

TASMANIA

---

REPORT  
OF THE  
SECRETARY FOR MINES  
FOR  
YEAR ENDING 31st DECEMBER

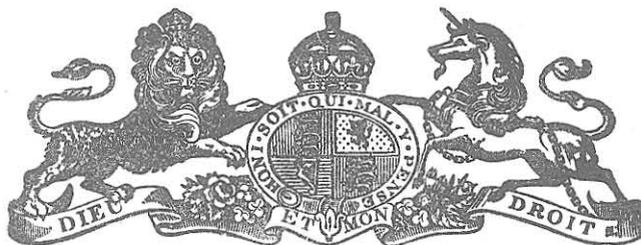
1938

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

---

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

---



TASMANIA:

H. H. PIMBLETT, GOVERNMENT PRINTER, HOBART.

1939

## TABLE OF CONTENTS.

---

	PAGE
Annual Report of the Secretary for Mines .....	5
General Statement .....	5
Drilling .....	6
Bitumen Production .....	7
Aid to Mining .....	7
Sustenance to Prospectors .....	7
Drilling Results .....	9
Quantity and Value of Minerals .....	10
Asbestos .....	11
Barytes .....	11
Bismuth .....	11
Cadmium .....	11
Cement, Carbide, and Limestone .....	11
Coal .....	11
Copper .....	12
Gold .....	12
Iron Pyrites .....	12
Lead .....	13
Limestone .....	13
Nickel .....	13
Ochre .....	13
Osmiridium .....	13
Scheelite .....	14
Shale .....	14
Silver .....	15
Talc .....	15
Tin .....	15
Wolfram .....	15
Zinc .....	16
Value of Metals and Minerals Raised since 1880 .....	16
Statistics of Production .....	16
Statistics of Mining Companies .....	17
Land Applied for: Total Area .....	17
Number and Area of Leases and Licences Issued .....	17
Leases and Licences in Force .....	17
Mining Companies Registered .....	17
Total Revenue .....	17
Net Revenue: Comparative Statement .....	18
Number and Area of Leases, 1924-38. ....	19
Average Annual Prices of Minerals .....	20
Drafting Branch .....	21
Staff .....	21
Conclusion .....	21
Report of Acting Government Geologist .....	22
Report of Chief Chemist and Assayer .....	23
Report of Chief Inspector of Mines .....	25
Accident Statistics .....	26
Report of Chief Inspector of Explosives .....	27
Reports of Inspectors of Mines .....	27
Report of Mt. Cameron Water-race Board .....	35



## REPORT OF THE SECRETARY FOR MINES.

Department of Mines,  
Hobart.

The Honourable the Minister for  
Mines.

SIR,

I HAVE the honour to present my report on the progress of the Mining Industry of the State for the year ended 31st December, 1938.

### APPENDICES.

The following reports with statistical records are appended:—

Acting Government Geologist.  
Chemist and Assayer.  
Chief Inspector of Mines.  
Chief Inspector of Explosives.  
District Inspectors of Mines.  
Mt. Cameron Water-race Board.

### GENERAL STATEMENT.

The term under review was characterised by the settled state of the industry. A general fall in base metal prices had no apparent effect on operations generally, although it would naturally be a matter of much concern to producers. There were no recorded instances that operations were curtailed on that account. The average number of men employed was 5891, being a slight increase over the previous year.

The value of output of minerals and mineral products declined from £3,177,567 to £2,720,214 in Australian currency, a difference of £457,353 from that of 1937. This was offset to some extent by an increase in quantities, which exceeded those of any previous year. Had the previous years' market prices been maintained, the output would have constituted a record in both quantity and value since the inception of mining in the State.

The average price of copper declined 25 per cent. and that of zinc 36 per cent. The small claims, chiefly of alluvial tin, were considerably handicapped by the abnormally dry season experienced.

The Electrolytic Zinc Company was in continuous operation at Risdon in dealing with ore from other sources as well as those produced in the State. Production of zinc was 47,370 tons, valued at £915,617; cadmium, 147 tons, valued at £60,760. In addition, cobalt oxide production was valued at £7841. Tasmanian ores dealt with at the works produced 25,098 tons of zinc valued at £486,729, 49 tons of cadmium valued at £18,636, also .6 tons of cobalt oxide of an estimated value of £243. An average of 1051 men were employed at these works.

The Tasmanian ores treated at Risdon Works came from the Company's Mt. Read-Rosebery

Mines, West Coast. The extensive deposits of complex zinc-lead sulphides, together with the associated minerals of gold, silver, cadmium, and cobalt are treated primarily in the flotation mill at Rosebery. The zinc concentrates are finally dealt with at Risdon, as stated. The combined quantity of crude ore produced was 155,620 tons. Operations gave employment to an average of 265 men.

Copper mining is practically confined to operations of the Mt. Lyell Company, West Coast. For the term 1,084,131 tons of crude ore were treated as against 868,207 tons in the previous year. The recorded output was 12,700 tons of refined copper, with the addition of a small amount recovered from battery residues at Beaconsfield, the total was 12,729 tons, exceeding that of last year by 310 tons. The value is recorded at £580,238, being less by £179,094 than last year. The average number of men employed was 1847, an addition of 113 for the term.

The total production of lead is recorded at 10,652 tons, being an increase of 1535 tons over last year's figures. Estimated value was £163,102, a decrease of £49,390. Of the total, 8576 tons were recovered as galena concentrate at the Electrolytic Zinc Company's flotation plant at Rosebery in the treatment of zinc-lead sulphide ore, the balance from galena deposits at Mt. Farrell, Magnet, and Zeehan fields. The ore was shipped to American and European markets.

The quantity of gold raised increased from 20,276 oz. to 22,200 oz., valued at £158,022, exceeding that of last year by £14,884. Of the total, 12,292 oz. were recovered in the treatment of zinc-lead sulphide ores at Rosebery, the greater portion of the remainder from Mt. Lyell copper refining works.

At the Jane River field, in the remote southwest region, 75 oz. were recovered by prospectors working under primitive conditions. The new track to the field will make it more accessible and afford opportunity for its more active investigation than has hitherto been possible. It will also encourage prospectors to explore the country further afield.

Other sources of gold in minor quantities were derived from shallow drifts in various localities, also appreciable quantities in association with stream tin.

The value of tin raised amounted to £244,037 as against £260,673 in the previous year, representing a decrease of £16,636, notwithstanding the fact that the output rose from 1089 to 1279 tons. The average price of the metal fell from £242 6s 7d. to £189 12s 1d. The east and north-easterly districts were the chief contributors.

The Briseis Mine (Derby), Endurance (South Mt. Cameron), and Siamese (St. Helens) were responsible for most of the output from alluvial deposits, supplemented by many smaller operators spread over a wide area in these divisions.

Lode mining in Avoca district was profitably continued at the Storey's Creek and Aberfoyle Mines respectively. At both these properties power from the State Hydro-Electric Commission's supply is being used, the former being only recently linked up. These mines, which are situated on the southern foothills of Ben Lomond mountain range at an altitude of 2700 feet, are operating on a series of siliceous lodes varying in width from a few inches to seven feet. In some cases the dominant mineral is tin, in others, wolfram. Ore is mined from shaft workings 200 to 300 feet in depth.

In the north-western division the Mt. Bischoff Mine contributed practically the whole output of 137 tons credited to that district.

In the western division 68 tons were raised.

The State's present output of tin exceeds that of any in the Commonwealth. The prospects of greater activity in the future with consequent augmented output are very favourable. The extension of the Hydro-electric power lines to the north-east districts has been a factor responsible for the continuous and more efficient conduct of mining as well as a boon to residents generally.

The silver output is recorded at 1,219,550 oz. valued at £104,671, compared to 1,060,785 oz. valued at £95,770 in the previous year. The chief sources of supply are from Mt. Lyell copper ores, galena concentrates from the complex zinc-lead ores, Mt. Read-Rosebery Mines, the high-grade silver-lead ore, Mt. Farrell Mines, Tullah, the Magnet Mine, Magnet, and lesser intermittent supplies from Zeehan. The average price for silver was 1s.—9·65d. per oz., compared with 1s.—9·06d. per oz. in the previous year.

Cadmium is recovered in the treatment at Risdon Works, Hobart, from zinc concentrates produced at the Electrolytic Zinc Company's West Coast Mines. The output for the term was 49 tons valued at £18,636, compared with 45 tons and £18,161 for the previous year.

The total quantity of iron pyrites shipped to the mainland fertiliser works was 50,277 tons valued at £62,845, compared with 40,630 tons and £43,723 in 1937. The whole of this material was recovered as a by-product in the concentration of copper ores at the Mt. Lyell Mines.

The quantity of wolfram produced was 299 tons of an estimated value of £63,348, compared with 291 tons valued at £71,643 in 1937. A slight decline in the market price was responsible for the lesser value recorded. The greater quantity came from the Story Creek Mine, supplemented by that produced at the Aberfoyle Mine.

Another source of supply in small quantity from alluvial drift, is Moina, Middlesex district.

Scheelite is again being produced at Grassy, King Island. Operations were resumed in the term under review after a lapse of many years, when the property was abandoned and machinery removed. The output for the term was 30·53 tons of an estimated value of £6193.

Following a long term of inactivity, work on the copper-nickel deposits was resumed. A steam operated pumping plant was installed at one of the former shaft workings. After a brief period of investigation, in which ore containing 19·75 tons

of a value of £3604 was raised, further work was discontinued.

A more stable market existed for osmiridium. The price in sterling averaged £15 per oz. Producers were able to obtain £20 per oz. locally. The quantity raised was 190·87 oz. valued at £2976, as against 586 oz. and £9077 in the previous year.

With the installation of a crushing plant at Adamsfield, to deal with the rock formations in which the mineral occurs, it is anticipated that an increase in production will result.

Owing to industrial disputes resulting in the cessation of operations for considerable periods, the output of coal was again seriously dislocated, a total of 83,753 tons, valued at £61,991, were produced, compared with 91,121 tons and £66,883 in the previous year.

The combined total value of carbide, cement, and limestone for the term was £463,882, compared with £442,247 in the previous year. This figure, however, does not represent the full value of all limestone as such or its manufactured products. It includes calcium carbide and cement manufactured and the limestone exported to New South Wales for fluxing purposes at the Broken Hill Proprietary Company's steel works, Newcastle. Considerable quantities of limestone are used at Mt. Lyell smelters, as well as for lime burning in various parts of the State and for agricultural purposes. The quantity shipped to Newcastle from Melrose Quarries, Devonport, was approximately 250,000 tons.

A lease holder carried out some developmental work on a vein of asbestos, Beaconsfield, from which was marketed 4·25 tons, realising £68. Prior to last year when two tons were produced, it is many years since attention was given to these deposits.

The recorded quantity of bismuth raised was ·87 tons which realised £396. It was produced at Moina, Middlesex district. Very little activity is being directed to the development of the deposits occurring there which, in past years, has been the only source of supply.

The quantity of red granite quarried depends upon the demand. Unfortunately, the market is very limited; operations are consequently restricted.

The quarries at Coles Bay are equipped with modern appliances and capable of producing large quantities of high-quality stone. That sold for last year amounted to £885, slightly less than that of the previous year.

As in all countries large quantities of silica sand are used for building purposes. What is recorded in this report represents only what is used as flux at Mt. Lyell smelters and that exported to the mainland from the North-West Coast. The total value is estimated at £3146.

#### DRILLING.

During the year a petrol-driven light-core drill was acquired. It is designed to bore to a depth of 700 feet. The Department now has available for hire or contract boring three diamond core drills to drill to a maximum depth of 2000 feet, 700 feet, and 600 feet respectively; two mechanically operated drills for vertical boring, adapted chiefly for testing deep alluvial deposits and for sub-artesian water supplies, also several hand boring plants.

The plants were kept actively employed in various localities. The chief work carried out by the Department when the drills were not on hire or under contract was testing deep alluvial tin deposits in Gladstone district. The results obtained are recorded herein. The work is still proceeding. The occurrence of a deep lead has been established, extending over a distance of approximately  $2\frac{1}{4}$  miles. Considerable portions of the the area have been bored. The question of its exploitation on the results obtained will depend upon the general facilities available, capital expenditure required, and other factors incidental to its development.

#### BITUMEN PRODUCTION.

##### *Mersey Valley Oil Shale.*

Definite progress has been made in the establishment of an experimental digester plant at Latrobe to treat, for the production of bitumen, a quantity of spore case concentrate produced at the experimental flotation plant at Launceston. The plant in course of erection will form the nucleus of a commercial unit if the experimental work proves to be satisfactory.

#### AID TO MINING.

A considerable number of grants, under the Aid to Mining Act, for the development of claims, provision for plants, water-supply, and other incidental matters relative thereto were dealt with.

Applications for financial assistance for development or productive operations numbered 72, of which 51 were approved, 16 being for purchase of plant.

The total amount authorised was £3800, giving employment to approximately 105 men. Repayments made for these advances totalled £1720. The total value of ore raised by those assisted amounted to £20,000.

#### SUSTENANCE TO PROSPECTORS.

The provision in the Aid to Mining Act to subsidise prospectors was availed of by 33 approved parties, involving the employment, for a temporary period, of 62 men, from three to ten weeks, on a basis payment equal to half wages. No discoveries of note were recorded.

#### THE AID TO MINING ACT, 1927.

##### *Statement of Receipts and Payments of the Mining Trust Fund for the Year ended 31st December, 1938.*

RECEIPTS.			PAYMENTS.		
	£	s. d.		£	s. d.
Balance, 31st December, 1937	2,556	12 2	Sustenance allowance	489	15 0
Tribute royalty	1	16 0	Assistance	1,937	1 0
Repayment of loans	422	15 3	Drilling	2,833	15 6
Refund cost drilling under contract	1,457	2 10	Prospecting—Lefroy	202	13 4
Sale of plant	10	12 0	Miscellaneous—Wages	429	16 0
Hire of plant	8	0 0	Batteries	41	11 0
Excess amount debited, 1937	59	0 0	Miscellaneous expenses	2	13 11
Appropriation Act, 1937-38	3,000	0 0			
			Total payments	5,937	5 9
			Excess receipts over payments	1,578	12 6
	£7,515	18 3		£7,515	18 3

#### THE AID TO MINING (FEDERAL GRANT) TRUST FUND.

(22 Geo. V. No. 92 and 26 Geo. V. No. 8.)

##### *Receipts and Payments Statement.*

RECEIPTS.					PAYMENTS.						
Item.	March, 1935 (commence- ment), to 31st Dec., 1937.			1938. 1st Jan., 1938, to 31st Dec., 1938.		Item.	March, 1935 (commence- ment), to 31st Dec., 1938.			1938. 1st Jan., 1938, to 31st Dec., 1938.	
	£	s.	d.	£	s.		£	s.	d.	£	s.
Provided by Common-wealth	£25,750					Prospecting	1,584	6 6		58	0 0
Provided by State	9,250					Batteries	1,323	9 0		76	15 11
						Advances	21,243	4 0	1,729	11 6	
Other credits:						Plants and operation thereof	6,600	0 0			
Batteries		77	18 3		3 18 9	Metallurgical investigation	1,237	3 4			
Advances		3,915	8 8		1,149 5 5	Roads and tracks	5,900	0 0		132	8 2
Plants and operation thereof		11	18 8			Transport	500	0 0			
Metallurgical investigations		0	7 11			Staff	400	10 10		65	15 0
Staff		0	10 10		0 10 10				38,788	13 8	2,062 10 7
Balance brought forward period ending 31st December, 1937					1,226 6 3	Excess receipts over payments			317	10 8	317 10 8
	£39,006	4 4		£2,380	1 3		£39,006	4 4	£2,380	1 3	



DRILLING RESULTS.

No. 1 DIAMOND DRILL.

Location.—Lefroy (Alluvial Area and Land o' Cakes Reef).

Number of Bores.—5.

Total Depth of Bores.—1661 feet.

Period.—24.1.38 to 4.8.38.

Details:—

No. of Bore.	Location.	Depth.	Values.	Bottomed on.
19	Alluvial Areas	253	—	Sandstone
20	Land o' Cakes	600	Core 282ft. ...— Au. trace Ag. trace Cuttings 507ft.— 510ft. ....— Au. trace Ag. trace Pyritic Conc. 331ft.-332ft....— Au. 13 dwt. 1 grn. per ton Ag. 2 dwt. 14 grn. per ton	Sandstone
21	Land o' Cakes	476	Cuttings 456ft.— 462ft. ....— Au. trace Ag. trace	Slate
22	Land o' Cakes	129	Core 80ft.-87ft.— Au. trace Ag. trace Core 87ft.-92ft.— Au. trace Ag. trace Cuttings 87ft.— 92ft.....— Au. trace Ag. trace Core 92ft.-97ft.— Au. trace Ag. trace Cuttings 92ft.— 97ft.....— Au. trace Ag. trace Core 97ft.-103ft.— Au. trace Ag. trace Cuttings 97ft.— 103ft. ....— Au. trace Ag. trace	Sandstone
23	Land o' Cakes	203	—	Sandstone

CALYX DRILL—continued.

