(No. 10.)

TASMANIA

REPORT

OF THE

SECRETARY FOR MINES

FOR

YEAR ENDING DECEMBER 31ST

1933

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

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

TASMANIA:
WALTER E. SHIMMINS, GOVERNMENT PRINTER, HOBART

1934

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TASMANIA

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SCALE OF MILES.

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HUNTER Is. ROBIN Is. CAPE BARREN Is. CLARKE Is.

STANLEY WYNYARD BURNIE PENGUIN ULVERSTONE DEVONPORT KELSO BEACONSFIELD GLADSTONE

BALFOUR MAGNET WARATAH ZEEHAN QUEENSTOWN STRAHAN ROSEBERY WILLIAMSFORD

LATROBE RAILTON SHEFFIELD LAUNCESTON DELORAINE EXTON WESTBURY CHUDLEIGH CRESSY LONGFORD PERTH EVANDALE

SCOTTSDALE DERBY BRANXHOLM RINGAROOMA LILYDALE PIONEER MOORINA WELDBOROUGH BLUE TIER ST HELENS

MATHINNA FINGAL ST MARYS MT NICHOLAS SEYMOUR AVOCA CAMPBELL TOWN ROSS LAKE LEAKE

ARTHUR LAKES WOODS LAKE LAKE SORELL LAKE CRESCENT TUNBRIDGE OATLANDS SWANSEA TOOMS LAKE

SCHOUTEN Is. DULVERTON JERICHO LAKE TIBERIAS SOUTHWELL APSLEY TRIABUNNA

KEMPTON BAGDAD BRIGHTON BRIDGEWATER SORELL MARIA Is.

MIENA LAKE ST CLAIR LAKE ECHO GREAT LAKE CANAL

HAMILTON ELDERSLIE MACQUARIE PLAINS GLENORA NEW NORFOLK HOBART KINGSTON

LAKE PEDDER FRANKLIN CASTLE FORBES BAY GEEVESTON MARGATE HUONVILLE ELECTRONA KETTERING CYGNET WOODBRIDGE GORDON BRUNI DOVER CARNARVON ISLAND

PORT DAVEY CATAMARAN

MINERAL REFERENCE

GOLD
SILVER LEAD
TIN
COPPER
IRON
COAL
OIL SHALE
ZINC LEAD
CEMENT WORKS
OSMIRIDIUM

HYDRO ELECTRIC POWER

POWER SURVEY

EXISTING POWER STATIONS (INSTAL. H.P.)
KNOWN POWER SCHEMES
UNINVESTIGATED POWER
MAIN TRANS. LINE (88000V.)
SECONDARY TRANS. LINE 44,000 V. AND UNDER.
FUTURE 88,000V. TRANS. LINE
FUTURE SECONDARY TRANS. LINES
TOWNS

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REPORT OF SECRETARY FOR MINES.

Department of Mines,
Hobart, 29th August, 1934.

SIR,

I HAVE the honour to present my report on the Department of Mines for the year ended 31st December, 1933.

APPENDICES.

The following reports, &c., are appended:—

Annual reports of—

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

Map of Tasmania indicating distribution of mineral areas and water-power resources, hydro-electric transmission-lines, existing power-stations, &c.

GENERAL STATEMENT.

Notwithstanding the low market prices ruling for copper, lead, and zinc, the total value of the output of minerals and mineral products for the year amounted to £1,053,373, which exceeds that of last year by £156,205.

In metals, increases are shown in tin, gold, and silver. Wolfram (tungstic acid), for which for some years past there has been no demand, is now a marketable product at a remunerative price.

In manufactured commodities, carbide and cement are being produced in greater quantity than last year.

Copper.—The value of output of this metal greatly exceeds that of any other. Normal production of electrolytically refined metal proceeded uninterruptedly at the Mount Lyell Mines. Increased quantities of ore were treated to compensate for the general decrease in grade. The price of the metal remained at an abnormally low figure. The output for the year was 10,739 tons, valued at £395,286, being a slight decrease in both quantity and value compared to last year.

Tin.—The comparatively high price for tin was responsible for greater attention being directed to both alluvial and lode deposits. Production of the metal amounted to 957 tons, valued at £190,041, representing a substantial increase on that of last year.

A much enhanced output can be anticipated for the ensuing year. A number of deposits, on which preparatory work is in progress, are expected to reach the productive stage in the near future.

Silver and Lead.—The output of silver-lead ore has slightly decreased in both quantity and value.

The average price of lead was lower than that of last year. Apart from that recovered in the treatment of copper ore at Mount Lyell, all silver is obtained from galena.

Zinc.—Production of zinc ore has remained suspended. The extensive deposits of zinc-lead ore at the Read-Rosebery Mines are awaiting more favourable market rates before productive operations are likely to commence.

Gold.—The increased price offering for gold has stimulated interest in the production of the metal. The yield exceeded that of last year by 735 ounces. The chief and only regular source of the metal is that recovered in the treatment of copper ore at Mount Lyell. A good deal of prospecting and limited developmental work has been carried out on the various old fields, in some cases revealing encouraging prospects. The appended reports of the District Inspectors of Mines contain detailed information of mining and developmental operations carried out during the year.

Osmiridium.—Production of osmiridium has receded considerably, the output being 548 ounces, which realised £4843. The depressed condition of the industry is due to the depletion of the deposits, as well as to low market prices offering. Producers have not infrequently been faced with the difficulty of disposing of the metal. A good deal of investigation has been made by prospectors in the search for new fields, but their efforts have not been successful.

Bismuth.—A limited quantity of bismuth ore was raised from the Mount Stormont Mine, Moina District.

A settled scheme of productive work has not yet been established at this mine. The output was 1·32 tons, which realised £705. A feature of this ore is the high proportion of gold it contains.

Wolframite (Tungstic Acid).—The quantity produced was 104 tons, valued at £7301. In the two previous years the amount raised was negligible, due to the depressed condition of the market. Wolfram-mining is carried on in conjunction with that of tin oxide, with which it is associated chiefly in quartz veins. The concentrates are separated by electro-magnetic process.

Nickel.—Very little attention has been given to the development and mining of the copper nickel deposits at North Dundas. Concentration prior to shipment is a question exercising the attention of the lessees. It is expected that when a decision in the matter is made developmental, and subsequently productive, work will again be undertaken.

Ilmenite.—Interest continues to be centred in the utilisation of deposits of this sand found in association with beach sand at Narracoopa, King Island, for the manufacture of titanium oxide. Some unexpected difficulty was encountered in producing the requisite grade of ilmenite concentrate for factory processing in Melbourne, causing a temporary cessation of work thereon. Investigations are now in train with a view of overcoming initial obstacles and recommencing productive operations.

Pyrite Deposits.—The West Coast mineral districts contain very large deposits of iron pyrite, and pyrrhotite suitable for the manufacture of sulphuric acid. These deposits are lying dormant. A limited quantity in the form of concentrate, recovered as a by-product in the treatment of copper ore at Mount Lyell, was shipped to Victoria during the year. The greater quantity of sulphur used in Australia for the manufacture of sulphuric acid is imported chiefly, if not wholly, from the United States of America.

Barytes. — Inquiries for this mineral are received from time to time. Although workable deposits occur in various parts of the State, the quantity raised is very small. Transport cost to the seaboard, in addition to the comparatively low price it commands, are the chief factors retarding production.

Coal.—The production of coal in both quantity and value is slightly greater than that of last year. The industry, however, is being carried on under disadvantageous circumstances, owing to restricted markets, and as a consequence operations are not continuous.

Limestone.—The only recorded tonnage of this product raised in the State is that shipped to Newcastle as flux for iron-smelting. Considerable quantities are used in the manufacture of cement at Railton, and for the production of calcium carbide at Electrona, as well as for lime-burning and (in pulverised form) for agricultural purposes, also as a flux at the Mount Lyell Smelters.

Building Stone.—Products from quarries used for building and other structures, for road material, sandstone for grindstones, and sand for industrial uses and manufacturing purposes are not included in the appended statistical tables.

In this connection uniform methods in estimating the total value of production of all mineral products raised for local use have not been adopted between the various States of the Commonwealth, consequently a comparison of the total value of mineral and mineral products, compiled for statistical purposes, cannot be made.

The non-metallic mineral industry is being developed on sound lines.

Dolomite.—A small experimental plant has been established in Hobart to deal with the Smithton dolomite deposit. The syndicate interested in the project is well satisfied with the results obtained. Production of the various products from this material on a commercial scale is forecasted for the near future. These are metallic magnesium, magnesium sulphate (Epsom salts), magnesium carbonate, and oxide respectively, as well as precipitated lime.

Red Granite.—The material is likely to come into more general use for monumental and structural purposes. Unlimited quantities can be obtained at Cole's Bay, Freycinet Peninsula. Unfortunately supplies have not been forthcoming to satisfy the demands from the mainland, due to the leaseholders not being in a position to supply dimension stone. It is expected that the arrangements now in hand will ensure supplies for future requirements.

