11,750
Blasting gelatine	2,550
Gelatine dynamite	1,850
Samsonite	500
Powder	12,330
Detonators	325,000

The quality of the explosives imported was very satisfactory. Small quantities were found defective and destroyed, the defect, in all cases, being due to faulty storage.

Accidents.

Two accidents occurred during the year:

- (1) A coal-miner fired two shots and only one exploded. Assuming that the other fuse had not ignited, he was returning to the face, when the second charge exploded, causing painful but not serious injury.
- (2) Two miners were firing a round of holes in the face of a drive, and before they completed the ignition a hole exploded, causing fatal injury to both men.

Prosecutions.

A shipowner was proceeded against for failing to obtain a permit to load inflammable liquid; and two companies were prosecuted for failing to obtain permits to load inflammable liquids. In each case fines were imposed.

Revenue.

The following licences were issued, and fees paid in connection with them, for the year 1934:—

Explosives Act, 1916 (1st January to 31st December, 1934).

	No.	£	s.	d.
Magazine licence	53	52	10	0
Permits to sell explosives	278	69	7	6
Permits to import explosives	13	26	0	0
Permits to convey explosives	53	13	0	0
Permits to sell fireworks only	90	11	3	9
		£172	1	3

Inflammable Liquids Act, 1929 (1st July, 1933, to 30th June, 1934).

	No.	£	s.	d.
Licences for store	437	738	5	0
Registration of premises	269	66	5	0
Permits to unload ships	48	50	8	0
Permits to import	10	2	10	0
Increased quantities	8	3	5	0
Transfer fees	3	0	15	0
Amendment to licences	15	3	15	0
Inspection of ships	10	52	10	0
		917	13	0
Magazine rents		58	9	3
		£976	2	3

In conclusion, I desire to express my appreciation to the Police Department for the very valuable assistance it has rendered.

APPENDIX V.

REPORTS OF INSPECTORS OF MINES.

Inspector H. A. VAUDEAU (Upper Burnie) reports:—

I have the honour to submit my annual report for the year 1934 in connection with the work of inspection and administration of the various Acts delegated to this office, and a résumé in connection with the mines, works, and quarries in this district.

The average number of men engaged was 727. The first quarter's average being 710, the last term's 757.

There were twenty accidents of a serious nature, but none ended fatally. Fourteen occurred on the surface and six underground. The men involved were incapacitated from work from 18 days to six months. A considerable number of minor accidents have occurred during the year, but most of them were such as could have been avoided if more attention to safety had been given.

Ventilation.—At coal mines, when conditions required it, air-shafts, except in one case, were provided as requested. Efforts have now been made to improve conditions at the mine referred to, but it will take some time to make them satisfactory.

Explosives.—Consignments from the mainland have received the necessary attention as regards handling at Burnie, and their despatch to destination as required.

Workers' (Occupational Diseases) Relief Fund Act.—Only one man applied to this office to be examined for compensation, but he subsequently withdrew the application. A "roster" of examinations is being conducted at one mine, but was not completed at the end of the term; at other places arrangements are made for new employees to be examined as required under the Act.

Machinery, Ropes, &c.—All ropes and gears have received attention as required. Two cases in connection with defective machinery were referred to the Inspector of Machinery for attention.

General.—The closest attention possible has been given to endeavour to see that men were working under reasonably safe conditions, and that facilities were provided (concerning shelter-sheds, sanitary arrangements, handling explosives, allaying dust, &c.) at the various mines, works, and quarries under the provisions of the Act, also to see that reasonable precautions were being taken in connection with the handling and storage of inflammable liquids.

In addition to the usual inspection work delegated to this office, a good deal of extra work has been carried out in connection with the Aid to Mining Act, including the selection of sites for bore-holes in connection with the boring for coal at New Bed-Railton-Dulverton coal area.

I would like to express here my appreciation of the help rendered by the managers and foremen of the various mines, works, and quarries, and the men engaged thereon, who have materially assisted me in the performance of my duties.

OPERATIONS AND PRODUCTION.

Gold.

Savage River Flats and Middleton Creek (Corinna).—The Austral Malay Tin Mining Company, with a power boring plant, continued a boring programme to prove

ground held under option from the President Mining Development Company; holes were taken to 110, 125, and 135 feet. These were all stopped in river drift, no bottom being found; two false bottoms were encountered, these consisting of schist. Owing to the depth of the ground below the level of the Savage River and its character, in addition to the fact that the values were not as rich in the deeper ground as was expected, the option was abandoned, and the plant removed. The ground was shortly afterwards given up by the President M.D. Company. A party took up some of the ground under prospecting licence, and has since taken up two 40-acre dredging claims, also water-rights for 20 sluiceways. It has repaired 5 miles 40 chains of the old Corinna Gold Mining Company's water-race to carry 25 sluiceways of water, and cut a new race over the divide into Middleton Creek, approximately 25 chains; also constructed a dam in Hunter's Creek for storage. They have also installed a 7-inch diameter elevator and giant nozzle, with 750 feet of pipe-line, the latter being 12 inches and 9 inches in diameter. One hundred cubic yards was sluiced for approximately 2 oz. of gold; this had not been realised on at the end of the year. The scheme of work is to continue the cleaning out of the old water-race towards Timbs Creek, so that a permanent supply of water will always be available. As far as one can judge without thoroughly sampling the area by either boring or shaft-sinking, the future prospects are "promising." From three to five men were employed at this work.

Holdfast Gold-mining Company.—The company cleaned up the ground worked on the Rocky River for 25.8 oz. (fine) and a little osmiridium. Work was afterwards resumed at the spur above the big bend in the Whyte River. There appears to be two old river-beds here, which in past ages have been lifted up to their present position. Instead of taking these "leads" alone, strips of ground were taken right up across the hillside; results were disappointing, only 12.10 oz. (fine) and a couple of ounces of osmiridium were found here. There appears to be sufficient encouragement in the prospects offering to test the flat across the river below the tunnel. The two old river-beds mentioned above must go in that direction. If any payable gold exists in the locality the prospects of finding it there are very favourable.

At Smith's Creek, below the old Shore's Surprise Mine, a few men have been working. At one period two men were winning over an ounce per week, but the ground has latterly fallen off in value.

At the Burnt Spur, Savage River, Allan Bros. obtained several ounces very quickly; but it proved to be only a patch. The hillside above offers good prospects. From these two areas 46.48 oz. of gold was obtained.

From the Jessie River, Calder, Cam, and Arthur River areas 43.28 oz. (fine) was obtained by various prospectors. For a time W. North & Son worked payable ground near the Arthur River. A party started operations on the property of Mr. C. R. Bugg at Takone, and sank prospecting shafts in trying to pick up the alluvial lead above where the "rush" took place in the early part of January, 1932, but their efforts were unsuccessful.

Strong's Creek-North Pieman Area.—Two men obtained 5.44 oz. in a short time here, but it proved to be an isolated occurrence.

Johnson and party report that they won 13.81 oz. (fine) from gossan obtained from the top portion of the shaft workings in the old Koonya Mine, a few miles from Rosebery.

At the Wilson River area and near Renison Bell 8.48 oz. (fine) was obtained. This gold is of the highest quality, one parcel returning .9996 (fine). An area out near the Harmon and Wilson Rivers is worthy of more attention.

On the V.D.L. Company's property at Surrey Hills a prospector won .625 oz. from shallow ground, looming up to the toe of the hillside, searching for a lode formation. Some work, consisting of a shallow tunnel and two trenches, was put across a big formation, some 10 to 18 feet wide, but so far nothing payable has been discovered.

At Moina, towards the middle of the year, H. Higgs took up a lease, and put in a small shaking sluice-box, also a small water-wheel to drive it, to treat the alluvial ground on the hillside below the old Squib Mine. He obtained 4.9 oz. (fine), valued at £33.6. The gold is very fine. Indications here are favourable, but special plant will be needed to catch the finest of the gold.

A party of three men investigated the possibilities of finding payable deposits above this locality, but their efforts were unsuccessful.

Mount Stormont Gold Mine, Lea River, Moina.—A small amount of bismuth-gold concentrates was sent forward by R. Magee and party, containing 2.2 oz. of gold

and .07 ton of bismuth, valued at £57.81. An option was taken over the property by the East Gippsland Mine Development Syndicate of Melbourne, and eventually it was taken over. A considerable amount of tunnelling work, trenching, and sinking of prospecting shafts was carried out on the two leases held by the old company, on one which it took up itself in between the leases. Thirteen men were employed for some time, but operations were suspended on the 15th December. While driving and crosscutting from the open-cut workings to further test the ore deposit, the ore obtained was treated in the small concentrating mill, and a quantity of bismuth-gold concentrates was recovered and shipped. Returns for this have not been supplied.