No. of Bore.	Depth to Bedrock.		Average Values. Oz. per c. yd. of 70% Conc.	Best Values.		Oz. per c. yd. of 70% Conc.	
				Depth.			
	ft.	in.		ft.	in.		
42B	126	3	4.4	124	0—126	3	160.3
43B	69	2	Trace	—	—	—	—
44B	103	0	0.21	82	8—93	0	1.12
45B	111	5	12.67	110	0—111	5	360.8
46B	89	6	Trace	—	—	—	—
47B	120	2	15.51	117	4—120	2	390.8
48B	86	3	1.02	82	8—86	3	15.0
49B	118	10	8.12	117	4—118	10	8.12
50B	96	0	Trace	—	—	—	—
51B	118	6	1.27	110	0—117	4	5.73
52B	89	0	Trace	—	—	—	—
53B	95	6	Trace	—	—	—	—
54B	65	0	Trace	—	—	—	—
55B	82	0	Trace	—	—	—	—
56B	84	0	Trace	—	—	—	—
57B	95	0	Trace	—	—	—	—
58B	116	0	1.52	102	8—110	0	14.02
59B	116	10	9.25	102	8—110	0	118.2
60B	107	6	1.23	103	4—107	6	25.43
61B	119	2	11.11	113	8—119	2	185.2
62B	98	5	0.48	7	4—14	8	1.64
63B	109	3	10.79	103	4—109	3	178.8
64B	91	7	2.65	36	8—44	0	17.2
65B	113	8	4.63	110	0—113	8	32.7
66B	125	6	11.24	124	8—125	6	534.0
67B	95	3	1.37	36	8—44	0	9.52
68B	81	3	0.34	62	0—72	4	1.79
69B	104	7	Trace	—	—	—	—
70B	69	4	0.55	14	8—22	0	4.04
71B	110	6	1.13	93	0—110	6	5.85
72B	94	4	0.62	88	0—94	4	3.65
73B	68	1	Trace	—	—	—	—
74B	104	0	1.42	102	8—106	8	11.57
75B	106	8	0.52	103	4—104	0	4.24
76B	119	10	7.55	117	4—119	10	131.0
77B	108	6	Trace	—	—	—	—
78B	104	3	2.05	102	8—104	3	13.45
79B	98	0	2.4	93	0—98	0	29.4
80B	93	0	0.3	31	0—41	4	2.09
81B	124	7	7.57	117	4—124	7	92.2
82B	89	6	Trace	—	—	—	—
83B	67	6	8.33	51	8—62	0	54.4
84B	125	0	9.26	117	4—125	0	97
85B	81	0	Trace	—	—	—	—
86B	118	10	4.37	117	4—118	10	151
87B	75	0	1.4	51	8—62	0	7.23
88B	118	6	11.3	117	4—118	6	198.5
89B	95	0	2.46	93	0—95	0	23
90B	101	3	Trace	—	—	—	—
91B	116	1	20.8	113	8—116	1	446
92B	122	0	29.4	113	8—122	0	377.2
93B	118	6	2.1	110	0—117	4	21.85
94B	112	3	6.25	93	0—103	4	40.7
95B	91	7	Trace	—	—	—	—
96B	101	5	0.54	95	4—101	5	7.52
97B	97	11	Trace	—	—	—	—
98B	106	9	0.9	58	8—66	0	3.95
99B	128	0	4.42	124	0—128	0	51.3
100B	91	5	Trace	—	—	—	—
101B	115	8	0.62	66	0—73	4	2.58
102B	128	7	7.0	124	0—128	7	178.5
103B	142	7	31.0	132	0—139	4	476.54
104B	115	5	1.8	113	8—115	5	65.2
105B	128	0	Trace	—	—	—	—
106B	52	0	0.96	41	4—51	8	4.82
107B	105	0	Trace	—	—	—	—
108B	116	5	1.27	103	4—113	8	9.76
109B	118	3	1.29	117	4—118	3	50.8
110B	122	0	8.37	113	8—122	0	107
111B	128	8	6.26	124	8—128	8	155.17
112B	116	7	Trace	—	—	—	—
113B	138	0	10.0	132	0—138	0	167.22
114B	109	0	2.21	51	8—62	0	17.76
115B	115	9	Trace	—	—	—	—
116B	108	6	Trace	—	—	—	—
117B	64	3	Trace	—	—	—	—
118B	91	5	Trace	—	—	—	—

CALYX AND SURGE DRILLS.

Location.—Gladstone.

Number of Bores.—132.

Total Depth of Bores.—13,809 feet.

Details:—

No. of Bore.	Depth to Bedrock.		Average Values. Oz. per c. yd. of 70% Conc.	Best Values.		Oz. per c. yd. of 70% Conc.	
				Depth.			
	ft.	in.		ft.	in.		
20B	122	2	7.28	115	0—122	2	80.18
21B	102	6	0.68	68	8—80	6	4.72
22B	106	9	1.17	103	6—106	9	14.65
23B	80	0	Trace	—	—	—	—
24B	86	4	Trace	—	—	—	—
25B	98	5	Trace	—	—	—	—
26B	78	6	Nil	—	—	—	—
27B	61	6	Trace	—	—	—	—
28B	74	8	0.20	69	0—74	8	0.9
29B	84	6	0.57	69	0—80	6	2.63
30B	98	5	0.74	92	0—98	5	5.55
31B	38	0	Trace	—	—	—	—
32B	76	6	Trace	—	—	—	—
33B	115	0	8.12	113	8—115	0	77.67
34B	116	4	2.4	110	0—116	4	29.53
35B	121	8	6.93	117	4—121	8	72.89
36B	125	9	9.81	124	0—125	9	160.0
37B	121	4	8.89	117	4—121	3	107.04
38B	124	6	5.0	124	0—124	6	289.86
39B	108	5	1.2	95	4—102	8	7.02
40B	127	8	17.87	124	0—127	8	504.4
41B	96	7	Trace	—	—	—	—

## CALYX DRILL—continued.

## CALYX DRILL—continued.

No. of Bore.	Depth to Bedrock.	Average Values. Oz. per c. yd. of 70% Conc.	Best Values.		No. of Bore.	Depth to Bedrock.	Average Values. Oz. per c. yd. of 70% Conc.	Best Values.	
			Depth.	Oz. per c. yd. of 70% Conc.				Depth.	Oz. per c. yd. of 70% Conc.
119B	111 10	5.18	102 8—110 0	42.2					
120B	89 0	Trace	—	—	140B	109 2	0.25	93 0—103 4	1.26
121B	109 10	9.03	102 8—109 10	78	141B	109 5	Trace	—	—
122B	84 0	Trace	—	—	142B	95 8	1.0	88 0—95 4	4.84
123B	106 3	0.82	102 8—106 3	14.26	143B	106 0	Trace	—	—
124B	98 0	4.27	93 0—98 0	32.85	144B	41 0	Trace	—	—
125B	113 7	9.0	110 0—113 7	94.3	145B	85 3	Trace	—	—
126B	95 3	Trace	—	—	146B	88 0*	Trace	—	—
127B	113 1	4.1	102 8—110 0	22.4	147B	90 0*	Trace	—	—
128B	64 6	Trace	—	—	148B	76 0	Trace	—	—
129B	102 8	1.7	73 4—80 8	6.59	149B	118 10	Trace	—	—
130B	61 3	2.0	51 8—61 3	10.12	150B	97 0	Trace	—	—
131B	71 0	Trace	—	—	151B	124 0	6.74	103 4—113 8	38.8
132B	69 10	1.0	62 0—69 10	5.15					
133B	30 0	Trace	—	—					
134B	43 3	Trace	—	—					
135B	85 0*	Trace	—	—					
136B	70 8	Trace	—	—					
137B	150 11	3.46	146 8—150 11	87.4					
138B	106 3	Trace	—	—					
139B	152 10	Trace	—	—					

\* Not bottomed.

In addition to the above, 48 bores were put down by a hand plant. These ranged in depth from 5 feet to 66 feet, and many were not bottomed. Small amounts of tin occurred in some of the bores, but usual results were "traces" and "nil."

## QUANTITY AND VALUE OF MINERALS.

Statistics relating to the Mining Industry for the Year ended 31st December, 1938.

Mineral.	MINERAL DIVISIONS.						Value.
	Northern and Southern.	Eastern.	North-Eastern.	North-Western.	Western.	Total Quantity.	
Asbestos .....	4.25	...	...	...	...	4.25	£ 68
Bismuth .....	...	...	...	...	871	871	396
Coal .....	13,810	63,024	...	6919	...	83,753	61,991
Cobalt .....	...	...	...	...	387	387	243
Copper .....	17,227	...	...	...	12,712.19	12,729.417	580,238
Cadmium .....	...	...	...	...	49	49	18,636
Carbide, Cement, and Limestone .....	31,894	...	...	337,164	5751	374,809	463,882
Gold .....	1471.703	52.122	151.574	187.684	20,336.878	22,199.961	153,022
Granite (Red) .....	...	173	...	...	...	173	835
Lead .....	...	...	...	290.3	10,361.91	10,652.21	163,102
Nickel .....	...	...	...	...	19.75	19.75	3604
Osmiridium .....	172.22	...	...	18.65	...	190.87	2976
Pyrites .....	...	...	...	...	50,277	50,277	62,845
Scheelite .....	...	...	...	30.53	...	30.53	6193
Silica .....	...	...	...	105	6781	6886	3146
Silver .....	...	...	...	35,380	1,184,170	1,219,550	104,671
Tin .....	4.251	360.770	708.161	137.250	68.185	1278.617	244,037
Wolfram .....	...	287.233	...	11.871	...	299.104	63,348
Zinc .....	...	...	...	268	25,098	25,366	356,452
Total Value .....	...	...	...	...	...	...	£2,294,735
Total Value Australian Currency .....	...	...	...	...	...	...	£ A. 2,702,214
Average Number of Men Employed .....	1517	653	474	678	2569	5891	...

The Electrolytic Zinc Co. of Aust. Ltd. recovered 22,450 tons of Zinc, valued at £435,376; 35.02 tons of Cadmium, valued at £14,475; and 5867 tons of Cobalt Oxide, valued at £243, from Tasmanian ores. Actual recoveries from other than Tasmanian ores were 47,370 tons of Zinc, valued at £915,617; 147,176 tons of Cadmium, valued at £60,760; and 18,962 tons of Cobalt Oxide, valued at £7841. The average number of men employed at Risdon was 1051.

**ASBESTOS.**

RETURN showing the Quantity and Value of Asbestos produced from 1899 to 1938 inclusive.

Year	Quantity.	Value.
	Tons.	£
1899.....	200	363
1900.....	128	113
1901.....	46·5	45
1902-1915 .....	—	—
1916.....	15	30
1917.....	271	271
1918.....	2854	5008
1919.....	51	1275
1920-1936 .....	—	—
1937.....	2	29
1938.....	4·25	68
Total.....	3571·75	£7202

**BARYTES.**

RETURN showing the Quantity and Value of Barytes Produced during the Years 1916 to 1938 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
1934-1935 .....	—	—
1936.....	33	66
1937.....	76	174
1938.....	—	—
Total.....	1926	£7188

**BISMUTH.**

RETURN showing the Quantity and Value of Bismuth produced from 1904 to 1938 inclusive.

Year.	Quantity.	Value.
	Tons.	£
1904.....	·3	15
1905.....	3·5	800
1906.....	·3	24
1907.....	·175	27
1908.....	3·75	462
1909.....	2·9	980
1910.....	10·70	4249
1911.....	14·395	5758
1912.....	7·59	2646
1913.....	5·08	1627
1914.....	5·619	1666
1915.....	5·5	1203
1916.....	3·51	1059
1917.....	4·212	895
1918.....	4·608	1038
1919.....	1·77	573
1920.....	·10	9
1921.....	·05	21
1922.....	—	—
1923.....	—	—
1924.....	—	—
1925.....	—	—
1926.....	—	—
1927.....	—	—
1928.....	—	—
1929.....	—	—
1930.....	·97	475
1931.....	1·75	1015
1932.....	1·02	541
1933.....	1·32	705
1934.....	—	—
1935.....	·328	146
1936.....	—	—
1937.....	·22	78
1938.....	·871	396
Total.....	80·538	£26,408

**CADMIUM.**

The quantity recovered was 49 tons valued at £18,636, compared with 45 tons valued at £18,161 for 1937.

RETURN showing the Quantity and Value of Cadmium Recovered during the Years 1936 to 1938.

Year.	Quantity.	Value.
	Tons.	£
1936.....	33·64	10,799
1937.....	45	18,161
1938.....	49	18,636
Total.....	127·64	£47,596

**CEMENT, CARBIDE, AND LIMESTONE.**

The combined value of output from these three industries amounted to £463,882, as compared with £442,247 for 1937.

**COAL.**

RETURN showing the Quantity and Value of Coal raised from 1880 to 1938 inclusive.

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
1935.....	123,714	86,204
1936.....	132,264	92,269
1937.....	91,121	66,883
1938.....	83,753	61,991
Total.....	£3,696,435	£2,860,755

## COPPER.

The production for the year was 12,729·417 tons, valued at £580,238.

RETURN showing the Quantity and Value of Copper in Blister Copper and Copper Ore during the Years 1919 to 1938 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	267,126	6·5	216	8208·5	267,342
1935...	13,036	464,007	—	—	13,036	464,007
1936...	13,040	556,734	—	—	13,040	556,734
1937...	12,382	757,311	37·92	2021	12,419·92	759,332
1938...	12,700·6	578,893	28·802	1345	12,729·417	580,238
Total	169,590·7	9,675,236	106·712	5337	169,697·427	9,680,573

The Mount Lyell Mining and Railway Company Limited.  
Return for the Calendar Year 1938.

Ore and metal-bearing material smelted:—	Tons (Dry).
Source of Material.	
Ore:—From the Company's North Lyell Mine Concentrates:—From the Company's North Lyell Mine, Lyell Comstock Mine, Crown Lyell Mine, and West Lyell Mines ore	7,348
Purchased ore	51,467
Total	58,822

Source of Material.	Tons (Dry).
Limestone delivered to works (tons)	5,751A
Silica delivered at works	6,781A
Pyritic concentrate shipped from Regatta Point (tons), approximate value £62,847	50,278A
Blister copper produced, 12,791 tons, containing:	
Copper (tons)	12,700
Silver (oz.)	67,176
Gold (oz.)	7,919
Approximate value £641,170 (sterling).	

Average number of men employed—	
Mining Department—At the Company's	
North Lyell Mine	247
Ditto, Lyell Comstock Mine	182
Ditto, Crown Lyell Mine	51
Ditto, West Lyell	332
Miscellaneous	203
Reduction Works Department (including Lake Margaret)	672
Railway Department—Mount Lyell Railway	138
Total	1825

Copper produced from the inception of the Company to the 31st December, 1938, 328,180 tons.

Silver produced from the inception of the Company to the 31st December, 1938, 15,075,060 oz. (fine).

Gold produced from the inception of the Company to the 31st December, 1938, 444,785 oz. (fine).

Dividends paid during the year, £116,250=1s. 6d. per share.

Dividends paid from the inception of the Company to the 31st December, 1938, £5,871,569.

## GOLD.

The quantity won was 22,199·961 oz., fine, valued at £158,022, as compared with 20,276·31 oz., valued at £143,138 for 1937.

RETURN showing the Quantity and Value of Gold won from 1880 to 1938 inclusive.

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
1935	8342·68	59,255
1936	17,600·47	123,383
1937	20,276·31	143,138
1938	22,199·961	158,022
Total	2,006,366·831	£8,297,930

## IRON PYRITES.

RETURN showing the Quantity and Value of Iron Pyrites produced during the Years 1915 to 1938 inclusive.

Year.	Quantity.	Value.
	Tons.	£
1915	12,835·59	8945
1916	14,005·084	13,597
1917	7,685·549	7137
1918	5,105·600	4667
1919	3,456·95	4288
1920	4,440	7346
1921	606·5	2579
1922	8,276	18,620
1923	11,882	26,737
1924	—	—
1925	—	—
1926	—	—
1927	—	—
1928	—	—
1929	—	—
1930	—	—
1931	506·7	253
1932	274	150
1933	1498	1498
1934	12,030	12,030
1935	25,555	25,555
1936	33,711	33,711
1937	40,630	43,723
1938	50,277	62,845
Total	232,774·973	£273,681

## LEAD.

The output was 10,652·21 tons, valued at £163,102, as compared with 9116·62 tons, valued at £212,492 for 1937.

RETURN showing the Quantity and Value of Lead included in Silver-Lead during the Years 1919 to 1938 inclusive.

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
1935.....	1488	21,390
1936.....	7563·04	134,413
1937.....	9116·62	212,492
1938.....	10,652·21	163,102
Total.....	91,780·332	£2,114,381

## LIMESTONE.

RETURN showing the Quantity and Value of Limestone produced during the Years 1923 to 1936 inclusive.

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
1935.....	254,438	68,357
1936.....	262,301	71,243
Total.....	1,908,679	£1,240,194

## NICKEL.

RETURN showing the Quantity and Value of Nickel produced from 1927 to 1938 inclusive.

Year.	Quantity.	Value.
	Tons.	£
1927.....	86·2	14,656
1928.....	10	1697
1929.....	85·44	14,765
1930.....	11·76	1999
1931.....	0·2	45
1932.....	0·55	136
1933.....	8·65	1948
1934.....	—	—
1935.....	—	—
1936.....	—	—
1937.....	—	—
1938.....	19·75	3604
Total.....	222·55	£38,850

## OCHRE.

RETURN showing the Quantity and Value of Ochre produced during the Years 1918 to 1938 inclusive.

Year.	Quantity.	Value.
	Tons.	£
1918.....	100	200
1919.....	—	—
1920.....	—	—
1921.....	14	56
1922.....	—	—
1923.....	—	—
1924.....	20	50
1925.....	—	—
1926.....	38	69
1927-1938.....	—	—
Total.....	172	£375

## OSMIRIDIUM.

The quantity of metal won during the year was 190·87 oz., valued at £2976, as compared with 586·42 oz., valued at £9077 for 1937.