Calcium Carbide.—The works of the Australian Commonwealth Carbide Company at Electrona produced 4553 tons of calcium carbide, valued at £91,077, being an increase of 504 tons and £31,582 in value respectively over that of last year. At these works lime-sulphur sprays in increasing quantities are manufactured for the use of orchardists.

Cement.—The Goliath Company's works at Railton produced 36,121 tons of cement, valued at £126,424, being 3890 tons in excess of last year's production and £19,615 in value.

AID TO MINING.

Numerous applications for assistance in developmental work, as well as for sustenance for prospecting, were received.

For varying periods ninety prospectors were granted sustenance allowance. Although no discovery of outstanding importance was recorded, a number of the applicants were successful in locating deposits which enabled them subsequently to engage in productive work. In addition much valuable information was received from reports furnished concerning their investigations.

Financial assistance was granted for developmental and productive operations, involving, in all, the employment of 160 men for more or less limited periods. The help thus afforded proved to be of considerable benefit to the industry.

In one of the West Coast districts assistance rendered at a critical period resulted in the discovery of a new ore-body. Its subsequent development has been the means of providing employment for a considerable number of men and the maintenance of an isolated settlement of several hundred people.

Assistance was also afforded in the purchase of mine equipment, provision for water-supplies, building of dams, &c. Under the provisions of the Aid to Mining Act and the Unemployment Relief Act assistance to the extent of £5109 was rendered to persons engaged in the industry.

THE AID TO MINING ACT, 1927.

Receipts.

	£	s.	d.
Royalty paid by tributers	135	13	10
Sale of plant	25	0	0
Hire of engine	0	8	0
Interest on loans	19	18	9
	£181	0	7

Ore Sales.

Amount received from ore sales		1,644	13 2
Which was distributed as follows:—			
Royalty and interest paid to the State	£155 10 7		
Paid to tributers	1,489 2 7		
		1,644	13 2

Expenditure.

(Part III. of the Aid to Mining Act, 1927.)

Salaries and wages	£68	12	2
Other expenses	62	18	7
		131	10 9

(Part II. of the Aid to Mining Act, 1927.)

Sustenance allowance to prospectors	£812	15	0
Miscellaneous expenses (insurance, cartage, &c.)	6	15	0
Advances to companies under Parts III. and IV.	1,307	18	11
		2,127	8 11
Total		£2,258	19 8

THE UNEMPLOYED RELIEF ACT.

(23 Geo. V. No. 4.)

	£	s.	d.
Drilling and boring at Legunia	490	6	9

Commonwealth Grant.

Drilling shale oil deposits, Latrobe	1,000	0	0

Miscellaneous, General.

Magnet Prospecting Syndicate No Liability (special subsidy)	1,360	0	0
	£2,850	6	9

DIAMOND–DRILLING.

Mount Victoria Goldfield.

Diamond-drilling was commenced on this field just prior to the period to which this report relates, and one hole was completed and another commenced before the close of that year.

The total depth drilled was 849 feet, made up as follows:—

No. 1 bore-hole was drilled to a depth of 200 feet in slates and sandstones, intersecting 1 inch of quartz at 162 feet. Broken sandstone cuttings from 105 to 110 feet, on assay, gave: gold, 13 gr. per ton; silver, 4 dwt. 17 gr. per ton.

Bore No. 2 was put down to a depth of 209 feet in quartzites, slates, and sandstones, cutting veins of quartz between 48 and 50 feet, which were assayed, with the following result: gold, nil; silver, trace.

No. 3 bore was located to intersect the Prendergast reef at a vertical depth of 180 feet, and was drilled to a depth of 214 feet.

A 2-foot reef was cut between 195 and 197 feet, and on assay gave the following result: gold, trace; silver, 1 dwt. 1 gr. per ton. Also samples were assayed from 200 to 203 feet and 203 to 206 feet, and gave: gold and silver, nil; and gold nil, and silver trace—respectively.

No. 4 bore was sited to cut the Prendergast reef further west, and reached a depth of 236 feet.

Reefs were intersected between 194 to 198 feet and 199 to 200 feet, and assay results showed only traces of gold and silver.

Drilling operations ceased on the 29th April, 1933.

Drilling Shale Beds in Mersey River Valley, Latrobe.

In connection with the investigation of the extent and geological structure of the shale field, the drilling campaign was continued.

Boring operations with the Victoria (calyx) drilling plant commenced on the 24th February on the lease of the Tasmanite Shale Oil Company Limited. The operations were continuous until the end of the year, and, in all, 10 holes were put down, all of which intersected the shale seam.

The details of the holes are as follows:—

	Total Depth. ft.	in.	Depth to Shale. ft.	in.	Thickness of Shale. ft.	in.
No. 1	226	6	215	0	4	9
No. 2	205	0	198	6	5	6
No. 3	178	0	170	0	7	6
No. 4	189	0	183	6	5	1
No. 5	197	0	190	9	5	3
No. 6	308	0	302	6	4	7
No. 7	236	0	228	0	5	4
No. 8	275	0	268	2	4	4
No. 9	281	0	273	7	6	8
No. 10	295	5	288	6	2	11

The above represents a total depth drilled of approximately 2390 feet. It is worthy to note that No. 6 hole represented the extension of one sunk in 1932 to shallow depths without cutting shale, while No. 9 represents the deepening of an old hole sunk by the Tasmanian Cement Company over 10 years ago, but which did not go deep enough.

The holes have verified the geological structure as previously outlined, particularly as regards the fault occurring between the Goliath Mine and the Tasmanite Mine. In the vicinity of Bore No. 6 this has a downthrow of 250 feet to the west. The holes also prove that there is little, if any, faulting associated with the basalt dyke.

The drilling campaign has proved that the shale seam, with an average thickness of 5 feet 6 inches, extends over a considerable area to the north of the Tasmanite Mine (without apparently being faulted to any considerable extent).

The seam extends over 70 acres at least between the Tasmanite Mine and the basalt dyke, which gives a reserve of approximately 1,000,000 tons of shale.

Further drilling to the north-west, north, and north-east will be necessary to effect the complete testing of this field.

QUANTITY AND VALUE OF MINERALS.

RETURN showing the Quantity and Value of Minerals produced in the State of Tasmania during the Year 1933.

Mineral.	Quantity.	Value.
		£
Bismuth ..... tons	1·32	705
Barytes ..... "	5	15
Carbide .... "	4553	91,077
Copper ... . "	10,739	395,286
Coal ..... "	116,573	85,848
Cement ..... "	36,121	126,424
Gold ..... ozs. f.	6672·74	41,783
Ilmenite..... tons	550	1256
Lead ... . "	2644	30,987
Limestone ..... "	110,347	33,048
Nickel ..... "	8·65	1948
Osmiridium ..... ozs.	548	4843
Pyrites .... tons	1498	1498
Silver ..... ozs. f.	489,330	39,808
Shale ..... "	3401	1483
Tin .... "	957	190,041
Talc ..... "	8·75	22
Wolfram ..... "	104	7301
Total	...	£1,053,373

The Electrolytic Zinc Company of Australasia Limited recovered 53,956 tons of Zinc, valued at £1,100,950, and 159·5148 tons of Cadmium, valued at £22,330, from other than Tasmanian ores, and employed an average of 739 men.

ASBESTOS.

RETURN showing the Quantity and Value of Asbestos produced from 1899 *to* 1920-33 *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
1920-1933	—	—
Total	3565·5	£7105

BARYTES.

RETURN showing the Quantity and Value of Barytes produced during the Years 1916 *to* 1933 *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
Total	1817	£6948

BISMUTH.

The output for the year was 1·32 tons, valued at £705.

RETURN showing the Quantity and Value of Bismuth produced from 1904 *to* 1933 *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
Total.....	79·119	£25,788

CARBIDE.

The Australian Commonwealth Carbide Company Limited continued operations and produced 4553 tons of carbide, valued at £91,077.

The quantity of limestone quarried for the year amounted to 13,258 tons. The works at Electrona employed 114 men, the limestone quarries at Ida Bay and transportation services gave employment to 40 men, and, in addition, men were engaged by contract in supplying case timber.

RETURN showing the Quantity and Value of Carbide produced during the Years 1922 *to* 1933.

Year.	Quantity.	Value.
	Tons.	£
1922	4512	135,509
1923	3236	64,720
1924... ..	3305	65,660
1925	2934	60,047
1926	3420	68,400
1927	2072	34,896
1928	3829	68,877
1929	3434	53,841
1930	3297	51,437
1931	3903	67,298
1932	4049	59,495
1933	4553	91,077
Total.....	42,544	£821,257

CEMENT.

(Works at Railton.)

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

Year.	Quantity.	Value.
	Tons.	£
1924	21,026	105,130
1925	32,574	162,870
1926	33,611	166,447
1927	38,690	176,779
1928	44,799	189,380
1929	41,798	175,613
1930	37,412	115,520
1931	27,508	96,340
1932	32,231	106,809
1933	36,121	126,424
Total	345,770	£1,421,312

COAL.