A. Mather marked off an extended prospecting claim on the old Belmont diggings. He had some trenching work carried out on a quartz formation, but values were disappointing, and work was discontinued.

Great Caledonian Gold Mine, Five-Mile Rise, Middlesex.—This mine was again unwatered. The manager reported that a parcel of ore was broken from below the 50-foot level, and sent to Beaconsfield, 15 dwt. of gold being obtained from 2½ tons of stone. He also states that a 4-ton parcel was treated, and gave a slightly better return. The tunnel level was extended 12 feet, and a crosscut put out 24 feet, but nothing of any value was exposed. Some surface trenching was carried out, and the mine manager reported having struck ore going 15 dwt. to the ton. Work has since been suspended.

Dove River-Lorinna Area.—J. Wilson and Dunstan, having obtained an option from McAvoy's party over their prospecting area, carried out some trenching, tunnelling, and shaft work on a big formation carrying gold, silver, and copper. Samples are reported to have given up to 1 oz. 15 dwt. of gold; a parcel of 5 cwt. sent to the Mount Lyell Mining and Railway Company for treatment gave discouraging results. It is understood that investigations on the area have been discontinued.

Out towards Bond's Peak, and various parts in the direction of Cradle Mountain, prospecting has been in progress by a few men, but nothing of any value has been discovered.

At the Black Bluff some prospecting work has been carried out near Black's and the old D.P.A., but as far as is known nothing of a payable nature has been discovered. Two visits were made during the year to the locality. A very limited amount of work has been carried out.

At Oliver's Hill, Mount Claude District, McAvoy and party sunk a prospecting shaft—on a formation picked up by trenching—to a depth of 12 feet, the lode being 2 to 3 feet wide; they also cut some trenches across it. They sluiced the material obtained, and got 1.83 oz. fine gold, valued at £12 7s. On their prospecting claim adjoining, some trenching work was done on two formations, the gold obtained being very fine. This area offers very favourable prospects.

Gawler River Gold Mine and the Bass Gold Mine, Gawler.—A considerable amount of trenching, tunnelling, and shaft-sinking was carried out on schistose quartz formations. During the third quarter work was suspended.

Messrs. Schlapp and Dunstan, to the south, on the Gawler Heights, carried out a considerable amount of trenching, and drove one tunnel, but stopped work during the second quarter. The manager reported that values were very disappointing, nothing over 3 dwt. being obtained.

Prospectors.—Owing to favourable reports being published concerning the Gawler Gold Mines, a good deal of activity took place during the early part of the year; several men were trenching, tunnelling, and shaft-sinking in the vicinity of of the Castra-road, where some prospecting work had been carried out years ago. Nothing of any value was discovered.

Latrobe.—Three men were engaged in prospecting, looking for the source of gold reported to have been found years ago. Two quartz formations were discovered and some trenches put across these, but nothing of value has so far been discovered.

Beulah, Kimberley, Minnow, and Dasher River Areas.—At odd times several men have been investigating these districts by trenching, open-pit, and shaft-sinking, but nothing of importance has been noted.

Pegarah, King Island.—The King Island Prospecting Syndicate, owing to reports that gold had been found years ago, decided to sink to confirm the report. A shaft was sunk, and a crosscut put out to a formation. Samples were taken for assay. On receipt of these work was suspended and the ground abandoned.

Tin.

Mount Bischoff Tin Mine, Waratah.—During the period 19,651 tons of ore were crushed, and 9108 tons of slimes and tailings retreated, for a recovery of 338.25 tons of tin concentrates, containing 242.84645 tons of metallic tin. At the North Valley 16,080 cubic yards were sluiced, from which was obtained 16.25 tons of stream-tin, containing 10 tons of metallic tin—total net value, £61,958. The average number of men employed was 188, being 15 more than last year. All productive operations were conducted by parties of tributors.

At the North Valley workings dry weather was responsible for curtailment of operations through water shortage. Owing to this the race was enlarged, and various alterations made, so that work could go on continuously. Much better progress is now being made.

A good deal of developmental work has been carried out by one party on the North Valley lode (south end). A crosscut was put out to a distance of 148 feet in hard ground to cut the western end of the Queen Lode, to intersect it under the main tunnel workings. Where cut, values were poor—approximately .3 per cent. tin. Values should improve as driven on under the old workings in an easterly direction. A little work was done lower down the hillside, it being thought that it was the continuation of the Queen lode, and probably a branch or spur of the main lode. This party erected an air-compressing plant, which has helped considerably. The party has opened up a fine lot of ore on the northern end of its old line of lode, averaging from 1 to 1.2 per cent. tin.

C. Grey and party have installed an additional five head of stamps, and have opened levels on the northern extension of the North Valley lode. They have developed a nice run of stone, and are being rewarded for their enterprise.

Keyser Lode.—In the northern end the stopes have been connected with the Brown Face open-cut by a level 102 feet in length. Average width of lode, 10 inches; value, about 2 per cent. tin. On the southern side another party has installed an air-compressing plant for pumping purposes, hoisting, and rock-drilling work. The superintendent estimates that in these workings 4500 tons of ore have been developed, having an average grade of 1.5 per cent. tin.

Wheal Lode.—An intermediate level was sent in a distance of 86 feet on a lode which was very small, averaging only 2 inches. The grade, however, is 8 per cent. tin, and has returned a good rate of wages to the men employed.

Flat Make.—Ore of good quality is still being mined here, where two parties have been working.

A good deal of surface work has been carried out. Places which were considered to be completely worked out have been opened up, and the price of tin has enabled the men to earn a living wage. Underground work has been given more attention, and blocks of payable stone have been opened up. Stone of favourable quality occurs in one of the mine workings off the Happy Valley. There are still a lot of places deserving attention. Under the old Gossan Face workings ore of payable grade has been met with. It was considered that the ore laid on the dolomite, and not below it; it has, however, been found to occur there, the values being maintained. Three parties have done well here.

Customs Ore.—The company has crushed 494 tons of crude ore, mostly for those working on portions of the old Extended Mine.

The Old Mount Bischoff Extended Tin Mine.—Five leases have been taken up on this by three parties. Two of these have sublet portions. Most of those engaged are making over wages. The work being done is principally removing portions of pillars and huge blocks of ground left by the old company. Some of these big blocks, on being driven into, were found to contain good values in tin.

H. Stanley and Party.—The Mount Bischoff Company crushed for this party 281 tons, from which was recovered 12.6 tons of tin concentrates, containing 8.3 tons of metallic tin, valued at £2071. The average number of men employed was eight.

C. Dunstan and Party.—The Mount Bischoff Tin Mining Company crushed 169.5 tons for this party, from which was obtained 8.4 tons of concentrates, returning 5.9 tons metallic tin, which realised £1471. An average of 10 men were employed.

G.P.S. Syndicate.—This syndicate has its own small crushing and calcining plant, and has been treating old battery and calcined tailings, as well as a quantity of crude ore from old stopes above No. 6 level. It obtained 2.9 tons of concentrates, containing 2 tons of metallic tin, valued at £492.6. An average of three men were employed.

H. Read and Others.—A quantity of the ore mined was given preliminary treatment in a sluice-box, then sent to the Mount Bischoff mill; other portions were rich for direct market. Output, 1.9 tons of concentrates, which contained 1.9 tons of metallic tin, valued at £273.73. The average number of men employed was three.

Lunia Tin Mine, Lunia.—Approximately 800 cubic yards of tailings and old dumps was treated, for 1.7 tons of tin concentrates, containing 1.15 tons of metallic tin, realising £278.19. Two men were employed at the work. They cleaned up all this class of material available, and have now started to open up a lode.

Spencer and party (Lunia) have been doing a little ground-slucing near the Whyte River Flat, and obtained .3 tons of stream-tin, containing .2 tons of tin. It realised £50.8. Two men were employed intermittently.

Balfour Area.—Ten miners' rights and four prospectors' licences were issued to men working in this area. Reports received state that 2.8869 tons of tin oxide, containing 1.94272 tons of tin, have been sold during the term.

Upper Natone, Kara.—Alluvial ground has yielded 2.3 tons of tin oxide, containing 1.22919 tons of metallic tin, valued at £287.7.

One party started to do some prospecting work to find the source of the tin at Kara, near the old Kaolin Tin Mine; prospects are encouraging. There is some likely looking country in this locality.

Renison Bell Area.—Three men on the old Montana Tin Mine won 4.6 tons of tin oxide, containing 3 tons of tin, which realised £702.

At other parts of the field ten men have been ground-slucing and re-treating tailings, and have won 7 tons of tin ore, containing 4.17 tons of tin, valued at £897.8.

In June last H. Grining and party started operations on the Pine Hill section, and drove a tunnel 120 feet, the objective being to test below the surface the deposit worked by Kitto and Davie, which gave promising surface prospects. Some distance requires to be driven to reach that point. Some trenching was carried out, but did not go far enough to cut the formation.