RETURN showing the Quantity and Value of Osmiridium produced during the Years 1910 to 1938 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
1935.....	235	2103
1936.....	280·6	3862
1937.....	586·42	9077
1938.....	190·87	2976
Total.....	29,004·564	£625,734

The following table gives particulars of osmiridium won from Adamsfield since its discovery up to 31st December, 1938:—

Period.	Quantity.	Value.
Quarter ending—	Oz. dwt. gr.	£ s. d.
30th June, 1925 .....	9 1 12	281 8 11
30th September, 1925...	625 19 9	20,144 10 11
31st December, 1925 ...	2238 5 9	68,757 1 4
31st March, 1926 .....	992 13 7	23,339 0 1
30th June, 1926 .....	633 12 20	12,202 18 4
30th September, 1926...	862 18 16	8475 8 11
31st December, 1926 ...	555 6 6	5539 1 3
31st March, 1927 .....	203 9 11½	1909 5 7
30th June, 1927 .....	142 3 9	1706 0 6
30th September, 1927...	93 16 6	1132 1 6
31st December, 1927 ...	113 10 8	1362 0 0
31st March, 1928 .....	442 8 9	10,509 18 2
30th June, 1928 .....	261 19 7	6529 9 1
30th September, 1928...	551 16 2	15,350 18 0
31st December, 1928 ...	293 5 0	7840 11 4
31st March, 1929 .....	168 9 8	4147 6 4
30th June, 1929 .....	262 7 16	5683 4 7
30th September, 1929...	292 2 23	7905 14 9
31st December, 1929 ...	313 2 17	6208 3 0
31st March, 1930 .....	186 9 17	3278 17 0
30th June, 1930 .....	67 6 11	1300 12 1
30th September, 1930...	126 16 9½	1898 4 10
31st December, 1930 ...	347 12 17	4302 11 5
31st March, 1931 .....	240 19 14	4008 2 4
30th June, 1931 .....	251 9 6	3104 14 9
30th September, 1931...	251 10 15	3428 14 6
31st December, 1931 ...	354 12 3	4741 11 10
31st March, 1932 .....	250 5 21	3372 19 9
30th June, 1932 .....	136 12 19	1504 8 9
30th September, 1932	80 19 3	869 2 8
31st December, 1932...	123 7 18	1038 2 1
31st March, 1933 .....	161 0 0	1368 0 0
30th June, 1933 .....	162 0 0	1458 0 0
30th September, 1933...	153 0 0	1364 0 0
31st December, 1933...	60 0 0	540 0 0
31st March, 1934 .....	148 5 0	1408 0 0
30th June, 1934 .....	107 15 0	969 0 0
30th September, 1934	71 14 0	645 0 0
31st December, 1934...	160 0 0	1600 0 0
31st March, 1935 .....	40 0 0	350 0 0
30th June, 1935.....	12 0 0	108 0 0
30th September, 1935	127 9 10	1147 4 7
31st December, 1935...	55 0 0	495 0 0
31st March, 1936 .....	30 0 0	270 0 0
30th June, 1936.....	30 0 0	285 0 0
30th September, 1936..	133 12 0	2004 0 0
31st December, 1936...	65 0 0	1105 0 0
31st March, 1937 .....	54 0 0	918 0 0
30th June, 1937.....	150 10 0	2709 0 0
30th September, 1937..	48 10 0	897 0 0
31st December, 1937...	76 1 15	723 0 0
31st March, 1938 .....	28 10 0	413 0 0
30th June, 1938.....	13 0 0	174 0 0
30th September, 1938	33 7 0	540 0 0
31st December, 1938...	97 7 0	1558 0 0
Total.....	13,492 11 14	£264,920 9 2

## SCHEELITE.

RETURN showing the Quantity and Value of Scheelite produced during the Years 1917 to 1938 inclusive.

Year.	Quantity.	Value.
	Tons.	£
1917.....	69	12,130
1918.....	216	39,252
1919.....	198·98	43,181
1920.....	105·09	17,905
1921-1937.....	—	—
1938.....	30·53	6193
Total.....	619·6	£118,661

## SHALE.

RETURN showing the Quantity and Value of Shale produced during the Years 1910 to 1938 inclusive.

Year.	Quantity.	Value.
	Tons.	£
1910.....	364	214
1911.....	500	250
1912.....	—	—
1913.....	130	130
1914.....	75	75
1915.....	—	—
1916.....	1286	1286
1917.....	—	—
1918.....	—	—
1919.....	600	900
1920.....	140	172
1921.....	868	1506
1922.....	40	100
1923.....	1101	1094
1924.....	1576	1526
1925.....	820	559
1926.....	2127	1475
1927.....	3150	2050
1928.....	2595	1297
1929.....	4299	2982
1930.....	5428	3490
1931.....	1402	600
1932.....	1097	1074
1933.....	3401	1483
1934.....	3276	1630
1935.....	30	15
1936-1938 .....	—	—
Total.....	34,305	£23,908

RETURN showing the Quantity of Oil Distilled from Shale.

Year.	Name of Company.	Gallons.
1910.....	Tasmanian Shale and Oil Company.....	4800
1915.....	Railton-Latrobe Shale Oil Co. N.L. ....	24,000
1927-1928 ...	Australian Shale Oil Corporation.....	65,000
1929.....	Goliath Portland Cement Company ...	2200
1930.....	Goliath Portland Cement Company ...	20,101
	Tasmanite Shale Oil Company Ltd.....	35,000
1931.....	Tasmanite Shale Oil Company Ltd.....	31,915
1932.....	Tasmanite Shale Oil Company Ltd.....	79,236
1933.....	Tasmanite Shale Oil Company Ltd.....	56,958
1934.....	Tasmanite Shale Oil Company Ltd.....	37,905
1935.....	Tasmanite Shale Oil Company Ltd.....	—
1936-1938 ...	Tasmanite Shale Oil Company Ltd.....	—
	Total .....	357,115

## SILVER.

The output was 1,219,550 oz. (fine), valued at £104,671 as compared with 1,060,785 oz., valued at £95,770 for 1937.

RETURN showing the Quantity and Value of Silver contained in Silver-Lead and Blister Copper during the Years 1919 to 1938 inclusive.

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	9650	391,732	25,754
1932	301,854	24,399	161,634	12,905	463,488	37,304
1933	361,768	29,394	127,562	10,414	489,330	39,808
1934	194,747	18,401	89,940	8726	284,687	27,127
1935	191,044	24,780	132,857	17,543	323,901	42,323
1936	803,369	71,886	103,189	9150	906,458	81,036
1937	977,552	88,252	83,233	7518	1,060,785	95,770
1938	1,152,568	91,913	66,982	5758	1,219,550	104,671
Total	10,504,741·5	1,272,243	2,692,022	364,123	13,196,763·55	1,636,366

## TALC.

RETURN showing Quantity and Value of Talc produced during the Years 1928 to 1938 inclusive.

Year.	Quantity.	Value.
	Tons.	£
1928	32	96
1929	23	45
1930	13·35	53
1931	15	58
1932	5	17
1933	8·75	22
1934	5·5	16
1935	—	—
1936	3	8
1937-1938	—	—
Total	105·6	315

## TIN.

The output was 1278·617 tons, valued at £244,037, as compared with 1089·839 tons, valued at £260,673 for 1937.

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 1938 inclusive.

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
1935	1131*	258,919
1936	1004·06*	206,656
1937	1089·839*	260,673
1938	1278·617*	244,037
Total	145,794·772	£17,711,756

\* Metallic Tin.

## WOLFRAM.

RETURN showing the Quantity and Value of Wolfram produced during the Years 1899 to 1938 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

## Quantity and Value of Wolfram—continued.

Year.	Quantity.	Value.
	Tons.	£
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
1935.....	232	29,345
1936.....	207·13	28,323
1937.....	291·04	71,643
1938.....	299·104	63,348
Total.....	3592·016	£482,080

## ZINC.

RETURN showing the Quantity and Value of Zinc produced during the Years 1919 to 1938 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
1931-1935.....	—	—
1936.....	18,769	283,105
1937.....	23,481	525,824
1938.....	25,366	356,452
Total.....	100,527·69	£2,138,582

## Electrolytic Zinc Company of Australia Ltd.—

Return for the calendar year 1938:—

Production of slab zinc .....	Tons.
Production of metallic cadmium .....	47,370
	147·1769

The above is from ores other than Tasmanian.

The average number of men employed at Risdon was 1051.

West Coast Division.—The production on the West Coast properties during the year was:—

Slab zinc .....	Tons.
Metallic cadmium .....	25,098
	49

The average number of men employed was 492.

## VALUE OF METALS AND MINERALS RAISED.

RETURN showing Value of Metals and Minerals Raised in Tasmania from 1880 to 1938 inclusive.

Mineral or Metal.	Value.
	£
Asbestos .....	7202
Barytes .....	7188
Bismuth .....	26,408
Cadmium.....	68,510
Carbide, Cement, and Limestone.....	906,129
Carbide to 1936 (now under Carbide, Cement, and Limestone) .....	1,212,207
Cement to 1936 (now under Carbide, Cement, and Limestone) .....	2,004,014
Coal .....	2,860,755
Cobalt .....	243
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) .....	9,680,573
Gold .....	8,297,930
Granite (red) .....	5017
Ilmenite .....	1256
Iron Ore .....	25,737
Iron Pyrites .....	273,681
Lead (from 1919) .....	2,114,381
Limestone to 1936 (now under Carbide, Cement, and Limestone) .....	1,240,194
Nickel .....	38,850
Ochre .....	375
Osmiridium .....	625,734
Scheelite .....	118,661
Silica .....	9996
Shale.....	23,908
Silver-Lead to 1918 (now shown as Silver and Lead).....	6,429,291
Silver .....	1,636,366
Talc .....	315
Tin .....	17,711,756
Wolfram .....	482,080
Zinc .....	2,138,582
Unenumerated prior to 1894 .....	31,988
Total .....	£72,469,463

## STATISTICS OF PRODUCTION.

RETURN showing the Annual Value of Mineral Products for the State of Tasmania from 1880 to 1938 inclusive.

Year.	Value.	Year.	Value.
	£		£
1880 .....	554,031	1910 .....	1,432,193
1881 .....	602,723	1911 .....	1,349,497
1882 .....	556,306	1912 .....	1,493,502
1883 .....	560,873	1913 .....	1,415,700
1884 .....	468,302	1914 .....	1,007,038
1885 .....	518,885	1915 .....	1,225,575
1886 .....	489,966	1916 .....	1,521,050
1887 .....	593,256	1917 .....	1,582,322
1888 .....	616,733	1918 .....	1,597,694
1889 .....	504,718	1919 .....	1,301,090
1890 .....	444,210	1920 .....	1,421,104
1891 .....	528,388	1921 .....	822,851
1892 .....	526,909	1922 .....	1,013,415
1893 .....	627,909	1923 .....	1,219,456
1894 .....	732,764	1924 .....	1,496,804
1895 .....	575,692	1925 .....	1,700,861
1896 .....	662,058	1926 .....	1,808,847
1897 .....	1,006,140	1927 .....	1,621,027
1898 .....	1,071,084	1928 .....	1,593,828
1899 .....	1,660,622	1929 .....	1,790,653
1900 .....	1,888,695	1930 .....	1,270,114
1901 .....	1,763,896	1931 .....	894,986
1902 .....	1,378,406	1932 .....	897,168
1903 .....	1,354,044	1933 .....	1,053,373
1904 .....	1,379,204	1934 .....	1,037,351
1905 .....	1,729,129	1935 .....	1,387,511
1906 .....	2,257,147	1936 .....	1,979,637
1907 .....	2,277,159	1937 .....	2,653,822
1908 .....	1,650,027	1938 .....	2,294,735
1909 .....	1,574,995	Unenumerated prior to 1894 .....	31,988
		Total.....	£72,469,463

## STATISTICS OF MINING COMPANIES.

RETURN showing the Amounts Paid in Dividends by Mining Companies during the Year ending 31st December, 1938.

Mines.	Dividends.
	£
Copper .....	47,417
Gold .....	...
Tin .....	48,283
Silver .....	...
Coal .....	...
Total .....	£95,700

RETURN showing the Total Area of Land and Number of Sluiceways of Water Applied for during the Year ending December, 1938.

Mineral.	Number.	Sluiceways.	Area.
			Acres.
Asbestos .....	1	...	10
Bismuth .....	...	...	...
Barytes .....	...	...	...
Clay .....	1	...	2
Coal .....	8	...	546
Copper .....	...	...	...
Gold .....	19	...	306
Granite .....	1	...	36
Iron .....	9	...	244
Lead .....	1	...	80
Limestone .....	1	...	60
Manganese .....	1	...	10
Minerals .....	3	...	40
Sand .....	1	...	5
Silver .....	3	...	72
Stone .....	...	...	...
Tin .....	56	...	2580
Wolfram .....	2	...	80
Machinery Sites and Mining Easements ...	2	...	4
Water-rights and Dam Sites .....	42	83	70
Licences to search for Coal .....	2	...	1180
Total .....	153	83	5325

RETURN showing Total Number and Area of Leases and Licences Issued during the Year ending 31st December, 1938.

Mineral.	Leases.	Sluiceways.	Area.
			Acres.
Barytes .....	...	...	...
Clay .....	...	...	...
Copper-Nickel .....	2	...	100
Coal .....	7	...	430
Dolomite .....	...	...	...
Gold .....	17	...	346
Iron Ore .....	1	...	20
Lead-Zinc .....	1	...	80
Minerals .....	17	...	666
Scheelite .....	1	...	10
Silver-Lead .....	26	...	1289
Stone .....	1	...	40
Tin .....	48	...	2333
Wolfram .....	7	...	175
Water-rights and Dam Sites .....	41	86	...
Licences to Search for Coal and Oil .....	2	...	1180
Mining Easements and Machinery Sites .....	7	...	91
Total .....	178	86	6760

RETURN showing the Total Number of Leases and Licences in Force on 31st December, 1938.

Mineral.	Number.	Number of Sluiceways.	Area.
			Acres.
Antimony .....	...	...	...
Asbestos .....	...	...	...
Barytes .....	4	...	174
Bismuth .....	...	...	...
Coal .....	31	...	4488
Clay .....	3	...	78
Copper-Nickel .....	8	...	419
Dolomite .....	3	...	365
Granite .....	2	...	15
Gold .....	117	...	2491
Gravel .....	1	...	4
Iron .....	5	...	221
Limestone .....	4	...	240
Molybdenum .....	...	...	...
Minerals .....	73	...	6791
Marble .....	...	...	...
Osmiridium .....	1	...	10
Scheelite .....	3	...	281
Shale .....	3	...	117
Silica .....	1	...	40
Silver .....	41	...	1711
Stone .....	4	...	94
Tin .....	444	...	13,139
Wolfram .....	7	...	214
Mining Easements and Machinery Sites .....	97	...	630
Licences to Search .....	2	...	1180
Water Licences .....	448	1834	2191
Total .....	1302	1834	34,893

RETURN showing the Mining Companies Registered during the year ending 31st December, 1938.

Number of Companies.	Capital.
1	£50,000

In addition to the above, 8 Agents for Foreign Companies and 2 Syndicates under Part V.A of the Mining Companies Amendment Act, 4 Geo. V. No. 44, were registered.

RETURN showing the Total Amount of Rents, Fees, &c., received by the Mines Department during the Year ending 31st December, 1938.