RETURN showing the Quantity and Value of Coal raised from 1880 *to* 1933.

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
Total	3,151,950	£2,472,146

COPPER.

The production for the year was 10,739 tons, valued at £395,286.

RETURN showing the Quantity and Value of Copper in Blister Copper and Copper Ore during the Years 1919 *to* 1933 *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
Total	119230·1	7,051,165	33·49	1755	110,263·59	7,052,920

The Mount Lyell Mining and Railway Company Limited: Return for the Calendar Year 1933.

Ore and metal-bearing material smelted:—

Source of Material.	Tons (Dry).
Ore:—From the Company's North Lyell Mine	18,531
Concentrates:—From the Company's North Lyell Mine, Lyell Comstock Mine, Royal Tharsis Mine, and Crown Lyell Mine ore	42,559
Purchased ore	46
Total	61,136
Limestone delivered to works (tons)	3,795
Pyritic concentrates shipped from Regatta Point (tons)	1,498

Blister copper produced:—10,839 tons, containing:

Copper (tons)	10,736	Approximate value, £439,933.
Silver (ozs.)	127,562	
Gold (ozs.)	5,424	

Average number of men employed—

Mining Department—At the Company's North Lyell Mine	416	
Ditto, Lyell Comstock Mine	227	
Ditto, Royal Tharsis Mine	77	
Ditto, Crown Lyell Mine	90	
Miscellaneous	97	
		907
Reduction Works Department (including Lake Margaret)		488
Railway Department—Mount Lyell Railway		86
Total		1,481

Copper produced from the inception of the Company to the 31st December, 1933, 268,814 tons (fine).

Silver produced from the inception of the Company to the 31st December, 1933, 14,598,464 oz. (fine).

Gold produced from the inception of the Company to the 31st December, 1933, 411,969 oz. (fine).

GOLD.

The quantity won was 6672·74 oz. fine, valued at £41,783, as compared with 5937·17 oz., valued at £34,943, for 1932.

RETURN showing the Quantity and Value of Gold won from 1880 to 1933.

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
Total	1,932,325·186	£7,775,202

IRON PYRITES.

The quantity won was 1498 tons, valued at £1498.

RETURN showing the Quantity and Value of Iron Pyrites produced during the Years 1915 to 1933.

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
Total	70,571·973	£95,817

LEAD.

The output was 2644 tons, valued at £30,987, as compared with 2694·06 tons, valued at £32,637, for 1932.

RETURN showing the Quantity and Value of Lead included in Silver-Lead during the Years 1919 to 1933.

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
Total	61,453·462	£1,566,261

LIMESTONE.

The quantity won for the year was 110,347 tons, valued at £33,049.

RETURN showing the Quantity and Value of Limestone produced during the Years 1923 to 1933.

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
Total	1,217,183	£1,055,717

NICKEL.

The output was 8·65 tons, valued at £1948.

RETURN showing the Quantity and Value of Nickel produced from 1927 to 1933 inclusive.

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

OCHRE.

RETURN showing the Quantity and Value of Ochre produced during the Years 1918 to 1933 inclusive.

Year.	Quantity.	Value.
	Tons.	£
1918	100	200
1919	—	—
1920	—	—
1921	14	56
1922	—	—
1923	—	—
1924	20	50
1925	—	—
1926	38	69
1927–1933	—	—
Total	172	£375

OSMIRIDIUM.

The quantity of metal won during the year was 548 oz., valued at £4843, as compared with 784·95 oz., valued at £9075, for 1932.

RETURN showing the Quantity and Value of Osmiridium produced during the Years 1910 to 1933 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
Total	27,223·974	£603,094

The following table gives particulars of osmiridium won from Adamsfield since its discovery up to 31st December, 1933:—

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
Total	12,010	10	13	£246,602	4	7

SCHEELITE.

RETURN showing the Quantity and Value of Scheelite produced during the Years 1917 to 1933 inclusive.

Year.	Quantity.	Value.
	Tons.	£
1917	69	12,130
1918	216	39,252
1919	198·98	43,181
1920	105·09	17,905
1921–1933	—	—
Total	589·07	£112,468

SHALE OIL.

The Tasmanite Shale Oil Company Limited continued operations in the Mersey Valley, with a crude oil production of 56,958 gallons, valued at £1424.

SHALE.

The output was 3401 tons, valued at £1483.

RETURN showing the Quantity and Value of Shale produced during the Years 1910 *to* 1933.

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
Total	30,999	£22,263

RETURN showing the Quantity and Value 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
	Total	319,210

SILVER.

The output was 489,330 oz. (fine), valued at £39,808, as compared with 463,488 oz., valued at £37,304, for 1932.

RETURN showing the Quantity and Value of Silver contained in Silver-Lead and Blister Copper during the Years 1919 *to* 1933.

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	75,398	147,376	22,439	642,158	97,837
1925	597,012·67	86,283	133,181	19,226	730,193·67	105,509
1926	632,066	80,597	134,587	17,394	766,653	97,991
1927	640,575	75,135	101,207	11,889	741,782	87,024
1928	564,156	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
T't'l	7,185,461·55	970,011	2,215,821	315,428	9,401,282·55	1,285,439

TIN.

The output was 957 tons, valued at £190,041, as compared with 793·92 tons, valued at £109,767, for 1932.

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* 1933.

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
Total	140,338·726	£16,522,225

* Metallic Tin.

TALC.

The output was 8·75 tons, valued at £22.

RETURN showing Quantity and Value of Talc produced during the Years 1928 to 1933 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
Total	97·1	291

WOLFRAM.

RETURN showing the Quantity and Value of Wolfram produced from 1899 to 1933 inclusive.

Year.	Quantity.	Value.
	Tons.	£
1899 to 1903 inclusive	57·25	2157
1904	15·5	1147
1905	32·25	2371
1906	19·75	1465
1907	40·75	4411
1908	4·5	338
1909	28·35	2494
1910	67·35	7280
1911	69·96	7769
1912	66·49	6601
1913	68·07	7040
1914	46·873	4327
1915	94·685	11,115
1916	106·265	16,910
1917	172·190	28,714
1918	155·362	27,239
1919	120·907	26,613
1920	70·89	13,626
1921	10·34	676
1922	19·26	1024
1923	96·86	6150
1924	54	2785
1925	174·170	14,658
1926	83·15	5265
1927	148·57	9886
1928	176·15	12,094
1929	151·86	18,358
1930	112·6	12,216
1931	0·29	16
1932	—	—
1933	104	7,301
Total	2368·552	£262,046

ZINC.

No zinc was produced from Tasmanian ores during the year.

RETURN showing the Quantity and Value of Zinc produced during the Years 1919 to 1933 inclusive.

Year.	Quantity.	Value.
	Tons.	£
1919	285	13,110
1920	9·3	334
1921–1923	—	—
1924	2748·75	90,485
1925	3112·69	110,691
1926	5377·75	183,362
1927	6326·2	181,242
1928	7112	188,691
1929	6997	185,964
1930	943	19,322
1931–1932–1933	—	—
Total	32,911·69	£973,201

Electrolytic Zinc Company of Australia Ltd.—Return for calendar year 1933:—

	Tons.
Production of slab zinc	53,956
Production of metallic cadmium	159·51

The above is from ores other than Tasmanian.

The average number of men employed at Risdon was 750.

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

The average number of men employed was:—

Surface	24
Underground	6
Total	30

VALUE OF METALS AND MINERALS RAISED.

RETURN showing Value of Minerals and Metals Raised in Tasmania from 1880 to 1933 inclusive.

Mineral or Metal.	Value.
	£
Asbestos	7105
Barytes	6948
Bismuth	25,788
Cadmium	20,914
Carbide	821,257
Cement	1,421,312
Coal	2,472,146
Copper (Blister) to 1918 (now shown under Silver and Copper)	13,778,527
Copper Matte	133,736
Copper Ore to 1918, (now under Copper)	577,873
Copper (from 1919)	7,052,920
Gold	7,775,202
Ilmenite	1256
Iron Ore	25,701
Iron Pyrites	95,817
Lead (from 1919)	1,566,261
Limestone	1,055,717
Nickel	35,246
Ochre	375
Osmiridium	603,094
Scheelite	112,468
Shale	22,263
Silver-Lead to 1918 (now shown as Silver and Lead)	6,429,291
Silver	1,285,439
Talc	291
Tin	16,522,225
Wolfram	262,046
Zinc	973,201
Unenumerated prior to 1894	31,988
Total	£63,116,407

STATISTICS OF PRODUCTION.

RETURN showing the Annual Value of Mineral Products for the State of Tasmania from 1880 *to* 1933.