A new company was formed to work the old Renison Bell and Dreadnought-Boulder Tin Mines. Options were also taken over the old Montana, Federal, and Central leases. No work other than taking samples for testing purposes has so far been put in hand. If the whole of the products could be recovered and marketed, that is, the sulphur, iron oxide, and tin, at a reasonable figure, there should be a good future before this district.

Exe River and Gorge (Rosebery Area).—At the old Exe River Tin Mine two men have been working intermittently, picking over the lode material in the No. 2 tunnels, also from the open-cut. This material was crushed in a one-head stamper battery, driven by a water-wheel; .7 ton of concentrates were recovered, containing .4 ton metallic tin, which realised £100.3.

Lower down the river one man has been working, also using a single stamp for crushing purposes; he obtained .4 ton of concentrates, valued at £33.45.

On the old Williamsford Tin Mine, Colebrook Hill, W. Hill obtained 1.8 tons of tin oxide, containing 1.6 tons of metallic tin, and sold it for £290.4. There appeared to be a quantity of this ore going in a southerly direction, but so far as can be seen it is limited.

Near the Exe Gorge, on the E.B.R. Line, A. J. Salmon recovered .6 ton of tin ore, containing .4 ton of tin. It realised £91.4. Prospects here are decidedly encouraging for a working party with a small stamp battery that could be worked by a water-wheel.

South Bischoff and Wombat Area.—W. R. Pryde and party hydraulicked 6562 cubic yards of alluvial ground, and obtained 1.5 tons of stream-tin, valued at £247.2. The party averaged three men. The ground is very heavily timbered. Work has been suspended.

Five other men have been working in the neighbourhood on alluvial ground, and in sluicing obtained 1.6 tons of stream-tin, valued at £217.9.

Mount Ramsay Area.—L. Aylett and party ground-slucied a small paddock of ground, and obtained 2 tons of stream-tin, containing 1.4 tons of metallic tin. It realised £316. A hydraulic sluicing plant is to be installed here.

Parson's Hood Track Area.—J. Betts and others: An average of two men won .3 ton of stream-tin. It contained .17 ton of tin, valued at £40.

Waratah River.—A party of two men sluiced 120 cubic yards, for .3 ton of stream-tin, containing .2 ton of metallic tin, valued at £45.

Deep Creek.—A tributary of the Whyte River. Bozich and Crawford did some prospecting work; then put in a tail-race, turned the creek, started ground-slucing, and obtained .5 ton of stream-tin, containing .2 ton of metallic tin, valued at £47.

Silver-Lead-Zinc Ores.

Farrell Mining Company, Tullah.—During the early part of the year 5453 tons of slimes was treated at the flotation plant; the rest of the work was confined to the northern sections. The tram-line, bins, and branch line were completed, linking up with the concentrating mill to facilitate ore treatment. The average number of men employed for the term was 69. The lode channels at this end, on which two prospecting shafts and an adit had been put in to prove and work them, had given sufficient encouragement to warrant the sinking of a new main shaft, 11 feet by 4 feet 6 inches inside timbers. This was sunk to 167 feet, poppet-heads and an electrically driven winch, with other necessary equipment, being installed.

At the 100-foot level a drive was extended 310 feet south of the No. 1 prospecting shaft, on what is called No. 1 lode, which was over a length of 50 feet adjacent to this shaft. In the remainder of the drive values were very erratic, but occasionally carried veins up to 3 inches of solid galena. A winze was started, and sunk 6 feet on 6 inches of clean ore, which is still continuing downwards. No. 2 prospecting shaft, to the south of No. 1 shaft, was connected with the above drive by a rise. A considerable amount of stoping was carried out from the lode channels at No. 1 shaft. The lode proved to be "patchy" over a varying width of 1 to 4 feet, the values generally over a length of 105 feet being good. To maintain the output winzes were sunk from the 100-foot level, and some underhand stoping done. At the No. 2 shaft, at a depth of 35 feet, drives were put in north and south. At the 167-foot level a crosscut was put out east, and intersected the No. 1 lode channel at a point directly beneath the highly productive section of the lode above.

Ore Treated.—In addition to the 5453 tons of slimes treated, as mentioned above, 8265 tons of mine ore was handled, making a total of 13,718 tons, from which was produced 1638 tons of lead concentrates, containing 1058 tons of lead and 125,523 oz. of silver, while in addition 57 tons of hand-picked ore, containing 36 tons of lead and 4134 oz. of silver, was sold. Total gross value, £24,264.

Magnet Silver Mine, Magnet.—Operations at this mine are being conducted by a party of working men. Owing to the shortage of water for power purposes, no ore was sold for the first four months of the term. Some 4250 tons of crude ore were milled, producing 594 tons of concentrates, containing 55,552 oz. of silver and 344 tons of lead. The net value to the syndicate was £7904 17s. 8d. The average number of men at work was 40. Since active operations were commenced by the co-operative syndicate in June, 1932, 20,825 tons of crude ore has been mined and treated, for 3000 tons of concentrates, assaying 56 per cent. lead and 90 oz. of silver per ton. The average number of men employed was 70. The present average is 40 men. The net value of ore sold was £33,280. Wages paid to 31st December, 1934, amounted to £25,199.

Electrolytic Zinc Company of Australasia Limited, Williamsford and Rosebery.—A limited amount of underground developmental work has been carried out at the Hercules and Rosebery Mines, together with the maintenance of the mine workings, plant, and machinery, and an addition to the foot of the incline haulage at the Hercules Mine. The principal work at the Rosebery Mine was the extension of the No. 8 level another 365 feet. The ore-body is very much disturbed in this area. The drive north on the No. 6 level has also been restarted. In the Hercules Mine work was restarted at the No. 6 level, and a rise was put up to a height of 98 feet, at which distance a connection was effected with a winze sunk from No. 5 level on the E lode. Some driving was done off this rise to see if the bottom of the values could be determined. The north drive off the main No. 6 adit was also extended 264 feet. The last 35 feet of this extension intersected the G lode channel. At the point of intersection the channel carried small amounts of lead, zinc, and copper sulphides. At the No. 5 level the ore transfer drive was advanced 287 feet in a southerly direction towards the Mount Read Mine. During this extension the South Hercules ore-body was followed for 220 feet, and crosscutting proved the lode to average 10 feet in width.

Limestone and Lime.

The Broken Hill Proprietary Limited shipped 156,675 tons of limestone from Melrose to Newcastle. The value of this is estimated at £33,994. The average number of men employed at the quarry was 64. Two other lime works produced 373 tons of lime for industrial purposes. The value at the works was £642, and the men employed numbered four.

Cement.

Goliath Portland Cement Company Limited, Railton.—The plant has worked intermittently in accordance with sales requirements; the employees, however, have been engaged in other directions as well as in general plant maintenance. A total of 45,049 tons of cement was manufactured. The value at silos is estimated at £157,671, and the average number of men employed was 94. This company is using most of the coal consumed from pits in the neighbourhood of the works, giving employment to about 45 men. The coal is considered to be very satisfactory for the purpose.

Talc.

The only source of production was at Templar's Mine, Gawler, which produced 9.05 tons, valued at £23.5.

Coal.

Illamatha Colliery, Spreyton.—An output of 1717 tons, valued at the mine bin at £1017.5, was produced by an average of seven men. Considerable difficulty was encountered here owing to rolls and jumps; however, towards the end of the year conditions had improved considerably, and the men are now doing much better.

Aberdeen Colliery, Spreyton.—The output was 1962 tons, valued at £1454 at the mine bin. Average number of men for first six months, six; last six months, seven. Coal averaged about 21 inches in width.

Tarleton Colliery, Tarleton.—Some 640 tons was produced, the value being £419.5 at the mine. The average width of the coal was 18 inches. For the greater part of the time two men were employed.

The Southern Star Colliery, Tarleton.—Work has not been continuous at this pit. The coal has been very narrow and faulted. A start was made with a new tunnel, but work was stopped, and another one started to try to get on to coal quicker. This work was in hand at the close of the year. The coal produced totalled 468 tons, valued at £288.63 at mine bin.

Dulverton Coal Mine.—New Bed, between Railton and Dulverton: 1190.9 tons of coal was sold, valued at the mine bins at £774, with an average of six to seven men employed. Two tunnels have been worked. Coal was very narrow for some considerable time, but is now improving. From an area let on tribute to Mr. A. Parker 202 tons of coal was mined, and sold for £131.

The Star Coal Mine, New Bed (Parker's).—A few tons of coal was mined by this party on ground just below the Dulverton Coal Mine, but it was not payable. On the opposite side of the creek the main entry of one of the very early pits was cleaned out and work resumed therein. Altogether 205.3 tons was mined and sold, the value at the bins being £133. The average width of the seam in the new workings was 18 to 19 inches. Usually three men find employment here.