Head of Revenue.	Amount.
	£ s. d.
Rent of Auriferous and Mineral Lands .....	8645 2 9
Fees, Auriferous and Mineral Lands .....	622 18 9
Survey Fees .....	744 13 5
Fees under the Explosives and Inflammable Liquids Act .....	1909 9 11
Total .....	£11,922 4 10

*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 1938 inclusive.*

Year.	Amount.	Year.	Amount.
	£ s. d.		£ s. d.
1882.....	23,077 1 9	1910.....	22,221 18 0
1883.....	15,439 14 5	1911.....	20,556 15 10
1884.....	6981 11 10	1912.....	17,639 19 11
1885.....	11,070 5 7	1913.....	19,410 17 8
1886.....	12,523 10 4	1914.....	14,087 0 6
1887.....	14,611 11 5	1915.....	17,679 3 6
1888.....	23,502 8 4	1916.....	14,678 19 10
1889.....	17,254 9 0	1917.....	14,669 7 2
1890.....	26,955 4 9	1918.....	17,833 14 9
1891.....	37,829 16 5	1919.....	15,388 7 7
1892.....	17,568 18 4	1920.....	16,767 11 6
1893.....	16,971 9 2	1921.....	11,248 14 11
1894.....	16,732 7 7	1922.....	14,184 7 3
1895.....	15,323 1 9	1923.....	13,224 11 9
1896.....	20,901 13 2	1924.....	14,678 13 11
1897.....	25,631 0 3	1925.....	14,229 8 7
1898.....	33,661 13 9	1926.....	15,163 15 7
1899.....	24,696 10 5	1927.....	16,887 9 9
1900.....	28,380 11 10	1928.....	14,313 12 0
1901.....	21,569 5 2	1929.....	14,665 10 7
1902.....	19,471 0 1	1930.....	11,166 7 2
1903.....	17,776 14 3	1931.....	11,520 1 10
1903, 1 July to 31 Dec. ....	14,758 17 1	1932.....	10,097 18 6
1904, Jan. to Dec. ....	16,631 8 2	1933.....	9459 6 9
1905.....	20,208 17 0	1934.....	11,166 2 11
1906.....	24,136 12 5	1935.....	10,548 10 0
1907.....	24,794 7 7	1936.....	11,023 11 3
1908.....	20,311 3 0	1937.....	12,206 10 1
1909.....	22,804 1 5	1938.....	11,177 11 5

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, 1924 to 1938, inclusive.*

Nature of Lease.	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.		In force on 31st Dec., 1935.		In force on 31st Dec., 1936.		In force on 31st Dec., 1937.		In force on 31st Dec., 1938.	
	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.	No.	Area.
For Minerals, Silver, Tin, &c.	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	500	Acres. 19,802	585	Acres. 21,096	603	Acres. 21,368	595	Acres. 23,497
For Coal, Slate, Shale, &c.	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	47	6635	48	7249	50	6778	43	4904
For Gold Dredging Claims	91	1829	70	1340	42	870	38	749	40	830	36	746	40	830	57	999	77	1987	128	3879	167	3987	162	3190	155	3183	22	2619	117	2491
Mining Easements	20	289	20	195	42	363	41	502	52	626	60	756	30	353	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Machinery Sites	77	592	77	570	68	494	77	484	77	475	55	409	73	504	77	434	48	316	79	475	94	578	107	629	112	634	112	663	97	630
Licences to search for Coal or Oil	26	115	27	112	25	150	21	110	29	169	25	171	18	117	20	209	18	120	17	119	—	—	—	—	—	—	—	—	—	—
Water-rights, Mineral and Gold	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	2	4200	5	10,900	6	10,600	2	1180
	338	1990 & 152 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	447	2092 & 1835 sluice-heads	466	1963 & 2034 sluice-heads	467	2243 & 2049 sluice-heads	448	1834 & 2191 sluice-heads

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

	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.	Average for 1935.	Average for 1936.	Average for 1937.	Average for 1938.
	£ s. d.													
Copper—Standard, spot: per ton .....	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	31 18 1	36 12 6	60 5 9	45 16 9
Lead—Soft Foreign: per ton .....	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	14 5 8	16 7 9	23 6 1	15 6 5
Spelter: per ton .....	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	14 0 0	14 6 11	22 6 8	14 1 7
Tin—Standard, spot: per ton .....	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	225 14 6	208 6 6	242 6 7	189 12 1
Silver—Standard, spot: per oz. ....	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	s. d. 1 9·951	s. d. 1 9·647	s. d. 1 9·65	s. d. 1 9·066
Osmiridium: per oz. ...	...	£ 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	£ s. d. 9 0 0	£ s. d. 12 10 0	£ s. d. 15 12 6	£ s. d. 15 0 4
Wolfram: per ton .....	...	70 0 0	61 10 0	104 5 0	144 5 0	105 0 9	64 0 0	62 16 0	81 2 6	94 0 0	175 0 0	161 5 0	325 19 0	289 0 0
Nickel: per ton .....	...	...	...	...	171 0 0	170 0 0	183 15 0	234 7 6	235 0 0	225 0 0	200 0 0	178 4 0	145 0 0	182 10 0

## MINES DRAFTING BRANCH.

The number of working plans in use and which are all kept up to date is 215, as compared with 211 in 1937.

Instructions issued to surveyors .....	129
Diagrams received from surveyors .....	124
Diagrams drawn on leases .....	354
Consolidated and other diagrams drawn .....	12
Lithographs entered to date .....	104
Various tracings prepared .....	64
Tracings for Launceston .....	166
Manuscripts entered to date .....	11
New manuscript plans drawn .....	2
Geological and Meteorological colour work .....	34
Underground surveys examined .....	73

## STAFF.

The Chief Clerk and Accountant (Mr. A. B. Bryan), after 51 years of service, was retired from the Public Service on 22nd July, 1938, having reached the retiring age. His services have been retained in a temporary capacity since that date.

The Government Geologist (Mr. P. B. Nye, M.Sc., B.M.E.) was granted a further extension of special leave from 1st July, 1938, to 30th June, 1939 to continue his duties as chief executive officer of an aerial survey being conducted jointly by the Commonwealth, West Australian, and Queensland Governments in Northern Australia.

Mr. W. H. Williams, Inspector of Mines stationed at Launceston, was promoted to the position of Chief Inspector of Mines and Explosives (*vice* Mr. J. O. Hudson, retired), as from 1st February, 1938.

Mr. J. F. Shaw, Inspector of Mines and Explosives, stationed at Queenstown, was transferred to Launceston in April, 1938.

Mr. H. F. Pearson was appointed Inspector of Mines and Explosives, stationed at Queenstown (*vice* Mr. J. F. Shaw, transferred), as from 21st March, 1938.

Mr. Keith A. Rae was appointed Inspector of Mines and Explosives, stationed at Queenstown (*vice* Mr. H. F. Pearson, resigned), as from 4th July, 1938.

Mr. Marcus Gibson was appointed Warden of Mines for the North-Western Mining District (*vice* Mr. J. P. Clark, transferred), as from 21st November, 1938.

## 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 1938.

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

*Field Work.*

The following list includes the field trips, surveys, examinations, &c., made in connection with mineral deposits, mines, &c., which were carried out during the year, and the officers by whom they were conducted:—

- (1) Geological survey of Rocky Boat Harbour, New River District, by F. Blake.
- (2) Geological survey of Lake Dora Area, by F. Blake and Q. J. Henderson.
- (3) Geological Survey of Red Hills copper deposits, by F. Blake and T. D. Hughes.
- (4) Inspection of Blythe River iron deposits, by F. Blake.
- (5) Inspection of Comstock iron deposits, by F. Blake.
- (6) Inspection of Government prospecting works at Comstock, by F. Blake.
- (7) Three inspections of Blythe River iron deposits in connection with Commonwealth survey, by F. Blake.
- (8) Examination of Butler's Gorge in connection with drilling campaign, by F. Blake.
- (9) Visit to Rio Tinto iron deposits in connection with Commonwealth survey, by F. Blake.
- (10) Survey of Montana Western Mine, Zeehan, by F. Blake.
- (11) Examination of copper deposits at Nicholl's Range, by F. Blake.
- (12) Examination of rock structures at Tarraleah and Butler's Gorge, by F. Blake.
- (13) Two inspections of Comstock iron deposits in connection with Commonwealth survey, by F. Blake.
- (14) Examination of Highclere and Hampshire iron deposits, by Q. J. Henderson.
- (15) Three inspections of Que River track operations, by Q. J. Henderson.
- (16) Three inspections of Meredith Range track operations, by Q. J. Henderson.
- (17) Examination of Flannagan's Creek area, by Q. J. Henderson.
- (18) Inspection of Lisle District in connection with water-supply, by Q. J. Henderson.
- (19) Surveys of Aberfoyle and Story Creek Mines, by Q. J. Henderson.
- (20) Examination of several aid to mining prospects in North-Eastern District, by Q. J. Henderson.
- (21) Inspection of portion of Bathurst Harbour, by Q. J. Henderson and T. D. Hughes.
- (22) Examination of Catamaran Mine, by Q. J. Henderson.
- (23) Inspection of Grand Prize Mine, North Dundas, by Q. J. Henderson.
- (24) Survey of Gold Hill area, by Q. J. Henderson.
- (25) Examination of Launceston Tertiary Basin for ground water-supply, by Q. J. Henderson.
- (26) Geological Survey of Moonah and Glenorchy, by Q. J. Henderson and T. D. Hughes.
- (7) Rook's River Tinfield, Cape Barren Island, by F. Blake.
- (8) Modder River Tinfield, Cape Barren Island, by F. Blake.
- (9) Pat's River Tinfield, Cape Barren Island, by F. Blake.
- (10) Geological Features Affecting the Proposed Sewerage Scheme for the Towns of Moonah and Glenorchy, by Q. J. Henderson.
- (11) Report on Future Drilling Policy at Butler's Gorge Dam Site, by F. Blake.
- (12) Montana Western Extended Silver-Lead Mine, Zeehan, by F. Blake.
- (13) A Note on the Reported Tin Lode near Bathurst Harbour, by Q. J. Henderson.
- (14) Geological Survey of the Gold Hill Area, by Q. J. Henderson.
- (15) Report on Nicholls Range Copper Deposit, by F. Blake.
- (16) Examination of Hydro-Electric Works, Tarraleah, by F. Blake.
- (17) Supplementary Report on Drilling at Lefroy, by F. Blake.

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

*Publications.*

Geological Survey Bulletin No. 44, entitled "The Geology and Mineral Deposits of Tasmania," and accompanied by geological map and mineral map, was printed and issued during the year.

*Staff.*

The Government Geologist, Mr. P. B. Nye, is still on leave of absence, and continues to act as Executive Officer to the Geophysical, Geological, and Aerial Survey of Northern Australia.

No alterations have been made to the staff of the Geological Survey during 1938.

*Iron Ore Survey.*

In connection with the proposal by the Commonwealth Government to undertake, in conjunction with the Geological Survey, a survey of the State's iron ore resources, preparatory clearing, and track-cutting operations were carried out at Comstock, Rio Tinto, and Blythe River, under the supervision of the Acting Government Geologist.

Preliminary examinations of these deposits were made by the latter in company with Dr. W. G. Woolnough, Commonwealth Geological Adviser.

*Interpretation of the Geological Record of the State.*

During a geological reconnaissance of Gordon River, over a length of 40 miles from the mouth of that stream, a suite of fossils was obtained from slate and sandstone beds, situated above the junction of Harrison Creek with the river. These beds are conformably bedded with thick strata of limestone, and, together, constitute the Gordon River limestone series.

The fossils were submitted to Mr. R. A. Keble, Palæontologist to the National Museum, for determination, who reported that they included the following:—

*Platystrophia aff. honorata* (Barr).  
*Spirifer cf. varicosta* (Conrad).  
*Chonetes aff. melbournensis* (Chap).  
*Orthis sp.*  
*Crinoids.*  
*Rhyncotrema sp.*  
*Camartoechia sp.*  
Plant forms comparable with *Psilophyton*.

From the evidence obtained, Mr. Keble ascribes the fossils to a high place in the Silurian period, and compares them with the Melbournian Series of Victoria.

*Reports.*

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

- (1) Boring at Long Struggle Mine, Alberton, by F. Blake.
- (2) Report on Boring Campaign on the Arba Lead, Branhholm, by F. Blake.
- (3) Report on Rocky Boat Harbour District, by F. Blake.
- (4) Report on Red Hill Copper Deposits, by F. Blake.
- (5) Investigation of the Possibilities of an Underground Water-supply at Paton and Baldwin's Knitting Mills, Launceston, by Q. J. Henderson.
- (6) Report on Prospecting Operations, Vicinity of Flannagan's Creek, by Q. J. Henderson.

This palæontological work now definitely places the age of the Gordon River limestone series, which in the immediate past has been referred to the Silurian, chiefly by analogy with similar rocks at Zeehan, &c.

*Routine and Other Duties.*

The usual duties of interviewing visitors, answering correspondence, &c., were attended to. 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 specimens and collections for schools, other institutions and exhibitions.
- (2) Attendance at meetings of Mine Manager's Examination Board.

- (3) Reports and recommendations in connection with aid to mining, prospecting, &c.
- (4) Attention and addition to Departmental Library.
- (5) Weighing of, and certifying to, parcels of osmiridium being shipped overseas.
- (6) Preparation of plans, sections, maps, &c., to accompany reports.
- (7) Attention and addition to departmental collections.
- (8) Preparation of rock sections.

*Conclusion.*

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 CHIEF CHEMIST AND ASSAYER.

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

During the year the following determinations were made:—Gold, silver, tin, lead, aluminium, arsenic, antimony, beryllium, barium, bismuth, boron, calcium, chlorine, chromium, copper, fluorine, iron, magnesium, manganese, mercury, molybdenum, nickel, osmiridium, phosphorus, tungsten, zinc, and zirconium. Analyses were made of ores, minerals, clays, rocks, coal, shale, water, &c. The number of determinations amounted to approximately 6000.

*Metallurgical Investigations.*

1. *Slimes and Sands from Golden Gate Lease No. 1201, Mathinna.*—The owner of the lease undertook a sampling

campaign, and 250 samples were received for assay and cyanidation tests. (The tonnage of slimes was estimated as 85,000 long tons.)

The dump consists of four main areas, the average footage assay values being:—

Area 1—1.92 dwt. gold per ton. Area 2—1.87 dwt. gold per ton. Area 3—2.02 dwt. gold per ton. Area 5—1.44 dwt. gold per ton.

The samples contained varying amounts of sands and residues; the values of slimes alone would be slightly higher.

TABLE No. 1.

Reg'd. No's.	Test Samples from Areas—							
	539	880	1	2	3	4	5	
Gold (dwt. per ton)	1.8	2.0	1.22	1.8	2.3	1.13	1.4	
Silver (dwt. per ton)	1.6	0.7						
Copper (%)	Tr.	Nil						
Arsenic (%)	0.73	0.52						
Lead (%)	0.05	0.03						
Sulphate (%)	0.13	0.91						
<i>Water Soluble Salts—</i>								
Copper (%)	Nil	Nil						
Arsenic (%)	Minute	traces						
Fe <sub>2</sub> O <sub>3</sub> & Al <sub>2</sub> O <sub>3</sub> (%)	0.03	0.04						
Lime (%)	0.05	0.16						
Magnesia (%)	0.02	0.34						
Sulphate (%)	0.1	0.88						

Test sample from area No. 1 mainly cyanided residues.

The following tables summarise the results of cyanidation tests by agitation:—

TABLE No. 3.

*Constant Treatment Conditions.*

Sample No. 880/38.

Agitation ..... 20 hours  
Solid-solution ratio .... 1 : 2  
Barren solution ..... 0.1 % KCN

Test No.	CaO Added. Lb. Per Ton.	Pregnant Solution.		Consumption.		Indicated Gold Extraction.	
		CaO. Per Cent.	KCN. Per Cent.	CaO.	KCN.	Dwt. Per Ton.	Per Cent.
1	Nil	.....	0.006	.....	4.21	0.7	35.0
2	11.2	.....	0.042	11.2	2.7	1.47	73.5
4	17.9	0.005	0.08	17.7	0.9	1.47	73.5
5	22.4	0.013	0.082	21.8	0.81	1.33	66.5
6	28	0.008	0.079	27.6	0.94	1.25	62.5
8	44.8	0.076	0.078	41.4	0.99	1.0	50.0

Variable Time.

TABLE NO. 4.

Constant Treatment Conditions.

Sample, 880/38.

Solid-solution ratio .... 1 : 2  
 Barren solution .... 0.1 % KCN  
 Lime added .... 17.9 lb. per ton

Test No.	Hours Agitation.	Pregnant Solution.		Consumption.		Indicated Gold Extraction.	
		CaO. Per Cent.	KCN. Per Cent.	CaO. Lb. Per Ton.	KCN.	Dwt. Per Ton.	Per Cent.
13	2	0.014	0.086	17.3	0.6	1.17	58.5
14	4	0.011	0.084	17.4	0.7	1.2	60.0
15	8	0.01	0.083	17.5	0.76	1.33	66.5
16	12	0.008	0.082	17.6	0.81	1.37	68.5
4	20	0.005	0.08	17.7	0.90	1.47	73.5

TABLE NO. 5.

Water Wash.—Solids: Water ratio 1 : 2. Agitation for 1 hour and filtered. Variable time and lime.  
 Constant Treatment Conditions.

Solid-solution ratio .... 1 : 2  
 Barren solution .... 0.1 % KCN

Test. No.	Hours Agitation.	CaO Added. Lb. Per Ton.	Pregnant Solution.		Consumption.		Indicated Gold Extraction.	
			Per Cent. CaO.	Per Cent. KCN.	CaO. Lb. Per Ton.	KCN.	Dwt. Per Ton.	Per Cent.
11	4	11.2	0.02	0.093	10.3	0.31	1.4	70
12	8	11.2	0.016	0.093	10.5	0.31	1.57	78.5
3	20	11.2	0.01	0.091	10.75	0.40	1.61	80.5
10	20	33.6	0.1	0.09	29.1	0.45	1.65	82.5

TABLE NO. 6.

Constant Treatment Conditions.

Agitation .... 20 hours  
 Solid-solution ratio .... 1 : 2  
 Barren solution .... 0.1 % KCN  
 Lime added .... 17.9 lb. per ton

Area No.	Pregnant Solution.		CaO.	Consumption.		Indicated Gold Extraction.	
	CaO Per Cent.	KCN Per Cent.		CaO. Lb. Per Ton.	KCN.	Dwt. Per Ton.	Per Cent.
1	0.085	0.093	14.1	0.36	0.2	16.6	
2	0.088	0.087	14.0	0.63	1.3	72.2	
3	0.083	0.088	14.2	0.58	1.7	73.9	
4	0.128	0.093	12.2	0.33	0.8	72.7	
5	0.106	0.090	13.1	0.47	0.9	64.3	

2. *King Island Scheelite No Liability.*—The company requested an investigation of plant products to ascertain if finer grinding would improve recoveries. Grinding consisted of a 1/16th-inch screen in closed circuit, with rolls, and the amount of scheelite remaining in the tailings was higher than anticipated. Ore-dressing Investigation No. 86, by C.S. & I.R. and University of Melbourne, quotes the result of examination of the ore by Dr. F. L. Stillwell: "The scheelite is associated with the garnets and actinolite. It occurs as inclusions in the former."

A sample of a coarse, magnetic product (Garnets) was submitted, and to ensure the removal of any free scheelite it was re-treated by magnetic separation. A highly magnetic product of dark-coloured garnet, representing 98.51 per cent. of the sample, and containing 0.55 per cent. tungstic acid, was utilised for grinding tests. Size of garnets, generally minus 10 to plus 44 mesh.

*Ball-Mill Grinding.*—The sample was submitted to three one-minute periods of wet grinding. After each period the sample was wet-screened through 33-mesh screen, and the oversize returned for further treatment. Slimes, representing 1.2 per cent., was separated by decantation.