Year.	Value.	Year.	Value.
	£		£
1880	554,031	1909	1,574,995
1881	602,723	1910	1,432,193
1882	556,306	1911	1,349,497
1883	560,873	1912	1,493,502
1884	468,302	1913	1,415,700
1885	518,885	1914	1,007,038
1886	489,966	1915	1,225,575
1887	593,256	1916	1,521,050
1888	616,733	1917	1,582,322
1889	504,718	1918	1,597,694
1890	444,210	1919	1,301,090
1891	528,388	1920	1,421,104
1892	526,909	1921	822,851
1893	627,909	1922	1,013,415
1894	732,764	1923	1,219,456
1895	575,692	1924	1,496,804
1896	662,058	1925	1,700,861
1897	1,006,140	1926	1,808,847
1898	1,071,084	1927	1,621,027
1899	1,660,622	1928	1,593,828
1900	1,888,695	1929	1,790,653
1901	1,763,896	1930	1,270,114
1902	1,378,406	1931	894,986
1903	1,354,044	1932	897,168
1904	1,379,204	1933	1,053,373
1905	1,729,129	Unenumerated prior to 1894	31,988
1906	2,257,147		
1907	2,277,159		
1908	1,650,027	Total	£63,116,407

STATISTICS OF MINING COMPANIES.

RETURN showing the Amounts Paid in Dividends by Mining Companies during the Year ending 31*st December,* 1933.

Mines.	Dividends.
	£
Copper	...
Gold	...
Tin	9967
Silver	...
Coal	4000
Total	£13,967

RETURN showing the Total Area of Land and Number of Sluiceheads of Water Applied for during the Year ending 31*st December,* 1933.

Mineral.	Number.	Sluiceheads.	Area.
			Acres.
Bismuth	1	...	10
Barytes	1	...	10
Copper-Nickel	1	...	20
Dolomite	1	...	5
Granite	2	...	35
Gold	39	...	923
Gravel	1	...	40
Minerals	1	...	237
Phosphate Rock	1	...	10
Silica	1	...	25
Silver-Lead	2	...	120
Shell Lime	1	...	5
Tin	125	...	2602
Machinery Sites and Mining Easements	5	...	12
Water-rights and Dam Sites	93	282	287
Licences to search for Coal	1	...	470
Total	276	282	4811

RETURN showing Total Number and Area of Leases and Licences Issued during the Year ending 31*st December,* 1933.

Mineral.	Leases.	Sluiceheads.	Area.
			Acres.
Barytes	1	...	10
Building Sites	1	...	3
Clay	1	...	63
Coal	5	...	742
Gold	45	...	827
Minerals	5	...	437
Mining Easements	6	...	90
Shell Lime	1	...	5
Phosphate Rock	1	...	10
Silver-Lead	4	...	180
Stone	5	...	151
Tin	62	...	2791
Water-rights and Dam Sites	67	652	499
Licences to Search for Coal and Oil	1	...	470
Total	205	652	6368

RETURN showing the Total Number of Leases and Licences in Force on the 31*st December,* 1933.

Mineral.	Number.	Number of Sluiceheads.	Area.
			Acres.
Asbestos	1	...	161
Barytes	1	...	10
Bismuth	1	...	40
Coal	23	...	5460
Clay	3	...	90
Dolomite	1	...	129
Granite	2	...	41
Gold	128	...	3879
Iron	1	...	5
Limestone	4	...	240
Molybdenum	1	...	80
Minerals	62	...	6642
Marble	1	...	10
Osmiridium	4	...	70
Silica	1	...	40
Silver	4	...	287
Stone	2	...	44
Shell Lime	1	...	5
Shale	4	...	1605
Tin	249	...	9270
Mining Easements	96	...	594
Licence to Search	2	...	790
Water Licences	400	1650	1905
Total	992	1650	31,397

RETURN showing the Mining Companies Registered during the Year ending 31*st December,* 1933.

Number of Companies.	Capital.
5	£31,705

In addition to the above, 3 Agents for Foreign Companies and 2 Syndicates under Part Va. of the Mining Companies Amendment Act, 4 Geo. V. No. 44, were registered.

RETURN showing the Average Number of Miners Employed during the Year ending 31st December, 1933.

Division.	Number.
Northern and Southern	1207
North-Eastern	446
Eastern	556
North-Western	568
Western	1733
	4510

RETURN showing the Total Amount of Rents, Fees, &c., Received by the Mines Department during the Year ended 31st December, 1933.

Head of Revenue.	Amount.		
	£	s.	d.
Rent of Auriferous and Mineral Lands	7119	9	9
Fees, Auriferous and Mineral Lands	946	3	5
Survey Fees	1365	7	1
Fees under the Explosives and Inflammable Liquids Act	1393	13	7
Total	£10,824	13	10

RETURN showing the Average Number of Persons Engaged in Mining during the Years 1880 to 1933.

Year.	Number.	Year.	Number.
1880	1653	1907	7516
1881	3156	1908	6466
1882	4098	1909	6054
1883	3818	1910	5770
1884	2972	1911	5247
1885	2783	1912	5566
1886	2681	1913	6107
1887	3361	1914	4741
1888	2989	1915	3908
1889	3141	1916	3864
1890	2868	1917	4050
1891	3219	1918	4278
1892	3295	1919	4413
1893	3403	1920	5364
1894	3433	1921	4011
1895	4062	1922	3835
1896	4350	1923	4785
1897	4510	1924	5264
1898	6052	1925	5110
1899	6622	1926	5309
1900	7023	1927	5044
1901	6923	1928	5170
1902	5934	1929	4986
1903	6017	1930	4606
1904	6194	1931	4391
1905	6581	1932	4605
1906	7005	1933	4510

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 1933, inclusive.

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

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, 1921 to 1933 inclusive.

Nature of Lease.	In force on 31st Dec., 1921.		In force on 31st Dec., 1922.		In force on 31st Dec., 1923.		In force on 31st Dec., 1924.		In force on 31st Dec., 1925.		In force on 31st Dec., 1926.		In force on 31st Dec., 1927.		In force on 31st Dec., 1928.		In force on 31st Dec., 1929.		In force on 31st Dec., 1930.		In force on 31st Dec., 1931.		In force on 31st Dec., 1932.		In force on 31st Dec., 1933.	
	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.
		Acres.		Acres.		Acres.		Acres.		Acres.		Acres.		Acres.		Acres.		Acres.		Acres.		Acres.		Acres.		Acres.
For Minerals, Silver, Tin, &c.	901	31,719	716	26,459	614	21,880	460	23,308	532	23,588	541	22,129	642	25,604	728	28,103	652	27,052	418	18,321	379	17,101	284	13,320	326	16,734
For Coal, Slate, Shale, &c.	66	15,430	73	16,809	66	16,053	27	8901	35	9922	49	13,136	39	11,077	52	15,407	36	11,022	32	9960	25	7223	32	6104	39	7495
For Gold	92	1894	127	2424	108	1687	91	1829	70	1340	42	870	38	749	40	830	36	746	40	830	57	999	77	1987	128	3879
Dredging Claims	29	413	36	399	33	369	20	289	20	195	42	363	41	502	52	626	60	756	30	353	—	—	—	—	—	—
Mining Easements	97	621	87	607	81	606	77	592	77	570	68	494	77	484	77	475	55	409	73	504	77	434	48	316	79	475
Machinery Sites	34	152	31	123	30	124	26	115	27	112	25	150	21	110	29	169	25	171	18	117	20	209	18	120	17	119
Licences to search for Coal or Oil	51	117,031	73	137,692	36	34,761	21	38,528	19	14,130	8	10,669	4	5090	7	7200	9	10,844	3	1080	1	800	1	320	2	790
Water-rights, Mineral and Gold	543	2247 & 2060 sluice-heads	493	3002 & 1814 sluice-heads	435	2147 & 1612 sluice-heads	338	1990 & 1520 sluice-heads	371	2167 & 1604 sluice-heads	360	2190 & 1591 sluice-heads	394	2246 & 1748 sluice-heads	371	1552 & 1581 sluice-heads	486	2359 & 2053 sluice-heads	364	2095 & 1558 sluice-heads	388	2078 & 1546 sluice-heads	391	2448 & 1473 sluice-heads	400	1905 & 1650 sluice-heads

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

	Average for **1921.**	Average for **1922.**	Average for **1923.**	Average for **1924.**	Average for **1925.**	Average for **1926.**	Average for **1927.**	Average for **1928.**	Average for **1929.**	Average for **1930.**	Average for **1931.**	Average for **1932.**	Average for **1933.**
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Copper--Standard, spot: per ton	69 8 8	62 3 6	66 7 4	63 4 3	61 9 7	58 0 8	59 5 8	72 2 10	75 19 7	54 3 7	38 7 9	31 14 7	32 11 4
Lead—Soft Foreign: per ton	22 14 6	23 14 10	25 19 4	33 13 11	35 17 3	31 2 2	21 9 6	22 13 6	23 4 11	18 3 1	13 0 7	12 0 9	11 16 1
Spelter: per ton	26 4 1	29 14 2	32 18 4	33 12 0	36 5 0	34 2 8	26 6 1	25 14 9	24 15 1	16 16 9	12 9 0	13 13 10	15 14 11
Tin—Standard, spot: per ton	165 8 2	159 10 9	191 7 5	248 17 4	261 1 8	291 3 0	254 17 7	216 6 6	263 18 10	141 19 1	118 9 1	135 18 10	194 13 4
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Silver--Standard, spot: per oz.	3 0·875	2 10·4	2 8·37	2 9·97	2 8	2 4·2	2 2·38	2 2·15	2 0·57	1 5·66	1 2·593	1 5·842	1 6·144
	£ s. d.	£ s. d.	£ s. d.			£ s. d.	£ s. d.	£ s. d	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Osmiridium: per oz	24 10 6	28 6 7	27 10 4	...	...	11 13 4	21 16 5	25 9 0	22 18 1	17 0 9	14 7 9	11 11 0	8 16 9
Wolfram: per ton	65 7 6	70 0 0	65 0 0	...	...	70 0 0	61 10 0	104 5 0	144 5 0	105 0 0	64 0 0	62 16 0	81 2 6
Nickel: per ton	...	...	...	...	...	...	...	...	171 0 0	170 0 0	183 15 0	234 7 6	235 0 0

MINES DRAFTING BRANCH.