Lucky Hit Coal Mine, New Bed.—A party of four men broke 712.55 tons, for £541.275 at the mine bins. The seam now being worked is 18 to 20 inches wide.

Hard-to-Get Coal Mine, New Bed.—A total of 405.25 tons of coal has been broken and sold—valued at the bins at £308—with three men employed.

Esk Bank Colliery, New Bed.—With four men at work, 773.65 tons of coal was obtained, the value at the bins being £573.

Black Beauty Coal Mine, New Bed.—The two men employed broke 412.4 tons, valued at the bins at £284.035. The seam averages 18 inches.

Wolfram and Scheelite-Bismuth.

Mount Pelion Wolfram Mine at Mount Oakleigh.—A parcel of 1 ton of wolfram was brought out by Betts and party, containing 70.4 per cent. tungstic acid and 1.1 per cent. tin. It realised £133. This ore was recovered from the old mine dump.

At Lawson and Riley's, Moina, now called Lawkemplaw Wolfram Mine, operations were started by cleaning out the tunnel and repairing same so that it could be continued on the ore-channel. This was continued a few feet, and some underhand stoping done. A small concentrating plant was also erected. Concentrates produced were 1.4 tons, containing .9 ton of tungstic acid, which was sold for £194.8. Three men were employed for a period of six months.

At the Beryl Mine, near the Forth River, two men were at work for a short period, and obtained ore containing bismuth and wolfram. Metallic contents were .26 lb. of bismuth and 3.4 cwt. of tungstic acid, valued at £39.8.

Shepherd and Murphy Mine, Moina.—Towards the end of the year work was resumed by three men, working in the old stopes on No. 4 lode.

Grassy, King Island.—A company was formed to take up and develop the old Scheelite Mine, which closed down at the end of the Great War owing to the slump in prices for tungstic acid. Some of the old workings were cleaned out, and a series of bores were put down.

Mount Stormont Mine, Moira.—A little bismuth was obtained, as already stated, in association with gold.

Shale.

Tasmanite Shale Oil Company, Latrobe.—Operations here were conducted by a syndicate. A total of 3158.1 tons of shale were treated, from which 61,530 gallons of crude oil were produced. The shale was obtained by extending the bords already opened up by the company.

M. Rayner installed on his leases two (9-inch and two 12-inch diameter) retorts, treated 194 tons of shale, and obtained 4200 gallons of crude oil.

Inspector J. F. SHAW (Queenstown) reports:—

I beg to submit my annual report for the Western Inspection Division for the year 1934.

Men Employed.—The average number of men employed in the industry was 1563, compared with 1570 in the previous year, being a decrease of seven. During the year, owing to a shortage of water for power at Lake Margaret, production was suspended on two occasions in the Mount Lyell Company's mines—for seven weeks and five weeks respectively. Under normal conditions the average number of men employed would have been much greater than in 1933.

Accidents.—The number of accidents causing absence from work for 14 days or more was 78; 79 men were injured, being an increase of 24 on last year's figures. Of these, 68 were underground and 10 on the surface. There were three fatalities underground and one on the surface.

Explosives.—The landing of explosives at Regatta Point and transfer to the main magazine at Queenstown was supervised.

Inflammable Liquids.—Attention was given to matters in connection with the storage and handling of inflammable liquids.

The Workers' (Occupational Diseases) Relief Fund Act.—During the year "Free From Disease" certificates for 321 new employees were forwarded to the Board. Sixteen old employees applied for examination. Of these, nine were certified as incapacitated and seven as not suffering.

Aid to Mining.—Applications for aid were reported on and recommendations made. This necessitated periodical visits to Zeehan, Dundas, North and South Heemskirk, as well as the Queenstown and Gormanston districts.

The Mount Lyell Company's Mines and Works.—Mining: The main features of the year's operations were the development of the West Lyell ore-body by driving from the Royal Tharsis No. 1 level, and prospecting and sampling this level and the surface by test holes and shafts. This work indicated the presence of an extensive body of ore. The formation is being further prospected and tested, and consideration is being given by the management to working it by large-scale open-cut methods. At the Lyell Tharsis an ore-body has been developed by a drive from the Crown Lyell No. 1 level, and a start has been made to work it by the open-cut method.

At the Lyell Comstock Mine the drive from the Tasman and Crown Lyell adit was extended on No. 7 level to the site of the Comstock main shaft, which was then risen to join with the shaft on No. 6 level. Development of the ore-body on No. 7 level is proceeding, and, as far as opened up, it is satisfactory.

Reduction Works.—In the concentrating plant a third 15-foot bowl classifier was added to the copper section. Equipment was also added for increased production of pyritic concentrates by re-treatment of mill tailings. During the year 12,032 tons of this material, assaying over 48 per cent. sulphur, was produced and shipped to Melbourne for use in sulphuric acid manufacture, and by the end of the year between 450 and 500 tons was being produced per week.

In the smelting plant a multi-cyclone dust-collecting apparatus was installed to deal with gas from the blast-furnace. So effective has this been that it is found to be no longer necessary to sinter the concentrates before smelting, with a consequent saving in cost.

Mine Hygiene.—The use of dust doors on the ore-transport passes has been extended, and in one case a permanent water-spray is proving effective in minimising

dust. In the Royal Tharsis a ventilation rise is being put up through the ore-body in stages from No. 7 level to the surface. When completed this will improve ventilation in this mine.

Quarries.—The Mount Lyell Company's quarry at Hall's Creek supplied 3162 tons of limestone for use in the reduction works.

The Crown Quarry supplied mullock for filling of stopes in the Crown Lyell and North Lyell Mines.

Surface open-cuts have been begun on the Royal Tharsis and Lyell Tharsis ore-bodies.

At the Comstock Mine a new surface quarry to supply stope-filling has been opened up, and an adit driven on No. 4 level to connect this with the mullock-pass system serving the lower levels.

General.—The pumping of wet mill tailings for stope-filling in the Royal Tharsis Mine, which was started last year, has been continued, and is now general on Nos. 7 and 5 levels. This will be extended as required in this mine, and possibly to other mines as well. By this method stopes can be filled in sections as wanted, and without waiting to stope to a rise.

General Production.—	1933.	1934.
Copper (tons)	10,739	8208
Lead (tons)	89	69
Tin (tons)	12	16
Nickel (tons)	8	—
Pyritic concentrate (tons)	1498	12,032
Gold (oz.)	5531	4756
Silver (oz.)	137,883	98,439
Limestone (tons)	3795	3162

The reduction in output of copper, gold, and silver is mainly due to the dislocation of productive work at the mine for a period of 12 weeks, as mentioned above.

General Mining Operations.—Apart from the Mount Lyell Company, mining operations were only on a small scale, being mainly fossicking or mining by individuals or small parties for gold, silver-lead, and tin.

Gold.—The Mount Lyell Company produced 4650 oz. for the year. From other sources the yield was 106 oz. This came from the Queenstown district, and was contributed by 44 fossickers, as a result of intermittent work, from Lynch Creek, Specimen Creek, Princess River, Conglomerate Creek, Linda Creek, Swan Creek, and between Mount Owen and Mount Jukes.

Copper.—The output of 8208 tons was produced by the Mount Lyell Company, with the exception of 6.56 tons from Oonah matte, Zeehan. This was sent to the Mount Lyell Smelters by two men.

Tin.—Cook Bros. and Payne, with a hydraulic lift, on the Tasman River, North Heemskirk, produced concentrates containing 1.79 tons of metallic tin. Three men were employed.

A. Kemp, on St. Dizier Creek, North Heemskirk, produced concentrates containing 0.69 ton metallic tin, two men being employed.

R. Smith, working alone, on various patches at North Heemskirk, won concentrates containing 0.533 ton metallic tin.

E. Bennett, working alone, on Eureka Creek, North Heemskirk, sold concentrates containing 0.39 ton metallic tin.

J. Dixon and C. Worsley, ground-slucing at North Heemskirk, won concentrates containing 0.95 ton metallic tin.

At South Heemskirk W. and E. Jones won oxide containing 0.525 ton tin; J. Geason won oxide containing 1.05 ton tin, with two men employed; and A. Fairfield, with two men at work, obtained oxide containing 0.83 ton tin.

From North Heemskirk 19 other prospectors sold small lots of ore.

From South Heemskirk 12 other fossickers sold small lots of ore.

At Dundas, W. J. Hodge, working the Razorback Mine by open-cut mining, and crushing with five head of stamps, produced concentrates containing 5.25 tons of metallic tin. From four to six men were employed.

At Five-Mile, North-East Dundas, W. J. Ferguson reported finding alluvial tin, and sold a small parcel containing 0.025 ton of metallic tin. When inspected, only a very small area of shallow alluvial had been proved.