Products of Test.—

Size.	Per Cent.	Per Cent. WO <sub>3</sub> .	Distribution. Per Cent. WO <sub>3</sub> .
— 10 + 22	2.03	0.43	} 3.04
— 22 + 33	1.87	0.42	
— 33 to — 200	94.9	0.54	93.88
Slimes	1.2	1.4	3.08

Minus 33 to minus 200 was screened, WO<sub>3</sub> determined in total and magnetic fractions.

Size.	Per Cent.	Per Cent. WO <sub>3</sub> .	Distribution. Per Cent. WO <sub>3</sub> .	Magnetic Fraction Per Cent. WO <sub>3</sub> .
— 33 + 44	25.9	0.28	13.4	0.25
+ 60	20.4	0.34	12.8	0.24
+ 85	16.0	0.45	13.3	0.12
+ 120	8.4	0.64	9.9	0.06
+ 150	6.3	0.9	10.5	0.06
+ 200	6.7	0.92	11.4	N.D.
— 200	16.3	0.94	28.7	N.D.

Minus 10 + 22 magnetic fraction contained 0.43 % WO<sub>3</sub>.

*Summary.*—Finer grinding than at present practised will free additional scheelite, a proportion of which will be recoverable by tabling. Subsequently the company tested the sample by rod-mill grinding to minus 25 mesh, gravity concentration and magnetic separation resulting in a recovery of 55 per cent. of the scheelite as a marketable product.

3. Battery crushing and amalgamation tests were made on a gold ore from the Argyle Mine, Mangana, to ascertain correct screen size.

4. Gold-bearing, clayey material from "City of Hobart," Mathinna, was tested by puddling, screening, and amalgamation.

5. Methods of tin estimation with low-grade ores were investigated for Tasman Tin No Liability.

6. Analyses and microscopical examinations of mill products were undertaken for Aberfoyle Tin Mining Company, Renison Associated Tin Mines, and Narrawa Creek Mine.

## General.

The usual routine work was attended to, and information supplied relative to methods of ore treatment, sampling, &c. In conclusion I wish to place on record my appreciation of the services rendered by the staff.

## APPENDIX III.

## REPORT OF THE CHIEF INSPECTOR OF MINES.

The Chief Inspector (Mr. W. H. WILLIAMS) reports:—

I have the honour to furnish the following report upon the administration of the provisions of the Mines and Works Regulation Act for the year ended on the 31st December, 1938:—

The average number of persons employed in mining, metallurgical, and quarrying operations was 5891, compared with 5876 for the previous year.

The appended tables relate to:—

- (1) Fatalities and non-fatal casualties at mines, works, and quarries.
- (2) The average number of persons employed, and the rate per 1000 of fatal and non-fatal injuries in the State and in each mineral division.

*Accidents.*

The total number of accidents, registered under the provisions of Section 23 of the Act, was 103, as against 107 for the previous year. The 103 accidents resulted in injury to 104 persons.

There were 12 additional accidents in the Western Division, and an increase of four accidents in the North-Eastern Division. In the Eastern Division there was a decrease of six accidents, whilst in the North-Western and Northern and Southern Divisions there were decreases of 12 and two accidents respectively.

Two accidents were attended with fatal injuries to a like number of persons, as against five fatalities recorded for the previous year.

The non-fatal accidents totalled 101, and involved injury to 102 persons, compared with 102 of the former and 103 of the latter numbers recorded during 1937.

The rate per 1000 persons employed, killed, and injured was 17.6, compared with 18.4 for the previous year.

The rate per 1000 persons employed, fatally injured, was 0.339, compared with 0.85 for 1937.

The rate per 1000 persons employed, incapacitated for more than 14 ordinary days, was 17.315, as against 17.529 for the previous year.

The two fatal accidents were due to falls of ground in surface workings.

Of the non-fatal accidents, 57 occurred underground, 29 were associated with surface operations at mines, and 15 happened at metallurgical and other works. Thirty-six of the underground accidents were of a miscellaneous nature, eight were due to falls of ground, 11 were associated with trucking operations, and two resulted from persons falling down passes. Thirty-eight of the surface accidents were of a miscellaneous nature, one was due to a fall of ground, four were associated with tramming operations, and one was due to a machineman boring into an unexploded charge of nitro-compound in a concealed "pop-hole." Although a majority of the injuries was attributable to misadventure, a critical analysis of the causes suggested that an exercise of reasonable care would have averted injury in 37 per cent. of the recorded accidents.

*Health.*

The prevalence of industrial dusts, the ventilation of underground workings, sanitation, and matters generally related to the incidence of industrial ailments and the immediate health of employees, have been kept under surveillance with the object of ensuring maintenance of existing systems of control and the future application of measures to cover conditions developing from normal and innovated practices.

In one case proceedings were instituted for failure to use appliances provided for the prevention of dust.

*Operations—Southern Division.*

Continuous operations by the Australian Commonwealth Carbide Company resulted in an output of 7110 tons of carbide, valued at £142,200. The production of limestone from the Ida Bay quarry was 19,223 tons, valued at £11,648. An average of 163 men was employed.

Productive mining was continuous at the Catamaran Coal Mine, and accounted for an output of 10,200 tons of coal, valued at £8280, operations giving employment to 34 men.

Six men were engaged at the Sandfly Colliery, and produced 1474 tons of coal, valued at £1061.

At the Langloh Colliery, productive operations were proceeded with in the shallow shaft workings, but were abandoned for the project of driving a dip-tunnel and developing the seams on a more regular basis. 1537 tons of coal, valued at £1095, was marketed, and operations gave employment to an average of 10 men.

*Adamsfield.*

The average price of osmiridium declined to £15 0s. 4d. per oz., and the recorded output from alluvial operations was 158.69 oz., valued at £2468. A small treatment plant was installed by the Osmiridium (Tas.) No Liability, and developmental and productive operations were pursued on the osmiridium-bearing formation. Eight men were employed, and the recorded recovery of osmiridium was 18.6 oz., valued at £461.

*Cox Bight.*

Miscellaneous parties, operating on alluvial occurrences in the South-Western (Cox Bight) areas, accounted for an output of 3.6 tons of tin oxide, containing 2.55 tons of metallic tin, valued at £491.

*Jane River Goldfield.*

Operations on the auriferous alluvials were less active, the recorded output receding to 75.34 fine oz. of gold, valued at £536. The provision of a new and shorter pack-track will render the field more accessible and should activate interest in the prospecting and productive possibilities of the area.

*Quarries.*

The bluestone quarries and quarries for the production of shale and clays, for the manufacture of bricks, worked continuously during the year.

*COMPARATIVE Table of Statistics of Accidents in and about the Mines of Tasmania  
from 1st July, 1892, to 31st December, 1938.*

Period.	Number of Miners Employed.	Number of Accidents.	Number of Persons		Total Killed and Injured.	Average per 1000 Killed and Injured.	Average per 1000.	
			Killed.	Injured.			Killed.	Injured.
1 July, 1892, to 30 June 1893	3295	28	4	25	29	8·8001	1·214	7·586
" 1893 " 1894	3403	25	7	20	27	7·934	2·057	5·877
" 1894 " 1895	3789	26	4	24	28	7·390	1·058	6·332
" 1895 " 1896	4160	22	7	16	23	5·529	1·682	3·847
" 1896 " 1897	4303	36	7	31	38	8·831	1·627	7·204
" 1897 " 1898	5530	36	13	33	46	8·318	2·351	5·967
" 1898 " 1899	6180	35	9	34	43	6·957	1·456	5·501
" 1899 " 1900	6834	19	7	16	23	3·365	1·024	2·341
" 1900 " 1901	7017	29	8	23	31	4·417	1·140	3·278
" 1901 " 1902	6438	38	7	35	42	6·524	1·088	5·437
" 1902 " 1903	6484	44	6	43	49	7·557	0·925	6·632
" 1903, to 31 Dec., 1903	5604	27	8	20	28	4·977	1·428	3·569
1 Jan., 1904 " 1904	6192	73	9	65	74	11·951	1·454	10·497
" 1905 " 1905	6586	34	7	30	37	5·618	1·063	4·555
" 1906 " 1906	7004	65	4	61	65	9·280	0·571	8·709
" 1907 " 1907	7516	68	6	64	70	9·314	0·798	8·515
" 1908 " 1908	6464	60	6	58	64	9·900	0·928	8·972
" 1909 " 1909	6054	54	6	49	55	9·085	0·991	8·093
" 1910 " 1910	5770	63	8	57	65	11·265	1·386	9·878
" 1911 " 1911	5247	80	4	77	81	15·437	0·762	14·675
" 1912 " 1912	5566	60	53*	53	106	19·044	9·522	9·522
" 1913 " 1913	6106	64	6	60	66	10·809	0·982	9·826
" 1914 " 1914	4741	69	9	62	71	14·977	1·896	13·081
" 1915 " 1915	3908	71	6	67	73	18·679	1·535	17·144
" 1916 " 1916	3864	53	2	51	53	13·716	0·517	13·198
" 1917 " 1917	4050	50	2	48	50	12·345	0·493	11·852
" 1918 " 1918	4279	50	5	45	50	11·684	1·168	10·516
" 1919 " 1919	4413	58	1	57	58	13·143	0·226	12·917
" 1920 " 1920	5364	52	2	50	52	9·694	0·372	9·322
" 1921 " 1921	4011	40	3	37	40	9·972	0·748	9·224
" 1922 " 1922	3835	31	4	27	31	8·083	1·043	7·040
" 1923 " 1923	4785	64	2	63	65	13·584	0·417	13·166
" 1924 " 1924	5264	72	1	73	74	14·057	0·189	13·867
" 1925 " 1925	5110	62	2	61	63	12·328	0·391	11·937
" 1926 " 1926	5309	54	5	52	57	10·736	0·941	9·794
" 1927 " 1927	5044	70	5	65	70	13·877	0·991	12·886
" 1928 " 1928	5170	47	1	46	47	9·090	0·193	8·897
" 1929 " 1929	4986	59	17	55	72	14·440	3·409	11·031
" 1930 " 1930	4606	55	4	52	56	12·158	0·868	11·289
" 1931 " 1931	4391	38	8	35	43	9·792	1·821	7·970
" 1932 " 1932	4605	71	4	67	71	15·418	0·868	14·549
" 1933 " 1933	4510	77	7	71	78	17·295	1·552	15·742
" 1934 " 1934	4843	108	4	105	109	22·506	0·826	21·680
" 1935 " 1935	5409	142	1	141	142	26·252	0·184	26·067
" 1936 " 1936	5432	97	4	96	100	18·409	0·736	17·673
" 1937 " 1937	5876	107	5	103	108	18·379	0·850	17·529
" 1938 " 1938	5891	103	2	102	104	17·654	0·339	17·315

\* Mount Lyell disaster.

*TABLE showing Rate per Thousand Killed and Injured in different Divisions for the Year 1938.*

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 .....	1517	3	...	3	3	1·977	...	1·977
North-Eastern .....	474	11	1	10	11	23·206	2·109	21·097
Eastern .....	653	2	...	2	2	3·062	...	3·062
North-Western .....	678	3	...	3	3	4·424	...	4·424
Western .....	2569	84	1	84	85	33·086	0·389	32·697
Total .....	5891	103	2	102	104	17·654	0·339	17·315

*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 .....	1825	64	1	64	65	35·616	·548	35·068
Zeehan, &c. ....	744	20	...	20	20	26·880	...	26·880
Total .....	2569	84	1	84	85	33·086	0·389	32·697

## APPENDIX IV.

## REPORT OF THE CHIEF INSPECTOR OF EXPLOSIVES.

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

I have the honour to furnish the following report upon the administration of the provisions of the Explosives Act and the Inflammable Liquids Act for the year ended on the 31st December, 1938.

The imports of explosives were as follows:—

	Pounds.
Monobel .....	105,600
Gelignite .....	449,050
Ligdyn .....	193,750
Blasting gelatine .....	3,450
Blasting powder .....	10,500
Sporting powder .....	—
	Number.
Detonators .....	733,500

Customary attention was directed to ensuring that the compounds were of good, chemical, and physical condition, and recorded instances of deterioration were confined to small, isolated quantities affected by local conditions of handling and storage subsequent to importation.

The only explosives accident was due to a machineman boring into an unexploded charge of nitro-compound in a concealed "pop-hole" in a block of ore in surface workings.

The absence of untoward incidents in connection with the handling and storage of inflammable liquids reflected creditably upon the care required in the control of safety and fire hazards. Bulk depots were established by the Commonwealth Oil Refineries in Hobart and Launceston, and the provision of subsidiary storage depots and marked activities in regard to pump installations by the various

companies materially added to the duties pursued under the provisions of the Inflammable Liquids Act throughout the State.

*Revenue.*

The following licences were issued, and fees received thereon, for the appended periods:—

*Explosives Act.*

(1st January to 31st December, 1938.)

	No.	£	s.	d.
Magazine licences .....	70	69	10	0
Permits to sell explosives .....	274	68	0	0
Permits to import explosives .....	13	26	0	0
Permits to convey explosives .....	51	12	12	6
Permits to sell fireworks only .....	121	15	2	6
Magazine rents .....	—	110	14	1
		£301	19	1

*Inflammable Liquids Act.*

(1st July, 1937, to 30th June, 1938.)

	No.	£	s.	d.
Licences for stores .....	794	1,106	15	0
Registration of premises .....	237	60	0	0
Permits to import .....	9	2	5	0
Increased storage .....	55	24	10	0
Transfer fees .....	8	2	0	0
Alteration of licences .....	72	18	0	0
		£1,213	10	0

Total revenue ..... £1,515 9 1

The total revenue represents an increase of £164 1s. 7d. compared with that for the previous periods.

## APPENDIX V.

## REPORTS OF INSPECTORS OF MINES.

Inspector H. A. VAUDEAU, Upper Burnie, reports:—

The average number of men employed was 1359, an addition of 24 to that of the previous year. In the North-Western area the number was 646, and Western area (not including Mt. Lyell), 713.

There were 23 accidents registered, a decrease of 10 compared to last year; none were fatal. Four occurred in surface workings and nineteen underground. Two of these occurred to the working owners of small coal pits, resulting in each case in broken collar-bones, caused through rock falls from roof. One occurred in the stope of a metal mine, a fall of rock breaking a miner's leg. A serious accident was caused to a man in charge of an electric locomotive through neglect in not uncoupling the locomotive from a rake of trucks being shunted. As he could not control the train he attempted to jump clear and, in doing so, his right foot was caught between a fixed structure and the locomotive, causing injuries which necessitated amputation of portion of his foot. The remaining list of accidents were more or less of a minor character, caused chiefly through want of care by the workers themselves.

*Ventilation.*

At one mine in particular, conditions were not at all satisfactory. In most instances, when a deficiency was noted and pointed out, something was done in the way of improvement.

*Explosives.*

Due consideration regarding safe handling and storage was given at mines and works, also at Burnie wharf, when being unloaded for transportation to various localities. Two complaints were received *re* faulty detonators. The top portion of the lead-azide had burst and bulged the casing but the lower portion had not exploded. Other than this, as far as is known, no defective material was observed.

*Health and Sanitation.*

Insufficient wetting of ore being handled was noticed in some cases, and final warning was given to the management, with desired results. At a calcining plant, improvements were requested and complied with, but there is yet room for still better conditions. It is expected they will be effected in due course. Some improvements have been made at a cement works, others are in progress. Legal action was taken against men for failing to use appliances supplied for the prevention of dust.

*Inflammable Liquids Act.*

New pump installations, being more numerous than usual, absorbed considerable time.

*Workers' (O.D.) Relief Fund Act.*

Several men applied for, and records show that two obtained, full compensation, three were put down at 75 per cent., two at 50 per cent., one each at 35, 25, and 20 per cent. Most of them had been working in the industry for many years.

*General.*

In addition to duties ordinarily performed under the provisions of the Mines and Works Regulation Act, Inflammable Liquids Act, Explosives Act, and the Mining Act, examinations were made of various mining properties and prospects under the Aid to Mining Act and reports furnished thereon.

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

*Operations and Production.**Tin.*

*Mt. Bischoff Tin Mine, Waratah.*—Crude ore treated, 19,578 tons, producing, 135.6 tons of concentrates containing 93.25 tons of metallic tin, nett value, £19,324 15s. 8d. In addition, 9050 tons of slime and tailings were re-treated, returning 37.25 tons of concentrates, containing 25.5 tons metallic tin, value £5281. Also 4050 cubic yards of alluvial tin were sluiced, returning 3.9 tons tin oxide, containing 2.4 tons of metallic tin, value £507. Total production, 176.75 tons of tin oxide; containing 121 tons of metallic tin, value, £23,084. An average of 118 men employed, 96 on surface, two underground.

Two additional five-head stamper batteries were installed during the year, also a self-acting tramway laid to connect with the north alluvial faces.

*Underground Workings, North Valley Lode.*—The No. 4 level was extended south-east 125 feet—total, 451 feet. Lode, irregular and disturbed over greater part of distance, now appears more defined, carrying good grade milling ore. No. 2 level: Connection made by rising from this level to old No. 1 level, 62 feet above. Lode in rise averaged 26 inches in width, carrying 1.1 per cent. tin. No. 3 level extended 80 feet south-east—total, 543 feet. Average width over last 80 feet, 64 inches, assaying 0.9 per cent. tin. Good grade milling ore is being won from stopes above Nos. 2 and 3 levels.

*No. 1 Wheal Lode.*—Stoping in progress above the No. 1 level on a seam of good grade ore two feet in width.

*No. 2 Wheal Lode.*—Cross-cut 165 feet in length, driven to cut this lode at northern end; where cut, was small, operations discontinued for time being.