The number of working plans in use and which are all kept up to date is 206, as compared with 202 in 1932.

Instructions issued to surveyors	295
Diagrams received from surveyors	192
Diagrams drawn on leases	462
Consolidated and other diagrams drawn	30
Lithographs entered to date	90
Various tracings prepared	16
Tracings for Launceston	256
Manuscripts entered to date	13
New manuscript plans drawn	4
Geological colour work (seven printings)	1
Underground surveys examined	70

MINING MANAGER'S EXAMINATION.

One candidate applied to be examined, and an examination was held at Launceston. The candidate did not succeed in obtaining sufficient marks to qualify for a certificate.

One certificate was granted under Regulation 13.

STAFF CHANGES.

The following appointments have been made:—

James Balfour Scott, from Assistant-Secretary to Secretary for Mines (*vice* W. A. Pretyman, retired).

Archibald Reginald Parkes, Registrar of Mines, and Draftsman in charge of Lands and Mines Offices, Launceston (*vice* J. L. Hallam, deceased).

Walter St. Clair Manson, Assistant Chemist and Assayer, to Chemist and Assayer, *vice* L. H. Bath, deceased).

DEATHS DURING THE YEAR.

It is with regret that I have to record the deaths of two valued officers of the Department during the year.

Mr. John Leonard Hallam, Registrar of Mines, and Draftsman in charge of the Lands and Mines Office, Launceston, after a brief illness, died on 22nd April, at the age of 33 years. Mr. Hallam had been a member of the Civil Service for 16 years.

Mr. Leo Hambly Bath, Chemist and Assayer in charge of the Department's Laboratory, Launceston, died on the 29th September, aged 40 years. Mr. Bath was a returned soldier, having served with the A.I.F. in France. He joined the Department in 1922, succeeding to the position of Head Chemist in 1929.

In conclusion, I desire to record my appreciation of the valued assistance rendered by all officers of the Department, including the Mining Drafting Branch of the Department of Lands and Surveys, and the Warden and Registrars for the various districts.

I have the honour to be,

Sir,

Your obedient servant,

J. B. SCOTT,
Secretary for Mines.

APPENDIX I.

REPORT OF GOVERNMENT GEOLOGIST FOR YEAR 1933.

The Government Geologist (Mr. P. B. NYE, M.Sc., B.M.E.) reports:—

Field Work.

The principal field surveys made were those of the goldfields of the State, being a continuance of the programme initiated in 1932 for examinations of all the goldfields. The goldfields surveyed during the year included Lefroy and Alberton. Numerous other surveys and short examinations were made of districts, mines, mineral deposits, &c.

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

(1) Mr. K. Brodribb's estate, Frodsley, by K. J. Finucane.
(2) St. Helens District, by P. B. Nye.
(3) Country south of the West Coast-road, by Messrs. K. J. Finucane and F. Blake.
(4) Alberton (North Mount Victoria) Goldfield, by Messrs. P. B. Nye and F. Blake.
(5) Red granite at Cole Bay, by Messrs. P. B. Nye and F. Blake.
(6) Tucker's gold prospect near Fingal, by Messrs. P. B. Nye and F. Blake.
(7) Aberfoyle Mine, by Messrs. P. B. Nye and F. Blake.
(8) Lefroy Goldfield, by E. Broadhurst.
(9) Back Creek Goldfield, by E. Broadhurst.
(10) Beach sands at Piper River, by E. Broadhurst.
(11) Royal Gordon tin deposits, Branxholm, by P. B. Nye.
(12) Vincent's Gold Prospect, Forester, by P. B. Nye.
(13) Mercury Mine, Alberton, by P. B. Nye.
(14) Catamaran Coal Mine, by P. B. Nye.
(15) Strathblane Coal Mine, by P. B. Nye.
(16) Beaconsfield alluvial gold deposits and Anderson's Creek water-race, by Messrs. P. B. Nye and F. Blake.
(17) Gold prospect, north end Blue Tier, by Messrs. P. B. Nye and F. Blake.
(18) Tin deposits near Mount Ramsay, by Q. J. Henderson.

Reports.

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

(1) Gas Occurrences in the Golden Valley District, by P. B. Nye.
(2) Country in the Vicinity of the Rio Tinto and Specimen Reef Mines, with Special Reference to Alluvial Gold, by Messrs. K. J. Finucane and F. Blake.
(3) Experimental Aerial Geological Survey of Tasmania, by P. B. Nye.
(4) Auriferous Deposits in Tasmania, by P. B. Nye.
(5) The Gladstone Goldfield, by P. B. Nye.
(6) Notes on the Magnesium Industry, by P. B. Nye.
(7) The Copper Resources of Tasmania, by P. B. Nye.
(8) Possibilities of Developing the Five-Mile Copper Nickel Field, by Messrs. J. B. Scott and P. B. Nye.
(9) Stannite in Tasmania, by P. B. Nye.
(10) K. Brodribb's Frodsley Estate, by K. J. Finucane.
(11) St. Helens District, by P. B. Nye.
(12) Upper Wilson and Mount Ramsay Districts, by Messrs. K. J. Finucane and F. Blake.
(13) The Boring Campaign on the Arba Lead, Branxholm.
(14) New River Goldfield, by F. Blake.
(15) The Lake River Goldfield, by Messrs. P. B. Nye and F. Blake.
(16) Mining Operations carried on by Mr. Tucker near Fingal, by P. B. Nye.
(17) The Mount Paris Mine, by P. B. Nye.
(18) The Copper-Nickel Deposits of the Five-Mile District, Zeehan, by P. B. Nye.
(19) The Country between the West Coast-road and the Jane River, by Messrs. K. J. Finucane and F. Blake.
(20) Black Sands between the Mouths of the Piper and Little Piper Rivers, by E. Broadhurst.
(21) Dredging near Lynchford, by P. B. Nye.
(22) T. Vincent's Mine, Forester, by P. B. Nye.
(23) Royal Gordon Workings, vicinity of Mount George, Branxholm, by P. B. Nye.
(24) The Mercury Mine, by P. B. Nye.
(25) The Ringarooma United Mine, by P. B. Nye.
(26) Manganese Deposit in Tasmania, by P. B. Nye.
(27) Red Granite at Cole Bay, by P. B. Nye.
(28) Quarterly Review of the Gold-mining Industry of Tasmania for Quarter ending 30th June, by P. B. Nye.
(29) Drilling Operations at the Latrobe Shale Field.
(30) Mathinna Goldfield, by K. J. Kinucane.

Publications.

The report of the Tasmanian Shale Oil Inquiry Committee was issued during the year as Mineral Resources No. 8, Vol. II.

The report of the Smithton District and the map of the Smithton south-east quarter-sheet were submitted for publication, and will be issued during the present year as Bulletin No. 41, together with the maps of the north-east and south-east quarter-sheets.

The following reports have been completed in bulletin form, and await publication, but some drafting work on the plans has yet to be completed:—

The Geology and Ore-deposits of the Rosebery District by K. J. Finucane, M.Sc.
The Mathinna and Tower Hill Goldfields, by K. J. Finucane, M.Sc.
The Lefroy and Back Creek Goldfields, by E. Broadhurst, M.Sc.

Magnesium Industry.

The systematic survey of the Smithton District in 1929 and 1930 revealed the presence of enormous deposits of dolomite, some of which were of high grade.

A local syndicate became interested in the development of these deposits and the establishment of the magnesium industry, and carried out an extensive investigation regarding markets, processes, &c. The Department also assisted further by sampling, assaying, &c.

The syndicate made application for the Hon. the Minister for Mines to request the services of the C.S. & I.R. to assist in the establishment of the industry, and a committee consisting of Sir Herbert Gepp, Consultant on Development to the Commonwealth Government, Dr. F. L. Stillwell, Mineragraphist of the C.S. & I.R., and myself was appointed. All preliminary information was collated by myself, and the committee met during April, representatives of the syndicate also being called into conference. The committee issued a joint report, with recommendations as to the development of the industry, which are now being followed by the syndicate with the assistance of E. E. Kurth, of the University of Tasmania.