Silver-Lead.—J. Pilkington and G. T. Bell, from a tribute on the Crown Lease, North Zeehan, sold ore containing 2103 oz. silver and 13.8 tons lead, two men being employed.

J. J. Hill, from south-west of Zeehan, sold ore containing 1106 oz. silver and 13.17 tons lead, two men being employed.

MINING OPERATIONS AND PRODUCTION.

J. McDermott, from his lease, 10645-M, north of Zeehan, produced ore containing 2246 oz. silver and 20.43 tons of lead. Three men were employed.

C. H. Bell and S. G. Bell, from a tribute on Barnett's lode, 3 miles north-west of Zeehan, sold ore containing 1234 oz. silver and 7.6 tons of lead. Two men were employed.

A. Smyth and Denehy, from a claim 3 miles north-west of Zeehan, sold ore containing 226 oz. silver and 3.03 tons of lead, two men being employed.

Perry Bros. sent a small quantity of matte from the old Oonah dumps to the Mount Lyell smelters. This contained copper and silver.

At the Silver Beauty Mine, Comstock, J. Dunkley and D. Grubb, with Government assistance, are driving a crosscut on the 100-foot level in the hope of cutting a make of ore they worked higher up. They have not gone far enough yet to prove it.

E. Cornish, at Leadwell's workings, about 1½ miles west of Zeehan, near the Trial Harbour-road, is receiving assistance in driving a tunnel along an ore-channel, but to date has not found anything of economic value.

Several other prospectors have worked intermittently without disclosing anything of importance.

Inspector W. H. WILLIAMS (Launceston) reports:—

I have the honour to furnish the following report upon the work of inspection and administration of the provisions of the Mines and Works Regulation Act, the Explosives Act, and the Inflammable Liquids Act within the Launceston Inspection Division for the year ended on the 31st December, 1934.

The average number of persons engaged in mining and metallurgical operations was 1337, as against 1117 for the previous year, and an average of 954 for the five years prior to 1933. The increase was due to sustained interest in the search for, and development of, auriferous lodes and alluvials and to a pronounced improvement in tin-mining activities.

The production and maintenance of safe operating conditions at the metalliferous mines, collieries, and quarries was of major importance, but visits of inspection were less frequent in consequence of an expansion in mining activities and other additional duties attached to this office.

Eight accidents were registered under the provisions of Section 26 of the Mines and Works Regulation Act, and two accidents of a serious nature were referred to the Machinery Department for investigation and record.

There were no fatalities, and the injuries sustained in six of the registered accidents were not of serious moment, although the periods of incapacity exceeded 14 ordinary days.

Matters pertaining to health and sanitation received due attention.

Thermometrical conditions were not excessive, but nuisances due to smoke and fumes from blasting operations, fogged atmospheres, and deficient air in underground places continued to recur, and occasioned frequent requests for their elimination. The institution of furnace-controlled ventilation was essential to remedy conditions at one colliery, and measures were frequently necessary to counter emanations of carbon-dioxide from strata at several small mines operating in the auriferous series.

Maintenance and protection of machinery and appliances received the attention demanded by the provisions of the Mines and Works Regulation Act. Faulty conditions were more outstanding at small mines and prospecting claims, and in several instances it was necessary to condemn windlass arrangements, sinking ropes, and connections to maintain a reasonable standard of safety.

Endeavours were made to obtain an observance of the Explosives Act and of the provisions of the Mines and Works Regulation Act relating to explosives. Several small quantities of explosives were condemned and ordered to be destroyed, but the deterioration was due to irregular conditions of local exposure, and not to the quality of the nitro-compounds as supplied. Inquiries revealed no serious defects in the behaviour of the lead-azide detonators, nor in the quality of the safety-fuse used at the mines and quarries.

The administration of the provisions of the Inflammable Liquids Act occupied appreciably more attention than during the previous year, and these duties were added to by a "rush" period in the erection of service stations and the installation of re-seller and industrial pumps.

Coal.

The quantity of coal produced at the collieries was 97,121.4 tons, valued at £69,877.8, as against 102,970.5 tons, valued at £75,401.125, for the previous year. Exigencies of productive conditions induced a slight increase in the average number of men employed, but two of the principal, and one of the lesser, mines suffered reduced outputs owing to trade slackness.

The Cornwall Company marketed 52,414 tons, valued at £37,165, and operations gave employment to an average of 97 men. Production was chiefly from No. 3 tunnel workings, where the seam maintained its usual width and quality. Investigational operations were continued on a lower seam, from No. 4 tunnel, but settled measures had not been penetrated at the close of the year.

The continuity of productive operations at the Mount Nicholas Colliery was affected by decreased trade, the output receding from 31,065 tons, valued at £20,748, to 25,878 tons, valued at £19,147. Operations gave employment to 79 men.

The Jubilee Company employed 50 men, and produced 13,581 tons of coal, valued at £9645. A decrease of 1990 tons in the output was due to slackness of trade, the pit being sufficiently developed and equipped to meet a market demand in excess of the recorded output.

Production was more continuous at the Fingal Coal Mine, and the leading places were regularly advanced; 1421 tons of coal, valued at £710.5, was marketed, and operations gave employment to three men.

Troubled seam conditions continued to retard developmental operations at the Stanhope Coal Mine, but production advanced to 3143.4 tons, valued at £2357.3, and no difficulty was experienced in marketing the total output of clean coal from this colliery.

Three men were constantly employed on the longwall face at the York Plains Colliery, but the demand for this coal for kiln practices was less active, and the output receded to 684 tons, valued at £853.

Gold.

The estimated production of fine gold was 681.791 oz., valued at £4715.138, as against 899.42 oz., valued at £5643.4, for the previous year. The decline was largely due to a protracted dry season, which operated against continuous exploitation, by sluicing and boxing, of the auriferous alluvials.

Of the gold produced, 242.319 oz. was recovered from the direct milling of lode quartz; 32.982 oz. resulted from the crushing of mine dumps; cyanidation of sands and residues, and experimental cyanidation of sulphidic ore, accounted for 125.95 oz.; 27 oz. accrued from the treatment of battery residues; 204.04 oz. resulted from the exploitation of auriferous alluvials; and 49.5 oz. was extracted from tin oxides recovered from the sluicing of stanniferous alluvials.

Despite the decreased output there was one discovery of moment, greater interest was centred in the possibilities of a resumption of productive operations at previously abandoned mines and areas, and more material activity obtained in regard to the exploitation of occurrences that were not of apparent economic importance during the currency of the gold standard.

A paucity of storm-water, for sluicing and boxing, hampered operations by miscellaneous parties in the Lisle basin and adjacent areas, and production from these auriferous alluvials receded to 61.02 oz., estimated to contain 55.94 oz. of fine gold, valued at £391.8.

Difficulties in connection with water-supply interrupted active sluicing by the Cradle Creek Gold Mining Syndicate and the mine was idle; but an early resumption of productive operations is expected.

An investigational survey of a large area of alluvial ground between Greta and Lisle resulted in the flotation of the Greta (Tasmania) Hydraulic Sluicing Company. Preparations were immediately undertaken for the inauguration of hydraulic mining, and material progress was made in regard to the cutting of a head-water race, clearing, and general plant assemblage. Productive sluicing should be commenced early in the new year.

Marked interest was centred in proposals for a rehabilitation of gold-mining at Alberton. Five tons of quartz was produced by Sowell and party from the surface zone of the reefing series at the Long Struggle Mine, and finally returned 4.15 oz. of fine gold, valued at £30.69. A Tasmanian syndicate is now engaged equipping the mine for a systematic exploration of the reefing series. Small-scale operations were conducted by Matthews and party on the Mount Victoria leases, and an endeavour is being made to introduce capital for the further develop-

ment of this group of the Alberton series. Three parcels of quartz, aggregating 23 tons, were crushed for a battery recovery of 13.95 oz. gold, containing 9.94 oz. of fine gold, valued at £68.998.

Productive operations were not active at New River, but appreciable attention was directed to the economic possibilities of the gold-tin-alluvials constituting the Pera Flats, and a syndicate was capitalised for the systematic exploration of the area.

One parcel of 10 tons of quartz was raised by Krushka Bros. from the reefing series at New River, and returned 3.5 oz. of melted gold, computed to contain 3 oz. of fine gold, valued at £20.175.

A trial parcel of 8 tons of quartz was mined from an ore-vein system at Forester, and was crushed for a battery return of 11.85 oz. of melted gold, containing 9.98 oz. of fine gold, valued at £68.073.

Operations at the Gladstone Gold Mine were confined to an occurrence of gold-bearing quartz on the northerly extension of the Royal Mint workings and to the prospects in a neighbouring adit, but developments were not encouraging, and the mine was closed down. Twenty-four tons of quartz was mined and milled, for a recovery of 5.9 oz. of melted gold, estimated to contain 5.4 oz. of fine gold, valued at £36.315.