*Kayser Lode.*—A level starting from the western cross-cut was driven south-east on seam of ore 6 inches wide. A rise was put up 20 feet from end of level. The lode was rather small to be profitable with present prices ruling for tin.

*Gossan Face Workings.*—A level 84 feet in length was driven north below the No. 4 bench on a soft seam of gossan and pyrites 74 inches in width. The values are variable, but fair grade milling is now being won from these workings.

*Queen Lode Dyke Workings.*—148 feet of driving and cross-cutting on small irregular seams of ore from winze below the 75 feet level. A small tonnage of high-grade ore produced. A limited quantity of high-grade ore was taken from the north-east lode, the cross-lode produced a small quantity of medium-grade ore.

*Open Cut Workings.*—An increased tonnage was mined from surface excavations. The Slaughter and North Alluvial Faces were brought into production again since the completion of Nos. 1 and 2 batteries. A comparatively large tonnage has been won from the Gossan and White Faces.

*North Valley Alluvial Workings.*—The pipe-line and sluice-boxes were moved to a new position. Sluicing was resumed at the latter part of the year and pit opened ready for sluicing.

*G.P.S. Syndicate, Waratah.*—The remainder of the tailing dump on lease 11143/M, 10 acres (old Mt. Bischoff Extended Mill Site), was cleaned up and some of the plant shifted on to lease 11844/M, 16 acres. Total tin oxide from tailings for the term, 3.2 tons, containing 2.2 tons of tin, value £426.5. Average of three men employed. This party also had two men driving an adit on another lease to pick up continuation of a payable lode from the Mt. Bischoff Tin Mine, also, for a time, was driving an adit to intersect a galena formation. Neither of these objectives were reached at close of term.

*H. Stanley's Lease, being portion of the old Mt. Bischoff Extended Tin Mine, Waratah,* an average of three men won 5.1 tons of tin oxide, containing 3.5 tons of tin, valued at £642.

*C. Dunstan's Lease, Waratah.*—This is also portion of the old Extended Tin Mine. An average of five men employed, obtained 6 tons of tin oxide, containing 4.7 tons of tin, valued at £906.8.

*Tin Stone Creek, Waratah.*—Bozich and Leach, by ground sluicing recovered 1.4 tons of tin oxide containing 0.9 tons of tin, value, £170.

Coglan and Dunn also, by ground sluicing, obtained 1 ton of tin oxide, containing 0.73 tons of tin, value, £128, during six months.

*Wombat Flat, Waratah.*—The Big Dipper Syndicate sluiced 5640 cubic yards of drift and obtained 1.6 tons of tin oxide, containing 0.9 tons of tin, valued at £191.9 during six months—two men working.

Two other men working in this area for a term obtained a few bags of tin.

*S.P.A. Creek, Waratah.*—R. W. Pryde, by ground sluicing, cleaned up for half a ton of tin oxide, containing 0.33 tons of tin, value, £61.

E. Littler, working near the above, raised tin to the value of £23.5 during the first six months.

*Parson's Hood Track, Waratah.*—J. Betts raised 0.3 tons of tin oxide, containing 0.2 tons of tin, value, £39.6. J. Sullivan by ground sluicing, obtained 0.4 tons of tin oxide, containing 0.2 tons of tin, valued at £43.6.

*Federation Tin Mine, South Heemskirk.*—935 tons of crude ore were treated for 4.87 tons of concentrates, containing 2.8 tons of tin, valued at £515.6. For the first quarter, 16 men were employed.

Owing to the low price of tin and decline in values, production ceased. A few men were kept on when some prospecting was carried out in the vicinity of "Black Face"; unfortunately, no success attended these efforts. Later, the Government drill was put into commission to test the lode below and to the east. The hole to the east was bored out from the 220 feet level to 130 feet. Fair values were met with for the first ten feet, the remainder gave unfavourable results. An almost vertical hole was commenced in the centre of the ore body, which had given fair yields above the level, and was carried to a depth of about 125 feet, results were disappointing, only slight traces of ore being found. These represented very small seams in hard quartzite for over 100 feet, the bore then intersected granite.

*Mayne's Tin Mine (J. S. Munro, lessee), South Heemskirk.*—A programme of prospecting was undertaken. A considerable amount of trenching was carried out, locating ore not hitherto known of. More developmental work is necessary on this property.

*A. Fairfield, next to Mayne's Tin Mine, South Heemskirk.*—A little prospecting was carried out during one quarter.

*M. Donoghue* has continued on his prospecting claim and located tin ore in a few places. Bulk assays are reported to have given from 0.5 to over 4 per cent. per ton. Observations indicate the probable occurrence of vertical fissure lodes and a series of flat floors which appear to be worthy of development.

During the first quarter J. Gleason obtained 1.37 tons of tin oxide from his claim, containing 0.2 tons of tin, valued at £35. From other sources he obtained 1 ton of concentrates, containing 0.4 tons of tin, valued at £88.

*North Heemskirk Area.*—R. Smith, by ground sluicing, won 0.61 tons of tin oxide, containing 0.43 tons of tin, valued at £79.

F. Bennett won, during one quarter, 0.2 tons of tin oxide, containing 0.13 tons of tin, valued at £24.3.

H. G. Watson won 0.5 tons of tin oxide from shallow ground, containing 0.34 tons of tin, valued at £61.

J. Dixon won 1 ton of tin oxide, containing 0.7 tons of tin, valued at £135.7.

*North Heemskirk Tin Syndicate, Tasman River,* successors to Cook Bros. obtained, by sluicing drifts 18 to 20 feet deep, 1.56 tons of concentrates, containing 1 ton of tin, value, £202.

W. Cook obtained ore to the value of £4.5.

*Zeehan Tin Development Mine, Zeehan.*—Some developmental work was carried out during the first half of the year, which, on the whole, proved disappointing. Ore was treated at the mill and returned concentrates as follows:—

Tons.	Cwt.	Qrs.	Lb.	Tin.
1	6	3	0	assaying 64.65 per cent.
7	9	0	13	„ 23.35 per cent.
1	6	1	7	„ 29.2 per cent.

Total concentrates produced, 10.25 tons, containing 3 tons of tin, realising £398.5. Number of men employed for six months averaged 14. The option a company had over the mine property was abandoned in July.

J. Copping, Exe River, Rosebery won 0.54 tons of concentrates, containing 0.27 tons of tin, valued at £54.8.

A. J. Salmon, Exe Gorge, Rosebery, won 0.4 tons of concentrates, containing 0.26 tons of tin, valued at £54.5, during the six months.

R. W. Fenton, Ring Valley obtained 0.2 tons of tin oxide by ground sluicing, value, £26.7.

*Remison Associated Tin Mines, Remison Bell.*—Mining and milling were carried out intermittently during the year. The quantity treated is not known. Twenty-four tons of concentrates were sold, containing 15.6 tons of tin, value, £3102.64. On the average 22 men were employed. A considerable amount of alterations and additions to plant were made. The management reports successful experimental treatment of the tin-bearing pyrites. Arrangements are being made to instal additional plant at mill to deal with increased quantities of ore, also to link up with the State's Hydro-Electric power lines to ensure adequate power being available to deal with increased quantities of ore.

*Tasmanian Amalgamated Tin Mines, Remison Bell.*—Concentrates containing 35.6 tons of tin were sold from what is known locally as Dunn's Workings.

*Dreadnought Star.*—An average of 19 men employed. Pyritic ore was encountered below the oxidised zone nearer surface than was expected.

Work was undertaken to open up the old Federal Workings known as the Anglo-Tasman Development Company. 1386 tons were treated for 9.83 tons of concentrates, containing 6.2 tons of tin, value, £1323. The average number of men employed during the last six months was 13. An additional 5-head battery was installed with the necessary saving appliances. This plant is operated by power from the State's Hydro-Electric lines.

Riley and mate during the last quarter won 0.5 tons of tin oxide, value, £60.7.

J. Pepper, Pine Hill, Remison Bell.—Has been prospecting in the valley below Pine Hill, raised tin to value of £23.3.

H. E. Brock, Grand Prize, Five-Mile, Zeehan.—During the year has carried out a good deal of trenching, sinking, rising, and tunnelling in testing tin contents over a length of 1000 feet on line of lodes, an average of four men at work.

F. W. Emmerton, Balfour, reports having sold 0.2 tons of tin oxide, value, £27.8.

H. Williams, Balfour, won 0.5 tons of tin oxide, containing 0.3 tons of tin, value, £57.5.

*King Island Tin Lodes, King Island.*—On this property main shaft sunk to 100 feet level and cross-cut driven 90 feet, another shaft 20 feet, drive therefrom, extended 45 feet. An underlay shaft was sunk to 35 feet and cross-cut driven to 50 feet. In addition, plant has been erected consisting of 10-head of stamps with saving appliances. Power derived from deisel engine units. Work was temporarily suspended at end of year.

#### Zinc-Lead Ores.

*Electrolytic Zinc Company of Australasia Limited, Rosebery, Williamsford, and Zeehan.*—

*Hercules Mine.*—61,708 tons of ore extracted. An average of 16 men employed on surface, 78 underground. Developmental work was kept well ahead, 5800 feet of exploratory diamond drilling carried out, affording valuable data concerning lode systems. Some 1164 feet of driving, 124 feet of cross-cutting, and 392 feet of rising carried out. An Eimco-Finlay loader installed during the year is giving satisfactory results.

*Rosebery Mine.*—93,912 tons of ore mined and treated, 22 men employed on surface, 149 underground. A considerable amount of developmental work was carried out, disclosing much of interest and value. Development included, driving 1384 feet, cross-cutting 90 feet, rising 1507 feet, also cross-cutting 16 feet, rising 131 feet, sinking 120 feet for main shaft preparations at and from No. 8 level. Some 11,000 feet of drilling was also carried out. At main incline shaft from No. 8 level an electrical hoist was installed. For underground haulage horses have been superseded by electric storage battery locomotives, which are operating satisfactorily.

*Zeehan Calcining Works, Zeehan.*—Twenty-four men employed.

The flotation mill at Rosebery dealt with 155,620 tons of ore, from which was recovered 53,991 tons zinc concentrates, from which was recovered 12,292 oz. of gold,

929,750 oz. silver, 8576 tons of lead, and 25,098 tons of zinc, and 49 tons of cadmium. Aggregate value, £669,635.25.

#### Silver-Lead Ores.

*Farrell Mining Company Limited, Tullah.*—The manager reports as follows—

*Power.*—During the first four months this was supplied by a 325 h.p. suction gas engine. On the 24th April, Hydro-Electric power was switched on to Tullah, the next day operations commenced under this power. Although considerable time was lost from occasional power failures, it has proved to be most efficient. It is understood that a more continuous supply will be assured in future.

*Mining Operations—Main Shaft.*—Completed a further sink of 100 feet at end of year. It is intended to open up No. 6 level immediately, which is 574 feet below surface brace.

*No. 5 Level.*—North drive advanced 290 feet. Lode improved and a payable stope opened over a length of 150 feet. It is expected that this shoot of ore will improve as advanced towards No. 4 level. South drive extended 110 feet. Lode channel so far has not shown payable values; this end will be continued a further 260 feet to intersect payable ore going underfoot at No. 4 level.

*No. 4 Level.*—The north drive advanced 160 feet, lode payable for the major part of driving on main lode.

*North Branch Lode.*—Driven on north and south a distance of 150 feet, lode showing highly payable values. This has been very helpful in providing supplies of milling ore.

In the south drive, 400 feet south of main shaft, intersected payable ore, producing excellent values over a length of 60 feet.

*No. 3 Level.*—North end—Branch drive. Advanced 160 feet on branch lode. Although patchy, it proved to be payable.

*South Drive.*—A cross-cut 80 feet in the footwall intersected low grade ore channel which was driven on north and south for 100 feet, values remaining low and operations discontinued.

*Cross-cuts.*—Cross-cuts at No. 5 level south in hanging wall and footwall did not intersect payable values. Another cross-cut north of shaft in footwall driven 50 feet failed to intersect payable ore.

*Stopes.*—Stoping has been carried out continuously at Nos. 5, 4, and 3 levels north and south of shaft, the lodes, generally, are patchy, but produced regular quantities of very good milling ore with occasional bunches of clean ore.

*Flotation Plant.*—This has worked satisfactorily during the period, the recoveries working out at 96 per cent. of lead and 95 per cent. of silver contents respectively.

*General.*—Progress outlined for 1939 is to open up No. 6 level with the extension of drives at Nos. 5, 4, 3, and 2 levels. The price of lead is disconcerting; an improvement is hoped for in order that a scheme of developmental work planned may be accomplished.

Two hundred and fifty-three tons of marketable ore were railed to Burnie for shipment overseas; containing lead, 1751 tons, silver 183,589 oz., value £42,575. Average number of men employed underground 50, surface, 47.

*T. Davis—Prospecting Claim.*—Some prospecting work was carried out by trenching. A tunnel was started and taken 129 feet at the close of year without striking lode. This line of country is worthy of attention, being away to the east of the Farrell series.

*Montana Silver-Lead Mine, Zeehan.*—The mine manager, Mr. W. C. Bentley, reports as follows:—“During the past twelve months a policy of development has been pursued. Although the plant leaves a lot to be desired, and circumscribes operations considerably, fair progress has nevertheless been made. A deficiency in air compressor capacity has hindered progressive developmental work to a considerable extent. A year ago the main shaft workings had been extended to a cross-cut west 165 feet, east cross-cut to 55 feet, and south level to 110 feet. The following extensions have been made—South level extended to approximately 500 feet. This has shown very encouraging prospects; south end revealing first-grade ore over a distance of 30 feet. At 90 feet south from the west cross-cut and at a point 19 feet west from main shaft, a branch south-westerly drive has been extended 100 feet on milling ore which, at times, exhibits bunches of clean ore—holed through into main level at this distance. At 266 feet south from main west cross-cut a second cross-cut has been driven west to 114 feet. At 41 feet a milling formation was cut, and this has been driven to 70 feet north. The formation is 6 feet wide and 2 feet carry good values. At 65 feet a rise is in progress and is up 50 feet, the object being to connect with

No. 2 prospect-shaft, in which good ore was located when sinking. This latter is 41 feet deep. Further west a level is extended 35 feet north on lode channel. At 398 feet south from main west cross-cut a rise connects with adit level above, distance 98 feet. Good ore is showing in several places in rise. Further south and 21 feet from rise a third cross-cut is out west 41 feet. At almost all points good values appeared to be going underfoot. Work is in progress for erection of a 50 feet set of poppet heads and installation of steam winch and boiler. When this is in commission shaft sinking will be undertaken and a more vigorous policy of development entered upon. A trial parcel of 80 tons, put through the Farrell Company's mill at Tullah, revealed its amenability to flotation, giving 94 per cent. and 93 per cent. recovery of silver and lead respectively." An average of 13 men was employed. 81 tons of ore were sent to the Farrell Company's flotation mill. It contained 1921.6 oz. silver and 16.3 tons of lead, valued at £410. There is now at grass some 212 tons of good milling ore.

*Saxon Montana Silver-Lead Development No Liability.*—Ceased operations at the South Comet, South Montana, and Trial Harbour Mines owing to the drop in prices of metals.

*Swansea Mine (J. J. Hill), Zeehan.*—A good deal of prospecting was done, exposing several lode formations carrying fair to good milling ore, and 17.4 tons of ore was picked out and sold, carrying 859.45 oz. silver and 9.2 tons of lead, valued at £222.74. Water wheel at main shaft was repaired and pump installed at the close of term. An average of three men employed.

*C. Ledger, Crown Mine, Zeehan.*—Only a little work was carried out and 4.06 tons were sold, containing 225.4 oz. silver and 2.2 tons lead, value, £50.

*Government Comstock Mine, Comstock.*—The east cross-cut was continued 196 feet but no lodes intersected. To pick up a cross lode a drive was put out to the north 34 feet without success. A drive was put out 120 feet above, and three lodes bearing N.30°W. were struck, also a big cross lode. Some good zinc values were exposed and pockets of galena. Work was again resumed in main adit, but at the end of the term no lode had been found. The country passed through was very hard and distorted in the lower adit. Three men employed. Work of a prospecting nature has been carried out on the Kynance Mine (W. Thomas); Comstock; Heywood and Cornish, Queen Hill; No. 2 Argent Mine (F. W. Thomas and E. Everett); Barnett Mine (E. Denehey); Oonah Mine (Bell and party); Montana Mine (Bell and Ledger); Spray Mine (J. McDermott), around Zeehan.

*Magnet Silver-Lead Mining Company, Magnet.*—During the first seven months an average of about 40 men employed, most of them being on surface work in plant construction. Underground, some repairs were carried out in main shaft, flats, and levels. Very little developmental work was undertaken during this period. Late in August the mill was put to work and 3858 tons treated for 565 tons of concentrates, containing silver, 35,480 oz., lead, 290.3 tons, value £7695.9, also 268 tons of zinc ore recovered. Average of 71 men employed.

#### Coal.

*Illamatha Colliery, Spreyton.*—During the first six months the mine was worked on tribute and 590 tons produced, realising £380. Average of six men at work. The owners then took control cutting over a good deal of the main roadway, relaying tramline, and putting through air shaft, which improved conditions considerably. They then mined 359 tons, valued at £343. Four men at work.

*Aberdeen Colliery, Spreyton.*—Output, 2051 tons, sold for £1435.7. An average of six men engaged.

*Tarleton Colliery, Tarleton.*—Produced 1008 tons, value, £761.4. Average of four men at work.

*Dulverton Colliery, New Bed.*—Total of 574.25 tons, sold for £438.8—two men at work.