Gold-Mining Industry and the Copper-Nickel Deposits.

The above committee also investigated these two matters, and submitted joint reports, with recommendations, thereon.

Drilling Campaign at Latrobe.

The Commonwealth Government made available a sum of £1000 for testing the oil shale deposits, and the drilling was carried out in accordance with the report and recommendations made in 1932. The site of each hole was carefully considered, and slight alterations made to the 1932 report in the light of the information being obtained. Ten holes were bored, with a total depth of approximately 2400 feet, and Tasmanite shale cut in every hole. These holes proved a reserve of at least 1,000,000 tons.

Staff.

Mr. K. J. Finucane, Field Geologist, was granted 12 months' leave of absence as from 26th June in order to gain experience in aerial surveys, &c., in Western Australia. Mr. E. Broadhurst was appointed temporarily in his place.

Mr. Q. J. Henderson, who formerly occupied the position of Cadet Geologist, was, after an absence of 12 months, reappointed to his former position. He was later appointed Assistant Geologist and Draftsman in place of Mr. F. Blake, who was promoted to his former position of Field Geologist.

Interpretation of the Geological Record of the State.

No modifications or additions are necessary as the result of the geological surveys during 1933.

Routine and Other Duties.

During the year the usual routine duties of interviewing visitors, answering correspondence, determining rocks and minerals, &c., were carried out.

Other duties included—

(1) Weighing and certifying to parcels of osmiridium being shipped overseas.
(2) Attentions and additions to the departmental collections.
(3) Attentions and additions to the departmental library.
(4) Preparation of collections for schools, &c.
(5) Preparation of rock sections.
(6) Attendance at meetings of Mine Managers' Examination Board and setting and correcting of examination papers.
(7) Reports and recommendations in connection with aid to mining, &c.

Conclusion.

In 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 performed.

P. B. NYE, Government Geologist.

Mines Department, Hobart, 21st June, 1934.

Appendix II.

REPORT OF THE CHEMIST AND ASSAYER.

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

I have the honour to submit my annual report for the year ending 31st December, 1933.

The report covers a period of nine months previous to my appointment to the position of Government Chemist and Assayer.

My predecessor (Mr. L. H. Bath) died on the 29th of September, having occupied the positions of Chemist and Chief Chemist and Assayer for a period of 11½ years.

During the year the work consisted mainly of analyses of ores, rocks, and minerals, and metallurgical tests. The total number of determinations made for the public and Department amounted to 5100.

Assays have been made for gold, silver, tin, lead, aluminium, antimony, arsenic, beryllium, barium, calcium, chlorine, chromium, cobalt, fluorine, iridium, iron, magnesium, manganese, molybdenum, nickel, osmium, osmiridium, phosphorus, platinum, potassium, selenium, sodium, sulphur, titanium, tungsten, zinc, and zirconium; also analyses of clays, cement, rocks, minerals, alloys, shale, coal, water, and paints.

Boring.

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

General.

A good deal of routine work was attended to and information supplied to inquirers. Owing to the depleted staff a very considerable amount of overtime was performed during the last three months of the year.

I wish to place on record my appreciation of the services rendered by Mr. C. J. Penman.

Appendix III.

REPORT OF THE CHIEF INSPECTOR OF MINES.

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

I beg to submit my annual report for the year 1933 in connection with the administration of the Mines and Works Regulation Act, 1915.

Tables are attached showing—

(1) The number of persons killed and injured in or about mines, works, and quarries in Tasmania.
(2) The rate per 1000 persons killed and injured in the different divisions.
(3) The average price of metals from the years 1919 to 1933.

The average number of persons employed for the year was 4510, being a decrease of 95 compared with the year 1932.

Accidents.

The total number of accidents reported during the year was 77, being an increase of six compared with the previous year. The 77 accidents caused injury to 78 persons, being an increase of seven compared with the year 1932. There was a reduction of one accident in the Northern and Southern Division, and an increase of one accident in the Eastern Division, the same number of accidents in the North-Eastern Division, a reduction of four in the North-Western Division, and an increase of seven in the Western Division—compared with the year 1932.

The fatal accidents were six, causing the death of seven persons, being an increase of three on the previous year. The non-fatal accidents were 71, being an increase of four compared with last year.

The rate per 1000 employed killed and injured was 17·295, compared with 15·418 for the previous year. The rate per 1000 persons employed who were fatally injured was 1·552, the rate for the year 1932 being 0·868.

The rate per 1000 persons employed who received injuries necessitating absence from work for more than 14 days was 15·742, compared with 14·549 for the previous year.

The seven fatal accidents were caused as follows:—

(1) In a stope which was partly on square timber and partly open a very large settlement of ground came from the roof of the stope, crushing the timber, and causing the death of two miners who were employed in the stope.

(2) One of the owners of a sluicing claim was caught by a fall from the face and drowned in the race, the other partner having left the workings temporarily.

(3) A miner was preparing to pop a large stone in the reef of a stope. While bringing the hoses under the stone it fell, causing fatal injuries.

(4) A mill-hand was employed shovelling ore in the crushed-ore bin. A rush of material occurred, carrying the man with it. He was suffocated before he could be extricated.

(5) A falling roof in a colliery, mining a small seam, struck a miner on the head, causing injuries which proved fatal.

(6) A carpenter employed on construction work fell from a ladder a distance of 15 feet, and died from injuries received.

Of the 71 serious accidents, 53 occurred underground and 18 on the surface. Nine occurred at works and quarries, four occurred at coal mines, two at sluicing claims, and the remaining 56 at metal mines. The injuries in 20 cases were such as to cause fracture; the remaining 51 cases caused injury which necessitated absence from work for more than 14 days.

Prosecutions.

There were two prosecutions for failure to comply with the provisions of the Act. In both cases convictions were obtained and fines inflicted.

Operations.

The Electrolytic Zinc Company operated continuously during the year, and produced 53,956 tons of zinc, valued at £1,100,950, and 159·5148 tons of cadmium, valued at £22,330, from ore mined in other States, and employed an average of 739 men. The company did not treat any ore from Tasmanian mines.

The Catamaran operated fairly continuously during the year (the output being 6802 tons of coal, valued at £5690), and employed, on an average, 46 men.

Prospecting for coal has been carried out at Strathblane and Sandfly, and small quantities sold.

The Australian Commonwealth Carbide Company operated continuously during the year, producing 4553 tons of carbide, valued at £91,077, and employed, on an average, 77 men.

Adamsfield.—Owing to the low price of metal the number of men employed shows a very large reduction. The lode claims have carried out very little work owing to the unsatisfactory market and difficulty in disposing of the metal.

Quarries.—The bluestone quarries have worked continuously, but the output has been restricted. There has been a slight improvement in the output from brick-works and quarries.

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

TABLE showing Rate per Thousand Killed and Injured in different Divisions for the Year 1933.

Division.	Average Number of Men Employed.	Number of Accidents.	Number of Persons		Total Numb Killed & Injured.	Average per 1000 Killed and Injured.	Average per 1000	
			Killed.	Injured.			Killed.	Injured.
Northern and Southern	1207	1	...	1	1	0·828		0·828
North-Eastern	446	4	1	3	4	6·726	2·	6·726
Eastern	556	5	...	5	5	8·992	...	8·992
North-Western	568	11	1	10	11	19·336	1·760	17·605
Western	1733	56	5	52	57	32·891	2·885	29·328
Total	4510	77	7	71	78	17·295	1·552	15·742

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	1507	53	5	49	54	35·818	3·317	32·501
Zeehan, &c.	226	3	...	3	3	13·274	...	13·274
Total	1733	56	5	52	57	32·891	2·885	29·328

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

* Mount Lyell disaster.

APPENDIX IV.

REPORT OF THE CHIEF INSPECTOR OF EXPLOSIVES.

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

I have the honour to submit my report on the administration of the Explosives Act, 1916, and the Inflammable Liquids Act, 1929, for the year 1933.

The imports of explosives were considerably larger than for the previous year, being:—

	lb.
Monobel	11,750
Gelignite	507,800
Ligdyn	47,750
Blasting gelatine	1,250
Gelatine dynamite	—
Powder	24,295
Detonators	491,900

The quality of explosives imported was very satisfactory. Complaints were received in connection with faulty detonators. The complaint was closely investigated, but there was no evidence to show that the trouble was in any way due to a defect in the detonators.

There were several cases of premature explosion. In all cases a close investigation was conducted into the cause without locating a satisfactory solution. The fuse was carefully tested and examined without finding any defect. This class of accident continues to occur at intervals, and every endeavour is being made to determine the cause.

Accidents.

Four accidents occurred during the year from explosion:

(1) In two cases firing sand blasts caused serious injury. In one case sand blasts were being fired in an open-cut. In the other case sand blasts were being fired in a stope. In each case a charge exploded prematurely. The cause of the occurrence could not be determined.