Miscellaneous parties were engaged on isolated occurrences of alluvial ground in the Fingal-Mangana-Mathinna areas, and accounted for an output of 36.6 oz. of gold, containing 33.53 oz. of fine gold, valued at £229.883; but there are no developments of moment to be recorded in connection with these operations.

Projected operations at the Argyle Gold Mine at Mangana did not merge into importance. At the old Sovereign workings the main haulage adit is being reopened, and other work is to be carried out to enable a survey to be made of prospects and possibilities under current economic conditions. The Cardinal, Alpine, Towers, and other lines of reef in this area received attention, but no developmental operations were undertaken.

Exploratory operations were continued by Brock Bros. on quartz veins and lode formations, but lode-mining generally at Mathinna was quiescent. The driving of a low-level crosscut adit was continued at the Hinemoa workings, and a late report indicated that the reef had been intersected. The Golden Gate Mine has been held under option, and endeavours have been made to finance a resumption of productive operations. Cyanidation of the battery tailings was resumed, and 1963 tons were treated for a recovery of 110.61 oz. of bullion, containing 76.53 oz. of fine gold and 1.67 oz. of silver, valued at £535.875.

The auriferous series extending from Fingal and Mangana to Mount Victoria occupied the attention of several prospecting parties but no discoveries of moment were reported.

A production of 21.9 oz. of alluvial gold was credited to miscellaneous operators in the Lefroy area, but it is possible that the output was slightly higher, as it is difficult to ascertain actual recoveries by small parties and individual operators.

Operations were continued by the Wallis Company on the Lee-Floyd section. Twenty-eight tons of quartz was topped from the small reef, developed by the previous operators, and was crushed at Beaconsfield for a battery recovery of 20.06 oz. of gold, containing 18.39 oz. of fine gold, valued at £124.6. The main shaft was then enlarged to the 70-foot level, and the reef channelling was driven on without material results.

A company, known as the Lefroy Mines, installed a 5-head stamper battery, and then engaged in milling the dumps at the old Volunteer workings. Inclusive of a small parcel of quartz and formation from the Peden workings, 384 tons of material was crushed, for a recovery of 39.22 oz. of melted gold, computed to contain 31.382 oz. of fine gold, valued at £220.615.

Interest was directed to the exposure of a gold-bearing reef by A. W. McDonald at Back Creek, but the economic importance of the discovery has yet to be determined by exploration.

Operations on the alluvial deposits at Brandy Creek, along Cabbage-tree Hill, and at Eaglehawk Gully, in the Beaconsfield area, were less active.

Assisted prospecting enabled Clay and party to locate the source of shed of alluvial gold on an area northerly from the North Tasmania Mine, and an interesting development resulted. The formation was narrow, and carried only an irregular and broken gold-bearing quartz vein. The formation was sunk on to a depth of 47 feet 6 inches, the prospects at that depth showing improvement. Conditions of working were unfavourable for the continuation of work necessary to prove the lateral and depth persistence of values. A new shaft was therefore

commenced to enable a more satisfactory scheme of development of the discovery to be carried out. A light 4-head stamper battery was installed, and during the period 102 tons of quartz, formation, and surface detritals was crushed, for a recovery of 166.96 oz. of melted gold, containing 142.879 oz. of fine gold, valued at £995.415.

The G.L.K. Gold Mines Proprietary Limited continued with the investigational cyanidation of mineralised sands, accumulated along Blyth's Creek from milling and other operations, and advanced to the stage of installing additional vats and subsidiary units for the treatment of larger quantities, on a normal operating basis.

Experimental direct cyanidation of the sulphidic ore at the North Tasmania Mine was conducted, with results which are ascribed to have been economically encouraging, but no development resulted in regard to a projected resumption of mining operations.

The Salisbury Blue Tier Gold Mines installed a plant for the recovery of gold from the blue pug and soft formations at Blue Tier, but operations were suspended after 20 tons of dump material had been treated, for a recovery of 1.8 oz. of gold.

An appreciable amount of exploration was pursued on the 180-foot level at the Beaconsfield Gold Mines, but developments were not encouraging. Attention was then directed to investigational operations on the Olive Branch line of lode, and results were deemed sufficiently encouraging to warrant the raising of additional capital for further exploration. During the period 12 tons of quartz from the former workings was crushed, for a battery recovery of 8.05 oz. of melted gold, containing 7.38 oz. of fine gold, valued at £50.1.

Negotiations for the capitalisation of a company for the resumption of productive mining at the Tasmania Gold Mine were actively entered upon, but were not concluded at the close of the year.

Small quantities of gold were recovered by R. V. Jillett from the treatment of residues and debris at the site of the old Tasmania battery.

The balance of the recorded production accrued from miscellaneous operations on the auriferous series, and from the treatment of tin oxides recovered from the sluicing of tin-alluvials in areas geologically correlated with the erosion of the auriferous series.

Prospecting and other operations were continued by Messrs. Clark and Casey on an area of auriferous alluvials at Regent Flat, on the Western Tiers.

Tin.

The recorded output of metallic tin was 653.14 tons, as against 663.59 tons for the previous year. The average quarterly quotation inclined from £226.03 to £230.37 per ton, and, on the basis of average prices, the value of the production was £150,276.685, or £17,528.539 in excess of the slightly higher output for the previous year.

A protracted dry season, and consequent shortage of water, was responsible for the reduced output. Despite this, tin-mining was appreciably active, both in regard to lode and alluvial occurrences, and, in sympathy with improved economic conditions, added interest was directed to the development of previously dormant stanniferous areas. Distinct advances were made by the Siamese Tin Syndicate in the establishment of productive operations at St. Helens, by the Briseis Consolidated in the rehabilitation of mining at Derby, by the Endurance Company in the resumption of productive sluicing at South Mount Cameron, by the introduction of capital for the exploitation of the Brookstead lodes and alluvials, and by other interests already established or being attracted to the economic possibilities of the tin occurrences.

The value of tin raised by these companies is based on average market quotations, and does not embrace the financial advantages derived by producers from the prevailing rates of exchange.

Storey's Creek Mine.—The productive prospects of this mine were enhanced by encouraging lode developments on No. 4 level, and an expansion of activities resulted. Some 9912 tons of ore was mined and milled, for an output of 71.82 tons of tin concentrate, containing 49.393 tons of metallic tin, valued at £10,360, and 170.925 tons of wolfram, valued at £23,998. Operations gave employment to an average of 82 men.

Aberfoyle Tin No Liability.—Concurrently with the stoping of the major veins of the ore-vein system, developed from and above No. 1 level of the main shaft workings, a vigorous policy of exploration and development was carried out by this company. The shaft was deepened and timbered to 230 feet, and No. 2 level was opened up at 222 feet, where a connection was made with the adit workings. Development of the vein system was proceeded with at this level, and added appreciably to the

ore reserves. At the 30th June last the proved ore reserves were assessed at 12,788 tons, and the probable reserves at 56,187 tons. At a point 970 feet southerly from the main shaft a prospecting shaft was sunk to 85 feet, and crosscutting was commenced with the object of exploring the limits of the lateral persistence of the vein series in that direction.

The power, milling, and secondary treatment plants were augmented, and further innovations are contemplated to increase the general efficacy of the metallurgical practices.

The ore mined totalled 10,166 tons, and, including a small quantity carried forward from the previous year, 10,269 tons were milled, for a recovery of 242.15 tons of first tin concentrates, 247.25 tons of "seconds," and 18.45 tons of wolfram concentrate. Finished products were stocked for sale at the best available prices, and sales effected were: 221.968 tons of tin concentrates, containing 149.173 tons of metallic tin, valued at £34,259.2; and 21.39 tons of wolfram, valued at £3132. Operations gave employment to an average of 80 men.

P. D. Beard Proprietary Limited.—New capital was introduced for the purposes of the active exploitation of the alluvial deposits and the development of the lode occurrences on the Brookstead tin areas. Sluicing of relatively shallow ground at Kent Creek, Panel Marsh, and Bailey's Marsh should be commenced early in the new year. Provision is being made for an expansion of operations and for later exploration and development of the lode series. A total of 8.9 tons of tin oxide, containing 6.4 tons of metallic tin, valued at £1470, was recovered from sluicing with a temporary plant at Kent Creek.

Small-scale sluicing was continued at Foster's Extended, at Royal George, and resulted in an increased output of 5.9 tons of concentrate, computed to contain 4.3 tons of metallic tin, valued at £990.

A preliminary examination of the lode features and the ore, *in situ*, in the underground workings at the Mount Rex Tin Mine resulted in the formation of a company for the purpose of a systematic exploration of the economic possibilities of the occurrences of complex stanniferous ores. The main shaft has been reconditioned, and the mine is being suitably equipped with winding, compressor, and drilling units for active exploration, which should be commenced early in the new year.