*Black Beauty Colliery, New Bed.*—939.7 tons sold for £567. Average of four men at work.

*Esk Bank Colliery, New Bed.*—Six months—187.55 tons produced, realising £151. Two men at work.

*Lucky Hit Colliery, New Bed.*—Three months—four men produced 148.4 tons, sold for £146. Pit closed.

*Shepherd and Party's Miners' Right Claim, New Bed.*—Four men mined 313 tons, sold for £334, closed down.

*Novelty Colliery, Aberdeen, New Pit.*—Five men during the last six months produced 508 tons, value, £355.

*Jeffrey and Bott, South Spreyton.*—134 tons sold for £109.

*H. Bott and Jeffrey Bros., Nook.*—87.8 tons sold for £63.

*M. McCreghan and Son, Vicinity Dawson's Siding.*—Did some prospecting, producing 40.3 tons, realised £24. Sheehan in the same vicinity obtained from crop 9.65 tons, value, £5.

#### Cement and Limestone.

*The Goliath Portland Cement Company Limited, Railton.*—Operations were continuous throughout the year except for necessary stoppages for repairs and maintenance. Output was well maintained and plant improved considerably by the provision of additional storage capacity for both raw material and finished product. A new coal plant was installed for firing the large kiln, effecting greater economy and cleanliness in this department and general improvement in production. The Company obtains coal supplies from the Dulverton and Spreyton fields, although bulk of requirements come from the East Coast collieries. Average number of men employed, 166.

*Broken Hill Proprietary Company Limited, Limestone Quarry, Eugenana.*—Produced 250,302 tons of limestone for steel works at Newcastle, New South Wales, an average of 139 men employed.

*Leary's Lime Works, Eugenana.*—264 tons of lime were produced, realising £609.25. An average of two men employed.

*Blenkhorn's Lime Works, Railton.*—Some 758.25 tons were produced, valued at £1611. Average of five men at work.

#### Silica.

*The Barock Mining Company, Silica Quarry, Ulverstone.*—105 tons were quarried and shipped to the mainland, total value, £98. A few men employed intermittently.

#### Gold.

*Narrawa Creek Gold Mine, Moina (A. H. Higgs).*—The manager reports as follows:—"During the first half of the year operations were confined to milling with the small plant, but it became evident that the mine could not pay working on such a small scale. Arrangements are in hand to deal with larger quantities of ore by the installation of additional plant. Supplies were drawn from lode working close to mill. The lowest point worked from tunnel level consists of siliceous ore associated with a high proportion of iron-pyrites, also galena. Gold values have not diminished compared to the oxidised ore mined near surface. Considerable work in the way of providing transport facilities from the main road was carried out. The output for the year was 127.57 oz. of gold which realised £900. An average of five men were employed."

*West Coast Gold Mines, Middleton Creek, Corinna.*—The manager, Mr. A. J. Davey, reports:—"During the first quarter have been sluicing some shallow ground on the hillside with a limited water-supply; three men obtained 11 oz. in four weeks.

In Savage River area 7 oz. valued at £54 were produced by four men.

At North Zeehan 0.85 oz. was won by a road man, valued at £6.

At the Forth River 1 oz. valued at £7.8 was dished by an old prospector.

*Mt. Bell Diggings.*—C. Packett did a little prospecting and recovered half an oz. of gold. He and another man have been opening up what appears to be a fine body of clay.

*West of Lyons River.*—About 4½ miles past the Hydro-Electric Department clock on the Arthur River, a party of Smithton men have been prospecting and indications are favourable.

#### Osmiridium.

18.5 oz. valued at £288.7 is the recorded output from the vicinity of the Savage River.

#### Wolfram.

11737/M. (A. H. Higgs), Moina.—Part of the old Squib Mine—some prospecting work was carried out here, and the old tailing dump was retreated and 0.6 tons of concentrates recovered containing 0.4 tons of WO<sub>3</sub>. Two men at work for six months.

*Law-kem-law Wolfram Mine, Moina.*—The main tribute party on this mine, H. Burford, carried out quite a good deal of developmental work, but on the whole the formation has been very small. Five tribute parties were engaged for about six months, three for three months, and only one for the first quarter. 10.6 tons of concentrates produced, containing 740 units of WO<sub>3</sub>, valued at £2078. An average of nine men at work. The veins are, on the whole, small and patchy.

*Wolfram and Tin.*

*Red Robin Mine, Moina.*—Some 0.6 tons of a mixed product were won, assaying 31.05 per cent. tin, and 42 per cent. WO<sub>3</sub>, value £108. Three men at work intermittently.

*Wolfram, Tin, and Bismuth.*

Two tons of mixed product recovered containing tin, 1 ton; wolfram, 31 units; bismuth concentrate, 0.9 tons; total value, £673.

*Scheelite.*

*King Island Scheelite Mine, Grassy, King Island.*—The manager reports as follows:—"The earlier part of the year was occupied with the mill erection, &c., and milling operations commenced early in July. To the 31st December, 1938, 9655 tons of ore were milled, producing 44.15 tons of scheelite concentrates of a grade 72 per cent. WO<sub>3</sub>. Milling during that period indicated that finer grinding than 1/16" was necessary for the efficient separation of the scheelite from the garnet gangue. It was decided to instal two Huntington Mills for the finer grinding in order to improve recoveries. These mills are expected to be in operation early in the ensuing year. Ore from the lode formation situated on the hill slopes which extend down to the sand dunes along the coast line is mined by open-cut methods, and in places a sand and clay overburden has to be removed to open up the lode. A power shovel is used for the removal of overburden which is kept well ahead of the ore faces to ensure a continuity of ore for mill requirements. Milling is carried out three shifts daily while one shift is necessary for quarrying. At the end of the year the total number of men employed was 47."

The following was previously reported:—"Mined 9865 tons, milled, 9705 tons of ore, sold, 30.5 tons, containing 2264.7 units, valued at £6853.8. An average for the year of 35 men employed."

*Copper-Nickel.*

*Australian Nickel Company, Nickel Siding, Zeehan.*—Crude ore raised during 1938 was realised on. 244.72 tons contained 11.19 tons of copper and 19.75 tons of nickel. The Company gave the value as £1019.

*Iron Deposits.*

*J. Linell-Cook (Holdings), Natone.*—Some trenching, shaft sinking, and diamond drilling was done on the Rutherford property at Natone, near Burnie. Some clearing and sampling was also carried out by the Federal Government on the Blythe and Comstock deposits.

*Copper.*

F. W. Emmerton is still using the precipitating boxes on Murray's Reward Claim at Balfour for recovery of copper by cementation process. No sale was recorded during the term.

Some slag was picked out and sent to Mt. Lyell Mining and Railway Company from the old Oonah Smelters at Zeehan, weighing 2.8 tons, containing 0.39 tons copper, and 194oz. silver. This is included in the Company's return.

*Manganese.*

A. G. Black, on behalf of mainland investors, is carrying out some prospecting work on the Dial Range.

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

*Men Employed.*—The average number of men employed in the mining industry for the year was 1202, compared with 1409 for the previous year.

*Accidents.*—Accidents registered under the provisions of the Mines and Works Regulation Act were 12, including one which terminated fatally. Eleven occurred on the surface and one underground. The fatal accident occurred at a tin-slucing mine. Evidence at the inquest disclosed that the man had been slucing a face 15 feet high with a nozzle. He had been away a few minutes and was returning, when he noticed the face starting to fall. He thought he was far enough away to be out of danger, but the fallen material flowed out and enveloped the lower part of his legs, knocking him against a hard boulder. He suffered a fractured pelvis and other injuries, from which he died 17 days later. Of the other accidents, two were abdominal ruptures caused from lifting material, another resulted in a fractured rib through the victim being struck by a lump of pug rolling down while he was battering an alluvial face. A man was helping others to carry a nozzle when one of the others slipped and fell,

causing the victim to temporarily have the full weight, and resulting in a severe strain to the muscles of the back. Another man was engaged keeping the inlet of a jet elevator free, when he got his foot caught in the suction, causing a sprained and dislocated ankle. The other accidents were of a minor nature.

*Inflammable Liquids.*—The advent into Tasmania of another major oil company caused a great expansion in the number of installations for storing and handling petrol, and attention to work in connection with these occupied a great deal of time. No matter for serious complaint came under notice.

*Explosives.*—The quality of explosives has been satisfactory, and also conditions of storage at the main centres where used. No mishaps in handling have been reported. Landing in Launceston is supervised by the harbour authorities.

*General.*—In addition to the usual work performed in connection with the administration of the provisions of the Mines and Works Regulation Act, the Inflammable Liquids Act, and the Explosives Act, a number of examinations were made and reports furnished in connection with applications under the Aid to Mining Act. Some work was also done relating to the Workers' (O.D.) Relief Fund Act.

## MINING OPERATIONS AND PRODUCTION.

*Coal.*

Industrial trouble caused a further drop in the output of coal to a total of 63,623 tons, valued at the mine bins at £46,778; compared with 72,728 tons for the year 1937.

At the Cornwall Mine the output was 43,381 tons, valued at £32,125, an increase over the previous year of 14,690 tons. During the year an increased tonnage was mined from the upper "Blue" seam. An average of 118 men was employed.

There was no production from the Mount Nicholas Mine.

Production from the Jubilee Colliery was 13,552 tons, valued at £8850, which gave employment to 45 men. The output was 117 tons less than in 1937. Reopening of the Cardiff seam was continued, and an increased tonnage was mined from the workings.

At the Fingal Coal Mine 834 tons, valued at £417, were mined, being a reduction of 2368 tons compared with the previous year. Two men only were employed.

The output from York Plains Colliery was 599 tons, valued at £679, and three men were employed. Production was 290 tons less than in 1937.

At the Stanhope Colliery, near Avoca, production was 5257 tons, valued at £4708. This was an increase of 1204 tons for the year, and was mined to a great extent from pillar workings. During the year the continuation of the seam above an extensive fault was located, and a new heading to develop it was started.

*Gold.*

The average price of fine gold for the year was £7.125 sterling per fine ounce. Production of fine gold for the year was estimated at 1701.3 oz., valued at £12,112.7 sterling; compared with 2945.1 oz., valued at £20,757.98 for the previous year, a decrease of 1243.8 oz. The decrease was due to a reduced production from treatment of old slime, by the Grosvenor G.M. Co. at Beaconsfield. No fresh discoveries of importance were reported. At Beaconsfield the treatment of dump slime by the Grosvenor G.M. Co. was continued, 9025 tons being treated, from which were recovered 481 tons of concentrates, estimated to contain 1032 oz. of fine gold, valued at £7322.6, and 17.2 tons of copper of a gross value of £790 sterling. Twenty-one men were employed. At the close of the year the plant was shut down, as all the dump material available had been treated.

At the Golden Horseshoe Mine the sinking of a winze to 20 feet below the 60-foot was completed by three men. Stone, mainly from this work, was treated, for a return of 20.85 oz. fine gold. They reported that the reef was 1 foot in width, but irregular.

At Lefroy, crushing by battery of material from the Pinafore mullock dump was continued by F. Randell, who crushed 1808 tons, for a return of 113.5 oz. fine gold. Four men were employed.

In the last quarter, H. A. Trippree crushed 650 tons from the old mullock dumps of the Golden Point, for 20.8 oz. fine gold. Two men were employed. Otherwise gold mining in the district was quiet.

In the Lisle Basin intermittent alluvial mining was done by 10 men, as water was available, for a production of 125.5 oz. fine gold; and at Cradle Creek two to three men, working on tribute, produced 57.1 oz. fine gold.

At Alberton, McCann's Associated G.M. Co. continued crosscutting the series of small reefs from the main adit. At the close of the year some stone had been broken for a trial crushing, but there was no production. Five men were employed.

At the Mount Victoria Gold Mine some prospecting was done, which did not disclose anything of economic value. From the treatment of 50 tons of sand tailings by tabling, concentrates containing 5.2 oz. of fine gold were recovered. Three men were employed.

At New River the New River Prospecting Syndicate, by nozzle sluicing in shallow ground, won gold containing 17.6 oz. fine. Two men were employed.

Gold equivalent to 27.5 oz. fine was sold in small lots by miscellaneous producers from the Ringarooma, New River district.

The sinking of a shaft at New River to further test an alluvial lead, in which good values were said to have been indicated over a limited area, by boring was started, but, owing to trouble with pumping the water, progress was slow, and the bottom had not been reached at the close of the year.

At the Endurance Mine, South Mount Cameron, bullion containing 35.6 oz. fine gold was got by passing tin concentrates over an amalgamated copper table, and other small lots were won from tin concentrates in the Herrick, South Mount Cameron, and Gladstone districts.

At Mathinna, 119 tons from the Old Boys Mine were treated for bullion, and concentrates containing 27.32 oz. fine gold was recovered. Five men were employed. Work was then suspended. Some development work was done at the Enterprise Mine. There was no production from the Golden Gate Mine.

A small Government battery was moved from New River and erected at Mangana, where a few tons of dump material were crushed. From this and some alluvial, 19 oz. fine gold were recorded.

#### Tin.

The average price of tin for 1938 was £189.6 sterling per ton, and recorded production of metallic tin was 1069.2 tons, of a gross value of £204,355 sterling. In 1937 the average price was £242.3, and the production 884.9, valued at £211,641; so, although there was an increase for the year of 184.3 tons, the gross value was less by £7306. The increase was wholly due to the Briseis being on regular production throughout the year.

*Piper's Beach.*—Tabling of beach sands near the mouth of Piper's River was continued by V. Miller, who recovered concentrates estimated to contain 1.7 tons of tin. Two men were employed.

*Story Creek Tin Mining Company.*—Steady production was continued throughout the year, 12,678 tons of ore from stoping and development being milled, for a recovery of 250 tons of high-grade wolfram, of a nominal value of £53,070 sterling, and 32.5 tons of tin oxide concentrate containing 21.1 tons of tin. The average number of men employed was 111. Further driving on Nos. 2, 3, and 4 levels was done with satisfactory results, in proving the persistence of the main characteristics of No. 2 lode. Progress was made in the work of installing units for utilising power from the Hydro-Electric Commission supply. A small dam, to increase the water-supply, was completed towards the end of the year, but, owing to a dry period following the completion, it had not been filled.

*Mount Rex Tin N.L.*—Driving of No. 2 adit from the vicinity of Story Creek, with the object of prospecting a series of tin-wolfram lodes below the upper workings, was continued, and at the end of the year it was entering the vein-bearing zone.

*Aberfoyle Tin N.L., Rossarden.*—Driving of No. 2 adit on 400-foot level was continued to 2957 feet from the approach, and from 2829 feet to 2948 feet along its course 18 veins, each containing tin oxide and wolfram, and ranging in width from 3 to 9 inches, were passed through. The aggregate width of these veins totalled 92 inches. Work in No. 2 adit was then suspended, pending a connection being made with the upper workings. This will eventually be by means of No. 2 main shaft. No. 2 main shaft is located 435 feet south of No. 1 main shaft, and was completed between No. 2 level and the surface by rising and sinking. The shaft will later provide hoisting facilities for future workings about the region of No. 2 adit. Development and selective mining of the vein system on Nos. 1 and 2 levels were continued, and the

results achieved, especially in regard to selective stoping, reflect credit on the mine staff. During the year 14,354 tons of ore were mined and milled for a recovery of 265.6 tons tin concentrates, 33.25 tons wolfram, and 362.75 tons of "seconds." Sales completed were 33.1 tons wolfram, nominal value £7733 sterling, and 233.3 tons of tin concentrates, containing 157.9 tons of tin. The average number of men employed was 107.

*Brookstead Tin Mines, Royal George.*—Production from alluvial workings was 6.38 tons of oxide, containing 4.52 tons of tin.

*Foster's Freehold, Royal George.*—T. Fitzallen, by nozzle sluicing a narrow alluvial lead of moderate depth, returned 1.42 tons of tin oxide, containing 1.03 tons of tin.

Miscellaneous producers about Story Creek, Gipp Creek, and Rossarden sold 5.84 tons of tin oxide, containing 4.09 tons of tin and .5 ton of wolfram.

*Siamese Tin Syndicate, St. Helens.*—This syndicate was hampered by shortage of water in the latter part of the year. From various faces worked, a total of 400,600 cubic yards was sluiced for a production of 86.3 tons of concentrates, containing 60.4 tons of tin. The average number of men employed was 62.

*George Bay Tin Mine, St. Helens.*—The ground sluiced totalled 130,650 cubic yards, and production was 19.64 tons oxide, containing 14.15 tons of tin. Nine men were employed.

*Hunt Tin Mine.*—Four men were employed, and production was 3.05 tons of oxide, estimated to contain 2.26 tons of tin.

*Goshen Tin Mine.*—From hydraulic sluicing 38,800 cubic yards, a recovery of 8.68 tons of concentrates, containing 6.23 tons of tin, was recorded. Eight men were employed.

Miscellaneous parties, comprising 20 men, in the St. Helens district, sold oxide, estimated to contain 9.2 tons of tin.

*Tasman Tin N.L., Lottah.*—From early in the year the mine was worked by tributers, and from open-cut operations 24,528 tons were put through the battery, for a recovery of 46.62 tons concentrates, estimated to contain 33.32 tons of tin. The average number of men employed was 32.

*Michael Tin Mine, Lottah.*—Operations ceased early in the year, after producing .68 tons of concentrates, containing .467 tons of tin, from crushing 300 tons of ore.

*Cambria Tin Mine.*—Work was carried on during part of the year only, for a production of 4.59 tons of oxide, containing 3.2 tons of tin.

*Laffer Tin Mine, Weldborough.*—From sluicing decomposed granite leader country, a total of 2.25 tons of oxide, containing 1.4 tons of tin and a small quantity of wolfram, was produced. The average number of men employed was three.