(2) A miner was firing 14 holes in a winze. One hole exploded prematurely, causing injury to the eyes. As in the previous case, no cause for the accident could be ascertained.

(3) An alluvial miner was preparing to fire a small charge of gelignite in cemented drifts. The practice usually adopted is to attach the charge to a rush-stick with a length of about 12 inches of fuse. The fuse is then ignited and the charge inserted into the hole.

In this case the man was unaware at first that the fuse was burning; discovering that it was, he endeavoured to hold the charge from him, when an explosion occurred, causing him serious injury. This accident is attributed to using such a short length of fuse.

There were no fires or explosions caused by inflammable liquid.

Prosecutions.

One person was proceeded against for storing inflammable liquid without a licence. A conviction was recorded, with 6s. 6d. costs.

Revenue.

The following licences were issued, and fees paid in connection with them, for the year 1933:—

Explosives Act, 1916 (1st January to 31st December, 1933).

	No.	£	s.	d.
Magazine licences	55	55	0	0
Permits to sell explosives	281	69	15	0
Permits to import explosives	13	26	0	0
Permits to convey explosives	53	13	2	6
Permits to sell fireworks only	86	10	14	0
		£174	11	6

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

	No.	£	s.	d.
Licences to store	473	740	5	0
Registration of premises	266	65	7	6
Permits to unload ships	53	278	5	0
Permits to import	5	1	5	0
Increased quantities	23	11	10	0
Transfer fees	4	1	0	0
Amendment to licences	30	7	10	0
Inspection of ships	8	42	0	0
		£1,147	2	6
Magazine rents		54	19	6
		£1,202	2	0

APPENDIX V.

REPORTS OF INSPECTORS OF MINES.

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

I have the honour to submit my annual report for the year 1933 in connection with the work of inspection and administration of the various Acts delegated to this office, and a *resumé* in connection with the mines, works, and quarries in this district.

The average number of men engaged was 708.

There were 13 accidents of a serious nature, one of which ended fatally. A young man was pulling out some coal from a working face in narrow workings to fill a truck (the seam being only 16 inches thick), when a piece of the roof fell, causing fatal injury. Other accidents were only of a trivial nature, but caused each of the persons concerned to lose 14 working days, which constitutes a "serious accident" under the Act. Others were of a more serious nature, but all those involved had returned to work before the close of the year. Eight accidents occurred underground, and five on the surface.

Settlements of Ground.—Two slight settlements of ground occurred in one coal mine, but did not interfere with the output. The roof did not follow down, as is usual, in the modified longwall method adopted in this district, and let go to a fault, crushing a few lids along the gateway, which were soon replaced, and work proceeded as usual. No other settlements were known to me, and no others were reported, which interfered with the usual workings of the mines.

Ventilation.—Conditions at one mine are still far from satisfactory, but owing to the financial position it is a difficult matter to see how it is to be overcome. At other places, as required, conditions have been improved.

Explosives.—Consignments from the mainland have received attention regarding handling at ports, and in being forwarded to their destination as required.

Workers' (Occupational Diseases) Relief Fund Act.—Only one man made application to be examined for compensation. This was done, and he is now receiving relief.

New employees at one works were examined by the medical officer, in compliance with their requests.

Machinery.—Except where absolutely necessary to interfere for safety reasons, any defects noticed have been referred to the Chief Inspector of Machinery for his attention.

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

In addition to the usual inspection work delegated to this office, a good deal of work in connection with the Aid to Mining Act has been carried out. The year has been an exceptionally busy one.

Operation and Production.

Tin.

The improved price of tin has helped considerably, and has caused greater activity, particularly at Waratah. It has encouraged several parties of tributers at the Mount Bischoff Tin Mine to put in their own crushing and concentrating plants, and do a considerable amount of prospecting and developmental work on the company's leases.

At this mine the alluvial ground at the North Valley has been let to the Walsh Bros., of East Coast, who have done a good deal of alteration in one way and another—among other things, putting in their own elevating plant.

An average of 173 men have been kept at work, most of these being tributers. Men are employed by the company in connection with the running of its concentrating mill, also in connection with the plant for power and lighting purposes. No work of a mining nature is being carried on by the company.

A total of 14,693 tons were milled for 329·17 tons of tin oxide, containing 226·27 tons of metallic tin; 28,450 cubic yards of tailings and alluvial ground were treated, for 47·05 tons of tin oxide, containing 32·4157 tons of tin. Net value of output, £48,339.

Several parties have taken up portions of the old Mount Bischoff Extended Tin Mine leases. Two men have been cleaning up around the calcining plant and treating some alluvial ground underneath it, making good wages. A start has been made by others to clean and pick up the old levels, and are prospecting among the various old pillars and blocks left by the old company. Prospects in some quarters are encouraging.

Of late favourable reports have reached this office regarding Balfour, and last quarter there was a decided improvement in the output. The work being carried out is principally on the surface.

Two parties are engaged at Mount Ramsay, and several men have been obtaining small parcels of tin ore on the track between Parson's Hood and the Corinna-Waratah road.

On the Montana Tin Mine, at Renison Bell, tributers have been engaged following rich pockets of ore in a big formation, driving, rising, and sinking, and have done very well for themselves.

Other men on the Renison Bell field have been working alluvial ground, with varying results.

At the Lappa Tin Mine, Sea Elephant, King Island, some further prospecting work has been carried out, and it is reported to this office that the lode has been proved for a length of a mile, and that prospecting work is to be continued, as an option has been granted to a Melbourne firm.

Silver-Lead-Zinc.

Late in the year the Electrolytic Zinc Company of Aust. Ltd. started some developmental work on the Rosebery-Hercules mines. At the Rosebery Mine the No. 8 level is being extended in a northerly direction. The lode is very much disturbed, being faulted every few feet just here. A very promising development was met with in driving the ore transfer drive on No. 5 level at the Hercules Mine. It is being extended towards the old Mount Read Mine. The ore is carrying fair values, up to 8 dwt. in gold, besides other minerals. The No. 6 level is also being pushed on to connect up with No. 5 level, and to intersect G lode at this level. The work being carried out will be of much benefit in future operations, when work is resumed on a large scale.

At the Farrell Mine (late North Mount Farrell Mine) the flotation plant has been kept actively at work, treating slime and tailing dumps principally. The new discovery made to the north of the old mine has been further opened up. The formation exposed on the surface north of the creek was intersected by a crosscut at 50-feet level and driven on for some 60 odd feet; for most of the distance it showed good values. A crosscut was driven into the hanging-wall and a winze sunk another 50 feet, cutting the formation again. Some good values were exposed, but did not disclose ore equal to that on the 50-feet level. A crosscut was then driven easterly, and two other bodies were intersected. These were principally of quartz and crushed slate. These bodies owe their existence, as previously pointed out by Mr. L. K. Ward (late Government Geologist), in Geological Survey Bulletin No. 3, 1908, to fracturing of the country prior to the distribution of the metal-bearing solutions, and do not always carry lead values. His remarks are worthy of note at this time.

From the top, the winze at the 50-feet level was holed through to the surface. Over this, the head frame has been placed and a small hoisting winch erected, and work resumed on the 100-feet level, as well as driving and stoping at the 50-feet level.

To the south of the creek a shaft was sunk to a depth of 60 feet on some good-looking ore, cut in surface trenching. The country in this locality is very much faulted, there being numerous cross-courses, but the prospects for the occurrence of metal are very encouraging.

A tramline is being laid to the concentrating mill at the old mine to provide a means of taking ore there for treatment. Some 30 tons of picked ore obtained here was shipped last quarter.

For the present the former mine workings have been abandoned.

The average number of men employed was 62. Ore containing 1589·58 tons of lead and 207,954 oz. of silver was depatched from the mine, valued at £23,830 net.

Magnet Prospecting Syndicate Mine, Magnet.—As stated in my last annual report, this mine is now being operated by tributers. Good work was being done by them, the output being gradually increased until a mishap occurred to one of the flood-gates used to dam water back at week-ends. One of these sprung a leak, flooding the electric pumps. This considerably retarded operations for some time.

A chamber was being cut on the No. 16 level, so that an auxiliary shaft could be sunk to test and work the ore deeper down, but owing to the financial position this had to be stopped for the time being. Operations in this direction were confined to the sinking of a winze on the ore-body itself. For the first 40 feet this carried some first-grade galena, up to 3 feet 6 inches wide, then a mixture of galena, blende, siderite, and quartz came in. Some very nice clean galena was showing at the bottom of the winze. A level was started at a depth of 50 feet.

Stoping was carried out over other levels in the mine, and some 10,950 tons of ore was treated for 1670 tons of concentrates, carrying 965·67 tons of lead and 142,752·6 oz. of silver, the market value being £22,639. The average number of men at work was 85.

These were the only two mines producing silver-lead ore in my district. A few men did some prospecting work to the north of Tullah. Formations were found, one of which looked encouraging where exposed in a deep trench; when sunk on, the presence of water discouraged further work thereon. When prices for lead improve increased activity should result in this locality.

Gold.