Miscellaneous parties operated on shallow alluvials at Storey's Creek, Gipp's Creek, and Avoca, and accounted for an output of 4.95 tons of tin oxide, estimated to contain 3.5 tons of metallic tin, valued at £795; but there are no developments of moment to be recorded in connection with these operations.

Open-cutting was continued by Aulich and party at the Pyramid Hill Tin Mine, at Upper Scamander, and 3 tons of concentrate was reported to have been recovered from the milling of 152 tons of ore. The produce contained 1.5 tons of metallic tin, valued at £350.

Tin-mining in the St. Helens area was augmented by the inception of productive activities by the Siamese Tin Syndicate. Following a completion of the head-water race, installation of column reticulation services, and the assemblage of operating units, sluicing was commenced on the Argonaut and George River areas, and was extended to embrace five sluicing faces, giving employment to an average of 62 men. Some 359,800 cubic yards of ground was sluiced, for a recovery of 83.6 tons of tin oxide, containing 59.8 tons of metallic tin, valued at £13,771.

Operations were continued by the tribute party at the George's Bay Tin Mine, and several areas of relatively shallow ground, aggregating 45,820 cubic yards, were sluiced, for an output of 11 tons of oxides, containing 7 tons of metallic tin, valued at £1643.17.

Small areas of alluvial ground were sluiced at the Hunt Tin Mine, for a recovery of 4.3 tons of concentrate, estimated to contain 3 tons of metallic tin, valued at £688.

There were no developments of moment in connection with activities by miscellaneous parties, operating on shallow drifts and terrace ground, in the St. Helens district. An average of 37 persons were engaged in this direction, and 25 tons of tin oxide was produced, for a return of 17 tons of metallic tin, valued at £4038.3.

Anchor Tin Syndicate.—A rehabilitation of productive operations at the Anchor Mine by the Anchor Tin Syndicate was of moment to mining activities at Lottah, on the Blue Tier Tinfeld. A low-level adit was driven and connected, by rising, with the floor of one of the old quarry benches, thereby serving a developmental approach for opening up a lower bench of workings on the tin-granites. Concurrently, an ore-breaker, 10-head stamper battery, classifiers, and tabling units were installed. Quarrying and milling were then commenced, and during the period 1956 tons of ore was milled, for a recovery of 9.5 tons

of concentrates, containing 6.8 tons of metallic tin, valued at £1565.2. Results were regarded as satisfactory, and the plant, which is hydraulically operated, is to be augmented by the installation of additional units. The 0.625 ton of tin oxide recovered from cleaning up the floor of the old working bench returned 0.4 ton of metallic tin, valued at £102.58. Operations by the syndicate afforded employment to an average of 13 men.

An appreciable amount of investigational work was conducted into the economic possibilities of establishing large-scale mining on the tin-bearing granites of the Blue Tier, and the investigations are being continued.

The North George Company was floated for the purpose of working an area of valley flats below the Cambria stanniferous granites, but the recoverable yardage-value was unprofitable, and operations were suspended after 23,000 cubic yards of ground had been sluiced, for an output of 4 tons of tin oxide, containing 2.496 tons of metallic tin, valued at £572.319.

Operations were continued on the leader country at the Laffer Tin Mine, and the reported production, from the treatment of 1080 cubic yards of material, was 3.3 tons of tin oxide, containing 2.244 tons of metallic tin, valued at £515.9.

Bryce and party recovered 4.4 tons of oxides from the tin-alluvials at the Niagara Mine, and the metallic content was 2.995 tons of tin, valued at £689.386.

Miscellaneous parties operating on the shallow alluvials and granitic formations in the Lottah-Weldborough-Moorina areas accounted for an output of 80.18 tons of tin oxide, which was estimated to contain 56 tons of metallic tin, valued at £12,943.34. The importance of these operations is to be gauged from the fact that an average of 97 men were afforded employment.

The J.B.L. Syndicate continued to operate on the shallow alluvials of the Weld flats at Moorina, and sluiced 15,200 cubic yards of ground, for a recovery of 2.8 tons of concentrate, computed to contain 2 tons of metallic tin, valued at £452.

Some 24,200 cubic yards of drifts were hydraulicked at the Greenstone Creek Mine, for an output of 2 tons of oxide, containing 1.5 tons of metallic tin, valued at £351.3.

Wagh Tin Mine.—Sluicing operations were continued on the deep bouldery drifts along the Wyniford River. A total quantity of 10,100 cubic yards of ground was treated, for an output of 4.7 tons of tin oxide, containing 3.4 tons of metallic tin, valued at £789.7.

Rajah Tin Mine.—Sluicing was actively pursued by this company on the bouldery drifts along the Wyniford River, and resulted in an output of 22.4 tons of concentrate, containing 16 tons of metallic tin, valued at £3725. Operations gave employment to an average of 21 men.

An exposure of tin-bearing drifts at the old Poverty Point workings, at Bradshaw's Creek, resulted in a resumption of small-scale sluicing. The 3.8 tons of oxide recovered from the treatment of 2300 cubic yards of drifts returned 2.7 tons of metallic tin valued at £631.3. Operations were hampered by the lack of adequate hydraulicking facilities.

Some 13,800 cubic yards of ground was sluiced by Ponting and party at the Eastern Lead Mine, and 4.4 tons of tin concentrate were recovered, for a return of 3 tons of metallic tin, valued at £732.3. A small quantity of alluvial gold was separated from the concentrates, and this was estimated to contain 4.7 oz. of fine gold, valued at £32.135.

Lawry and party, representing the Dorset Syndicate, continued with sluicing operations on the pebbly drifts flanking the Ringarooma River; 27,000 cubic yards of ground being treated, for an output of 7 tons of tin oxide, containing 5.2 tons of metallic tin, valued at £1208. Alluvial gold amounting to 4.5 oz. was separated from the concentrate, and this was valued at £27.3.

Endurance Tin Mining Company.—Material advances were made by this company towards a resumption of productive activities. Following an acquisition of the assets of the Pioneer Company, the power transmission-line was extended to South Mount Cameron, where modern electrically operated pumping units were installed for the delivery and utilisation of water from the Ringarooma River for direct sluicing of the extensive areas of terrace ground, and for the major project of hydraulically exploiting the deep lead which had been definitely fixed by comprehensive boring. Sufficient progress was made with the installation of the plant to enable sluicing of the shallow ground to be commenced early in the new year.

During the period under review productive operations were pursued on the old dumps on the Pioneer section, and in the shallow ground at South Mount Cameron, by tributors; but operations on the former section were terminated at the close of the year. Operations by the various tribute parties, and treatment of residues by

the company, accounted for an output of 33.4 tons of tin oxide, computed to contain 23.8 tons of metallic tin, valued at £5482.6.

At the Clifton Extended, Stevens and party continued with the mechanically controlled nozzling and elevating of the terrace drifts, and sluiced 12,900 cubic yards of ground, for an output of 8.5 tons of concentrate, containing 5.9 tons of metallic tin, valued at £1373.8.

Johnson and party rehabilitated hydraulic mining of the deep drifts overlying the soft granites on Simpson's Estate, and during the year recovered 2.5 tons of tin oxide, containing 1.8 tons of metallic tin, valued at £409.9, from the sluicing of 11,000 cubic yards of ground.

The Mount Cameron Race continued to function as an important factor in mining activities at Gladstone. An average of 32 men was engaged in sluicing the tin-bearing drifts on areas served by the race, and operations resulted in the production of 38.99 tons of tin concentrate, estimated to contain 27.8 tons of metallic tin, valued at £6414.5.

After a lengthy period of "stripping," by a tribute party, at the Monarch Tin Mine, a clean-up returned 3.3 tons of tin oxide, containing 2.3 tons of metallic tin, valued at £537.

From the sluicing of 3700 cubic yards of shallow ground at the Mussel Roe Mine 1.85 tons of oxide was recovered; this contained 1.08 tons of metallic tin, valued at £248.6.

Investigational operations by the Delta Tin Mining Company culminated in the exercise of an option over the lease held by Watts Brothers and in the acquiring of other tracts of alluvial ground at Boobyalla. A steam-operated pumping plant was installed for utilising water from the Ringarooma River for sluicing requirements, and sluicing during the year resulted in an output of 4.7 tons of tin concentrate, containing 3.33 tons of metallic tin, valued at £763.4; 1.19 oz. of alluvial gold was separated from the concentrate. Latterly, consideration was given to augmenting the capacity of the plant for extended operations.

Definite attention has been directed by the Austral Malay Tin Mining Company to the economic possibilities of establishing large-scale productive mining on the tin-alluvials. Rights have been acquired over extensive areas at Pioneer and Boobyalla, and a comprehensive boring campaign is to be prosecuted. Prospect-boring was commenced, and is to be continued by the Moonbah Tin Mines at Boobyalla.