*Weld Tin Syndicate (Bryce & Co.).*—This syndicate produced 8.85 tons of oxide, estimated to contain 6.08 tons of tin.

*Niagara Syndicate (Bryce & Co.).*—This syndicate, working fairly shallow ground on the Weld River, and employing two to three men, produced 3.3 tons of oxide, containing 2.22 tons of tin.

*Weld Tin Mine, Moorina.*—This mine carried on sluicing on slopes near the Weld River, for an output of 13.47 tons of oxide, estimated to contain 9.42 tons of tin.

From miscellaneous producers in the Weldborough-Moorina district, 24.04 tons of oxide, estimated to contain 16.8 tons of tin were recorded.

*Waugh Tin Mine, Wyniford River, Pioneer.*—A total of 10.4 tons of oxide containing 2.4 tons of tin, was produced.

*Rajah Tin Mine, Wyniford River.*—This mine was worked for part of the year only, for an output of 3.02 tons of oxide, containing 2.18 tons of tin.

Shean Bros, from 6000 cubic yards sluiced early in the year, produced 4 tons of oxide, containing 2.96 tons of tin.

*Eastern Leads Mine (Ponting and Party).*—A total of 3.01 tons of concentrate, containing 2.19 tons of tin, was recorded.

*Endurance Tin Mining Company.*—Fairly continuous operations were carried on in both deep and shallow ground, the average number of men employed being 55. Production for the year was 131.08 tons of tin oxide, containing 97.1 tons of tin. In addition to the tin, 38.06 oz. of fine gold were recovered. Tributers working on the company's holdings at Pioneer won 15.3 tons of concentrates, containing 11.1 tons of tin, and at Moorina, 3.39 tons of concentrates, containing 2.41 tons of tin.

Alluvial mining in various depths of ground was carried on over a wide range of country about Gladstone.

*Star Hill Syndicate.*—This syndicate, from the Deep Creek and Star Hill workings, sluiced 34,000 cubic yards, for a production of 12.58 tons of oxide, containing 9.06 tons of tin.

*Watt Bros.*—This party, at Boobyalla, produced 8.7 tons of oxide, estimated to contain 6.2 tons of tin.

*Lanka Tin Mine.*—This mine, from sluicing 23,500 cubic yards, produced 3.5 tons of oxide, containing 2.5 tons of tin.

Twenty-two miners, using water from the Mount Cameron race, produced 34.18 tons, containing 24.2 tons of tin.

*Black Duck Mine.*—This mine worked in the early part of the year only, during which, employing eight men, a production of 7.1 tons of oxide, estimated to contain 5.1 tons of tin, was recorded.

Miscellaneous producers in the Gladstone, South Mount Cameron, and Pioneer districts produced 54 tons of oxide, estimated to contain 37.9 tons of tin. The number of men concerned in this result was 60.

*Briseis Consolidated N.L.*—Operations were carried on continuously throughout the year, an average of 142 men being employed. An additional gravel-pump was installed at a lower level than the existing one, which permitted an increased yardage of drift to be handled. The tunnel, with launder for conducting overburden material, was extended, and removal of overburden was carried on during the wet season. A conveyor for handling and dumping overburden into the older workings was installed, and is ready for use when overburden removal is resumed. A new workshop was added to the equipment. Under normal conditions a continuance of profitable operations now seems assured for many years. The material handled was—overburden, 215,000 cubic yards; drift, 722,000 cubic yards. Production was 547.7 tons of concentrates, estimated to contain 394.34 tons of tin, of a gross sterling value of £75,462.

*Lone Brothers Mine.*—Work produced 6.36 tons of oxide, containing 4.07 tons of tin. Four men were employed.

Miscellaneous producers in the Derby, Winnaleah district, numbering 58, sold 54.76 tons of concentrates, estimated to contain 38.33 tons of tin.

*Arba Tin Mine, Branxholm.*—Tribute parties sluiced 96,000 cubic yards, for a recovery of 26.6 tons of oxide, containing 18.75 tons of tin. Nine men were employed.

*Ormuz Tin Mine.*—Four men, sluicing high-drift faces near the Arba, produced 3.28 tons of concentrates, estimated to contain 2.28 tons of tin.

*Ruby Flat Tin Mines.*—Sluicing shallow detritus and decomposed granitic rock, 51,000 cubic yards treated gave a return of 17.75 tons of oxide, containing 12.93 tons of tin. Ten men were employed.

*Mount Paris Tin Mines.*—In the early part of the year the company, employing 15 men, sluiced 9100 cubic yards, for a recovery of 2.35 tons of concentrates, containing 1.72 tons of tin. The mine was later let on tribute, and four to five men produced 7.19 tons of concentrates, estimated to contain 5.21 tons of tin.

*Baker's Discovery, Ruby Flat.*—R. B. Hill and six employees, sluicing detritus and decomposed granitic rock, recovered 7.17 tons of oxide, containing 5.07 tons of tin.

Miscellaneous parties working about Branxholm produced 16.88 tons of oxide, containing 11.8 tons, 35 men being concerned in the production.

In the Ringarooma district, miscellaneous producers, numbering 11, sold 6.15 tons of oxide, with an estimated tin content of 4.3 tons.

*Strait Islands.*—Irregular sales of tin concentrates from Flinders and Cape Barren Islands, totalled 3.66 tons, estimated to contain 2.6 tons of tin. Included in the total is 1 ton of oxide, assaying 71.4 per cent. tin, from Northolm Tin Mines, Flinders Island.

#### Wolfram.

Except for a small lot of mixed tin-wolfram concentrates, the only production recorded was from the Story Creek and Aberfoyle Mines, which was reviewed under the heading "Tin." The average nominal price for the year was £288.75 per ton of tungstic acid (£2 17s. 9d. per unit). The total recorded production for the year was 286.99 tons, of a gross nominal value of £61,001 sterling.

#### Asbestos.

The only sale recorded was 4.25 tons of asbestos, from Beaconsfield, for £67.7.

I wish to place on record my appreciation of help received from miners, managers, and others, in the difficult task of gaining knowledge of an unfamiliar district.

Inspector K. A. RAE (Queenstown) 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 Explosive Act, the Inflammable Liquids, and the Workers' (Occupational Diseases) Relief Fund Act, in the Queenstown and Strahan Districts, for the year ended on the 31st of December, 1938.

#### Men Employed.

The average number of men employed in the division was 1847, an increase of 113 for the term.

Of this number, the Mount Lyell Mining and Railway Company employed 1825, being 111 more than last year.

Twenty-two men were engaged at irregular periods in prospecting for gold in the district.

#### Accidents.

The total number of accidents registered, under the provisions of the Mines and Works Regulation Act, was 64, causing injury to 65 persons. All of these occurred on the Mt. Lyell field (28 on the surface, 36 underground; one fatal, 64 non-fatal). The fatal injury occurred at the Prince Lyell open-cut. A man was boring below a recently blasted face when a large stone became detached and rolled on to him. At the inquest six witnesses were examined before a jury. A verdict of accidental death was returned.

At the surface workings a miner bored into an unexploded charge and received injuries, which, fortunately, did not prove to be very serious.

Through a guard-rail breaking, a man fell 20 feet at the reduction works and broke his arm. Another was severely burnt by hot slag at the smelters.

Underground, two men were injured by falling rock, and suffered from body injuries; two others received head injuries from the same cause; two fell down chutes, and received injuries to arm and back.

The other accidents were of a less serious nature, and consisted of a large proportion of injuries to hands and feet.

The incidence of finger accidents is high, and in many cases could be lessened by the use of glove protection; also injuries to the toes might be lessened by the use of steel-protected toe-caps on boots.

Registrations for the year of 1937 were 54 accidents, which caused injury to 54 persons, one of which proved fatal.

#### The Worker's (Occupational Diseases) Relief Fund Act.

Medical certificates, as free from disease, for 257 new employees of the Mount Lyell Company were collected from the certifying medical officers and forwarded to the Board.

Applications for examination for the effects of industrial occupations, under the provisions of the Act, were received from 63 workers, who are, with one exception, employees of the Mount Lyell Company. Arrangements were made for their examination, and of this number—

47 men were certified as not suffering.  
6 as partially incapacitated.  
10 as incapacitated.

Medical certificates for these were forwarded to the Board. In one case an appeal was made to a medical referee.

#### Inflammable Liquids.

During the year approval has been granted for the installation of petrol storage to the capacity of 2500 gallons. Inspections have been made at the various depots in the district, and some minor matters have been adjusted.

#### Explosives.

Supervision has been given to the transport, storage, landing, and general use of explosives in the Queenstown-Strahan District. The quantities landed at Regatta Point for the year were:—

For Queenstown—	
Polar A.N. gelignite "50" .....	275,000 lb.
Polar quarry monobel .....	87,500 lb.
Polar blasting gelatine .....	1,000 lb.
Polar gelatine dynamite .....	1,200 lb.
Detonators (number) .....	180,000
Electric detonators (cases) .....	11
Safety fuse (cases) .....	192
Fuse igniters (number) .....	50,000
For Zeehan District—	
Safety fuse (cases) .....	8

The quality of the explosives has been satisfactory, and the use of the non-freezing type is general.

*The Mount Lyell Company's Mines and Works.*

The major portion of the inspection work of this district is at the Mount Lyell Company's Mines and Works, and during the year frequent inspections have been made.

*Mining.*

An increased tonnage of ore has been obtained through the continued expansion of the open-cut method of mining in use at the West Lyell mines, and, although the average value of the ore is lower, there has been an increase in the amount of the valuable metals produced.

The output of ore from all mines was 1,050,094 tons, and of this over 80 per cent. was mined at West Lyell. For the previous year the output was 868,207 tons.

*West Lyell Mine.*

The West Lyell and Prince Lyell sections are both worked by open-cut operations, an average of 332 men being employed. The quantity of ore mined was 872,549 tons; also a large amount of overburden was mined and mostly used in the formation of road embankments.

As the main mining activities are now at West Lyell, it has been the policy of the company to concentrate the subsidiary plant and equipment at this centre, and during the year an active building programme has been carried on. A large steel framed workshop, and other buildings needed, have been grouped in a central position.

The change-house for the men has been enlarged, and a branch assay office built.

An additional electrically-operated shovel of 2½ yards capacity, a caterpillar tractor fitted with a heavy scraper, and several new motor-trucks have been added to the equipment.

*North Lyell and Crown Lyell Mines.*

At the North Lyell Mine no further development work has been done, and a decline in the production is noticed as the ore reserves are depleted. At the Crown Lyell Mine the low-grade ore reserves are being fully exploited, an increased tonnage being obtained.

*Lyell Comstock Mine.*

The sinking of the main shaft was completed to the No. 10 level, which was opened out 100 feet below No. 9 level, and the main crosscut has been driven 268 feet from the ore-body at 163 to 220 feet. At 246 feet from the shaft stoping has been commenced.

The main ore-body on No. 9 level has been stoped over its full area. Although it is smaller than on No. 8 level, the ore is of similar character and grade.

The quantity of ore mined was 66,895 tons. An average of 182 men was employed. The ore was stoped from all levels from No. 4 to No. 9, and a small quantity obtained from the open-cut.

The quarry that is worked in conjunction with the mine supplied filling material for the stopes.

Safe working conditions have been maintained at all the mines during the year, and no uncontrolled movements of a serious nature have occurred. The system of filling the worked-out portions, as used in the North and Crown Lyell Mines, has proved to be a large factor in the safe working of these mines.

*Ore Mined During 1938.*

	North Lyell.	Lyell Comstock.	Crown Lyell.	West Lyell.
1st quarter	23,913	20,485	9,139	209,897
2nd quarter	20,943	21,613	10,634	215,103
3rd quarter	23,394	23,208	11,789	226,156
4th quarter	17,750	21,589	13,088	221,393
	65,990	66,895	44,650	872,549

*Reduction Works.*

The concentration plant ran continuously throughout the year, treating 1,084,131 tons of ore, which produced 58,822 tons of copper-bearing concentrates, 50,278 tons of pyritic concentrates. This is substantially greater than any previous year.

The smelter plant ran for 334 days, and produced 12,791 tons of blister copper. Improvements to the multi-cyclone flue-dust collecting plant, and the lengthening of the furnace from 10 feet 6 inches to 14 feet, were commenced at the end of the year.

At the machine shops a new shaper machine and a new shearing machine were installed, and the shops have been extended.

In the railway department a new Abt locomotive and a diesel-driven shunting engine have been put into commission.

*Quarries.*

Five thousand seven hundred and fifty-one tons of limestone were obtained from the Mount Lyell Company's quarry at Hall's Creek and transported to the reduction works.

The silica quarry, situated on the Strahan-road, yielded 6781 tons, which was used as flux.

The Comstock quarry, as before mentioned, supplies filling for the lower levels of the mine.

*Rainfall.*

	1937.	1938.
Gormanston	105.55	115.30
Lake Margaret	139.03	138.53
Queenstown	91.66	96.45

*Industrial.*

Work has proceeded in a satisfactory manner under the terms of the 1937 agreement.

The sick and accident fund is operating smoothly, and is in a sound financial position.

*General Production for Mount Lyell Company.*

	1938.		1937.	
		£		£
Copper (Electrolytic)	12,700 tons	579,924	12,381 tons	808,391 Str.
Silver	67,176 oz. f.	5773	83,233 oz. f.	7518 "
Gold	7919 "	62,239	6171 "	43,561 "
Pyritic concentrates	50,278 tons	62,847	40,632 tons	50,790 A
Limestone	5751 "	2013 A	...	...
Silica	6781 "	1695 A	...	...

The only other return of valuable metal from this district is 48.33 ounces (fine) of gold, produced by prospectors working intermittently in the surrounding district. The Jane River returns are not included.

A party is engaged in testing the area where a former mine, known as McDowell's P.A., situated on the southern slope of Mount Lyell, was worked some years ago.

Total gold production for the district for 1938:—

	Ounces fine.	Value. £
The Mount Lyell Company	7,919	62,239
Various prospectors	48.33	353.579
Total value		£62,592.579

*Prosecutions.*

Legal proceedings were taken against one man for using a rock-drill without water-hose connection. A conviction was recorded, with fine and costs.

## APPENDIX VI.

REPORT OF THE MOUNT CAMERON WATER-RACE BOARD  
FOR THE YEAR ENDED 31st DECEMBER, 1938.

SIR,

We have the honour to submit our report for the year ended 31st December, 1938.

*Main Race.*

The race is in fair order, excepting from the main intake to the Little Mussel Roe River. It was intended to clean out this portion of the race last winter, but as there was insufficient water in the Little Mussel Roe River and the Old Chum Creek to carry on with it was deferred. It is proposed to undertake this work with the renewal of the Old Chum Creek fluming at a convenient time.

The race from the Little Mussel Roe River to channel-keeper's cottage was cleaned out during the year. From that point to the concrete syphon cleaning and scrubbing is necessary, at a cost of approximately £50.

*Branch Races.*

The race from dam above Channel-keeper Moore's to Star Hill Syndicate's dam, in the vicinity of Ogilvie's Bridge, has been cleaned out. The race from the cutting to the Mary Dams has also been cleaned out. A race from the new syphon to the No. 1 dam has been put through with plough and tractor. This was to enable the overflow of water from the syphon to flow into the No. 1 dam.

*Syphons.*

All in good order, with the exception of the Ringarooma one, which causes much trouble and loss of water.

*Flumings.*

The old iron fluming across the Old Chum Creek is past repair; this is to be replaced by a wooden one.

*Dams.*

All are in satisfactory order.

*Culverts.*

One new culvert was put across the race, near Channel-keeper Keegan's cottage, and the one across the race, about six miles from Gladstone, will have to be renewed.

The rainfall from 1st August to the 31st December, 1938, was only 4 inches 17 points.

We have the honour to be,

Sir,

Your obedient servants,

J. B. SCOTT, Chairman of the Board.  
C. G. RYAN, }  
GEO. MALLINSON, } Members.

The Honourable the Minister for Mines.

## STATEMENT FOR THE YEAR ENDED 31st DECEMBER, 1938.

*Rainfall.*

The registered rainfall for the year was as follows:—

Great Mussel Roe .....	31 inches 3 points
Little Mussel Roe .....	30 inches 21 points

*Revenue.*

The revenue for the year amounted to £1217 2s. 7d., being a decrease of £13 12s. 10d. on the previous year.

*Disbursements.*

The expenditure for the year amounted to £1055 14s. 10d., being an increase of £121 10s. 6d. for the previous year.

*Statistics.*

The statistics for the year are as follows:—

Average number of claims supplied per week	12
Greatest number supplied in any one week	17
Total number of heads supplied under—	
Fixed or cash scale .....	428½
Royalty or credit scale .....	3898

Tin ore raised—	Tons.	Cwt.	Qr.	Lb.
Under royalty scale .....	34	17	3	17
Under fixed scale .....	11	10	3	27
Total .....	46	8	3	16

Average number of men employed per week ..... 25

*Receipts.*

	£	s.	d.
Water sold under fixed scale .....	216	7	7
Water sold under royalty scale .....	1,000	15	0
Total .....	£1,217	2	7

*Expenditure.*

	£	s.	d.
Salaries and wages .....	800	0	0
Travelling expenses .....	19	16	11
Insurance .....	10	11	1
Stationery and printing .....	3	13	6
Stores .....	29	2	2
Repairs to manager's and channel-keepers' cottages .....	31	8	5
Dismantling old flumings .....	3	13	9
Repairs to race and syphons .....	141	18	8
Freight and cartage .....	5	10	1
Refund, excess water charges .....	10	0	3
Total .....	£1,055	14	10