Quite a number of small parties and individual operators continued to be engaged in productive mining of relatively shallow ground in the Pioneer-South Mount Cameron-Gladstone areas, but operations were retarded by frequent shortages of water for sluicing requirements. Operations afforded employment to 62 men, and accounted for an output of 51.15 tons of oxides, computed to contain 35.8 tons of metallic tin, valued at £8251.8.

Briseis Consolidated No Liability.—An acquisition of the leases and assets of the New Briseis Tin Mines by the Briseis Consolidated was of manifold importance to mining at Derby. Attention was immediately directed to a reclamation of the river-diversion channel, to the driving of an overburden tunnel, and to a restoration of the Cascade dam for a rehabilitation of large-scale productive operations.

Activities by the former tribute party at the old Triangle workings and on the cemented drifts at the old No. 1 Mine, and latterly by the new company at the latter workings, resulted in an output of 47.9 tons of tin oxide, which was estimated to contain 34.5 tons of metallic tin, valued at £7946.4.

Phar Lap Tin Syndicate.—No further developmental work was undertaken on the stanniferous formation, activities being confined to alluvials in the locality of the zone of greisenisation. Some 2520 cubic yards of ground was sluiced, for a recovery of 0.8 ton of tin oxide, containing 0.551 ton of metallic tin, valued at £126.864.

Lone Brother Tin Mine.—A party of tributors continued with the double-benching of the high face of basalt-mantled drifts at this mine, and produced 4.021 tons of tin concentrate, estimated to contain 2.4 tons of metallic tin, valued at £555.6.

Several small parties, averaging 35 men, operated on shallow alluvials along the Ringarooma River, Main

Creek, and Cascade River, and at other parts of the Derby area, and recovered 21.3 tons of oxides, computed to contain 14.9 tons of metallic tin, valued at £3438.65; but there are no developments of moment to be recorded in connection with these activities.

Miscellaneous parties continued to exploit the shallow alluvials and granitic formations in the Branhholm area, and accounted for an output of 31 tons of tin oxide, containing 21.7 tons of metallic tin, valued at £4999.87. These operations afforded employment to 40 men, and, although there were no noteworthy developments, the production exceeded that for the previous year.

Arba Tin Mine.—Tribute parties were again occupied on the sluicing of areas of virgin ground and tailings accumulated along Branhholm Creek from earlier mining operations. An estimated quantity of 75,000 cubic yards of ground was treated, for a recovery of 31.25 tons of tin concentrate, which contained 21.9 tons of metallic tin, valued at £5051.8.

Ormuz Mine.—A party of eight men was engaged hydraulically mining the high drifts flanking the Arba workings, and produced 4.1 tons of oxides, containing 2.7 tons of metallic tin, valued at £632.6.

Ruby Flat Mines.—Increased activities on the shallow alluvials and altered granites at these workings resulted in the sluicing of 45,046 cubic yards of ground, for a recovery of 23.4 tons of tin oxide, estimated to contain 16.8 tons of metallic tin, valued at £3860.5.

Productive operations on the quartz-greisen leader formation at the Mount Ruby Mine were hampered by a shortage of water for sluicing purposes. From the treatment of 6300 cubic yards of ground 4.2 tons of concentrate was recovered, and the produce contained 3 tons of tin, valued at £696.6.

Small-scale sluicing was sporadically pursued at Baker's Discovery Mine, for an output of 0.787 ton of tin oxide, containing 0.55 ton of metallic tin, valued at £126.8.

Mount Paris Tin Mine.—Productive mining was not active, but appreciable interest was centred in negotiations for the introduction of capital for the exploitation of the extensive occurrence of stanniferous aplites and greisens on a more equitable basis. The recorded output of tin oxide was 2.03 tons, containing 1.5 tons of metallic tin, valued at £336.

Miscellaneous parties, averaging 18 men, continued with shallow-ground sluicing in the Ringarooma area, and accounted for an output of 7 tons of tin oxide, estimated to contain 5.03 tons of metallic tin, valued at £1158.3. The favourable metal price influenced a continuance of activities by small parties and individual operators in the Star of Peace area. An output of 11.6 tons of tin concentrate, containing 8 tons of metallic tin, valued at £1858.7, was credited to these operations, which afforded employment to 20 men.

Strait Islands.—A further improvement ensued in connection with tin-mining on the Strait Islands, activities being principally directed to the stanniferous alluvials in the Mount Munro and Rook River areas, on Cape Barren Island. Operations, however, were retarded by a paucity of head-water for sluicing purposes, and consideration is now being given to augmenting supplies. Latterly eight men were engaged at the Lode Hill Extended Mine, and 6.9 tons of tin oxide was recovered, for an estimated return of 5 tons of metallic tin, valued at £1156.8. Three men were occupied at the Mount Munro Tin Mine in the production of 1.74 tons of concentrate, containing 1.163 tons of tin, valued at £368.5. Miscellaneous parties accounted for an output of 3.9 tons of tin oxide, estimated to contain 2.7 tons of metallic tin, valued at £634.

Wolfram.

The major producers were the Storey's Creek Mine and the Aberfoyle Tin No Liability, which mines accounted for 170.9 tons, valued at £23,998, and 21.39 tons, valued at £3132 respectively. Operations at these mines have been reviewed under the heading "Tin."

One parcel of 0.06 ton of wolfram, valued at £8.7, was produced by Williams and party from the wolfram load series at Upper Scamander, but no further developments or production ensued.

APPENDIX VI.

REPORT OF THE MOUNT CAMERON WATER-RACE BOARD FOR THE YEAR ENDED 31ST DECEMBER, 1934.

SIR,

We have the honour to submit our report for the year ended 31st December, 1934.

Main Race.

The main race has been maintained in a good general state of repair, and is now fairly free of weed-growth. It is probable that some attention will be required in the removal of weeds and debris during the ensuing year.

As intimated in last year's report, the expenditure in maintenance proved to be less than for some years past.

Syphons and Flumes.

Excepting that known as the Mount Cameron, the condition of the syphons generally is satisfactory. The flumed portion of this syphon is considerably decayed. There is, however, little or no demand at present for water beyond this syphon.

The flumings on the race generally are in a satisfactory condition.

The timber supports in the tunnel under the main road at Gladstone required attention, and, where found necessary, were renewed.

Dams.

The embankments of the dams have been maintained in a good state of repair, and are rendering efficient service.

The Edina and Cybele dams were slightly raised to increase storage capacity, in order to provide for additional conservation of night water.

No. 6 Syphon.

Arising from the discussion at the annual meeting last year, with reference to the replacement of No. 6 syphon, a recommendation was made to the Minister for Mines to the effect that the syphon be replaced by one of 16-gauge galvanised iron, 15 inches diameter. Approval was given thereto, and the necessary funds were made available. Tenders for the construction of the syphon were called at the end of the year.

General.

The year has shown a general expansion in activities resulting from the water service of the race. The revenue received exceeds that of the previous year by £236 8s. 5d. The expenditure, however, was correspondingly high, due to building up the embankments of the Edina and Cybele dams, also expenditure on the channel-keepers' cottages. The total balance for the year amounts to £433 14s. 8d.

Accompanying this report is a general statement of the working of the race, together with statistics relating thereto, also financial statement.

Rainfall.

The registered rainfall for the year was as follows:—

	In.	Points.
Great Mussel Roe	42	87
Little Mussel Roe	42	63

Revenue.

The revenue for the year amounted to £1439 17s. 1d., being an increase of £236 8s. 5d. on the previous year.

Expenditure.

The expenditure for the year amounted to £906 2s. 5d., being an increase of £162 8s. 3d. on the previous year.

Statistics.

The statistics for the year are as follows:—

Average number of claims supplied per week	13
Greatest number supplied in any one week	15
Total number of heads supplied under—	
Fixed or cash scale	6
Royalty or credit scale	3,801
Total	3,807

Tin ore raised—

	Tons.	Cwt.	Qrs.	Lbs.
Under royalty scale	40	3	1	16
Under fixed scale	—	7	2	—
Total	40	10	3	16

Average number of men employed per week, 25

Receipts for Year.

	£	s.	d.
Water sold under fixed scale	23	2	6
Water sold under royalty scale	1,416	14	7
	£1,439	17	1

Expenditure.

	£	s.	d.
Salaries and wages	678	18	4
Travelling expenses	8	18	2
Insurance	7	6	0
Stationery and printing	5	10	9
Stores, &c.	3	17	3
Repairs to races	128	15	6
Repairs to cottages	71	19	6
Miscellaneous	0	16	11
	£906	2	5

J. B. SCOTT, Chairman of the Board.

C. G. RYAN,
GEO. MALLINSON, } Members.

The Honourable the Minister for Mines, Hobart.