Some prospecting work has been carried out in different localities. The most encouraging was that by the Austral Malay Tin Mining Company at the Savage River and Middleton Creek area. Holes were bored to a depth of 96 to 108 feet in alluvial ground without reaching bottom.

The deposit contained sufficient values in gold and osmiridium to make the company consider it worth while to procure a power drill. It is expected that boring will soon be resumed.

At the Holdfast Gold Mine, Whyte River, the river was turned successfully by means of a tunnel. Hydraulic plant was erected, and several parts of the river-bed were tested, but values were disappointing, operations being suspended for the time being.

In subsequent prospecting operations an old river-bed was struck on higher ground. This is stated to carry a payable proportion of alluvial gold.

Twenty-eight oz. of gold and 3 oz. 8 dwt. of osmiridium were reported to this office for the quarter ending 31st December, 1933. The average number of men employed was four.

The Allan Bros., at Burnt Spur, on the Savage River, got on to a nice patch towards the end of the year, recovering one piece of 1 oz. 23 gr., and another of 13 dwt.

Other men have been winning a little gold along the banks of the river at various places.

Near the junction of the Hellyer and Arthur Rivers W. North and Sons obtained good wages for a while working alluvial ground.

Other than these, nothing of much value has been reported.

One hundred and sixty-nine ounces of fine gold were reported to have been sold for the term.

Coal.

Ten small pits have been at work, the larger proportion of the output being taken by the Goliath Portland Cement Company. The seams worked run from 16 to 24 inches in thickness. A total of 6462 tons was mined, and sold for £4536·7 at the pits. Owing to the irregularity of the working of the kiln at the cement works the men are not kept continuously employed.

The ash content of the coal is low, but sulphur is high. This, however, is not detrimental to its sale to the Cement Works.

Cement.

Work has been of an intermittent nature at the Goliath Portland Cement Works, but business is increasing. The product is of high-grade quality. A total of 36,121 tons was sold for the term.

Talc.

Only 8·75 tons was raised, and this quantity was produced at Gawler. It realised about £4 per ton. The demand seems to be very light.

Limestone.

The Broken Hill Pty. Ltd. increased its output considerably of late. For the first quarter it was 13,612 tons, 31 men being employed. During the last quarter 40,217 tons were shipped to the works at Newcastle, 54 men being employed; total shipped for term, 92,829 tons.

A total of 465·75 tons of industrial lime was produced at two other works.

Shale.

Work has been continued at the Tasmanite Shale Oil Mine. Drilling work carried out has revealed valuable data, proving the shale to be of good thickness and value, in some instances, under the diabase.

The mining of the shale was carried out by bord and pillar work.

M. Rayner put up four small retorts and the necessary distilling plant, and opened up a very promising deposit of shale some few miles out of Latrobe on private property, treating some 65 tons; this found a ready market, and resulted in the production of high-quality crude oil, for which a market is available.

Bismuth.

During the term an option was taken by a mainland firm over the Mount Stormont Mine at Moina. A shaft was sunk and a short crosscut driven, and some sinking was carried out to a shallow depth.

During the year 2785 lb. of bismuth concentrates was sold, which contained 25·48 oz. of gold, valued at £1015·43.

From the old Shepherd & Murphy Mine, 233 lb. of bismuth was sold, the value realised being £49 at the mine. No mining work was done during the year.

Barytes.

A sample of 5 tons, obtained at the surface, and valued at £15, was sent to the mainland from the Harford area.

Ilmenite.

Some 550 tons, consisting of picked crudes and separated sand, was sent to the mainland from the Titanium Products Pty. Ltd. lease at Naracoopa, King Island.

A magnetic separator was erected and put into service, but was found to be unsuitable. A bulk sample of the ilmenite sand was shipped to England to try out the suitability of the Laporte process to treat it.

Quarries.

Those brought under the provisions of the Mines and Works Regulation Act have been inspected as required when they were in operation. The dust nuisance is a problem in most of these places.

Inspector DOUGLAS WILSON (Western Division) reports:—

Men Employed.—The average number of men employed in the industry was 1570, a decrease of 26 from 1932.

Accidents.—The number of accidents necessitating absence for 14 days or more was 54, an increase of 10 on last year's figures. Underground accidents, all at the Mount Lyell Company's mines, numbered 41, in which 39 men were injured and three fatally injured.

Health and Sanitation.—Much has been done during the year to combat the dust trouble, both underground and on the surface. Dust doors similar to those installed on two levels at the Crown Lyell Mine at the end of 1932 have been installed on the remaining four levels, and are proving very efficient. Dust doors under the tumblers have been installed at No. 4 level, Lyell Comstock, and No. 9 level, North Lyell, and one is promised for No. 10 level. At the Royal Tharsis preparation is being made for dust doors to be installed at each level. This mine is only just emerging from the development stage to production, and conditions naturally are not yet ideal.

Reduction Works.—During the year a new 10′ x 7′ ball mill was installed, with a capacity of 500 tons per 24 hours, being part of the programme for increasing the mill tonnage as the grade of the ore decreases, due to the depletion of the North Lyell ore-body and the increased tonnages of lower-grade ore from the Crown, Tharsis, and Comstock mines.

The steady increase in tonnage treated is shown by the respective tonnages of ore broken during the four quarters of 1933:—

1st quarter	97,290 tons
2nd quarter	103,720 tons
3rd quarter	116,717 tons
4th quarter	125,721 tons

This gives a total of 443,448 tons for the year, or approximately 8700 tons per week average, while at the close of the year 10,000 tons per week had been reached.

In September production of pyritic concentrates as a by-product was commenced, and for the final quarter 1498 tons were shipped.

Quarries.—The Mount Lyell Company's quarry at Hall's Creek supplied 3795 tons of limestone for use in the reduction works.

The Crown quarry continued to supply all filling required in the Crown and North Lyell mines, and the Lyell Comstock quarry filling for that mine.

Explosives.—Supervision was given to the landing of explosives at Regatta Point and their transfer to the main magazine at Queenstown.

Inflammable Liquids.—Increased activity continues in the quantity of petrol consumed, due to increased traffic on the West Coast-road of both passengers and goods.

Workers' (Occupational Diseases) Relief Fund Act.—Records show that during the year "Free from Disease" certificates were forwarded to the Board for 236 men. Eight employees of the Mt. Lyell M. & R. Co. applied for examination, three of whom were certified as incapacitated and five as not incapacitated. Possibly other applications for examination, or appeals against the decision of the certifying medical officer, from men in the district, were lodged direct with the Secretary of the Board at Hobart.

General.—Mine residues are now being pumped into the stopes of No. 7 level, Royal Tharsis Mine, as filling, and it is the intention of the Mount Lyell Company to extend this system of filling to the remainder of the Tharsis stopes as necessity arises. The filling sets well, can be pumped to any point required, and has many advantages over mullock from the surface, the chief of which is that in the event of a stope or section of a stope becoming heavy, filling could be commenced in the matter of a few hours.

Aid to Mining.—Assistance by way of loans was granted to 10 claim-holders in the Zeehan, Heemskirk, and Dundas districts. Numerous other applications were received and reported upon.

Repairs effected to the bridges on the Zeehan-Granville track are of great assistance to men engaged on tin claims at North Heemskirk.

There were no new finds of any importance during the year.

By comparison, alluvial tin mining offers the best opportunities for prospectors, and several parties were making well over wages before the dry spell set in towards the end of the year.

Production—	1932.	1933.
Copper (tons)	10,996	10,739
Lead (tons)	184	89
Tin (tons)	9	12
Nickel (tons)	—	8
Pyritic concentrates	—	1,498
Gold (oz.)	4,929	5,531
Silver (oz.)	182,683	137,883

Mining Operations and Production.

Mining operations, other than those of the Mount Lyell Company, were on a very small scale, and consisted chiefly of fossicking for gold, tin, and silver-lead.

Gold.

In the Queenstown District the total gold production, other than that of the Mount Lyell Company, was 104·95 oz., this being won in small lots by 45 fossickers. With gold at £7 per oz., this only gives them 6s. 3d. per man per week. Few of these men work full time, but, on the other hand, men have been fossicking and have won no gold. It is impossible accurately to trace the origin of gold won in this manner, as a fossicker often covers a large area to win a few dwts., but it has come from Lynch Creek, Specimen Creek, Princess River, Yoland River, Diamond Creek, Pearl Creek, Conglomerate Creek, Lynda Creek, White Creek, Mount Owen Creek, and Hall's Creek.

In the Zeehan area only 1·33 oz. was won for the year by two men.

Tin.

W. J. Hodge, at the old Razorback Mine, Dundas, produced concentrates containing 4·98 tons of metallic tin. All battery dirt was won from open-cut operations, and only five of the 10 head of stamps were in commission. Five men were employed.

Cook Bros. & Payne have a hydraulic lift in the bed of the Tasman River, at North Heemskirk, and produced concentrates containing 1·41 tons of metallic tin. Two men were employed until midway through the year, when a third joined the party. Their plant only started operating in October.

A. Kemp has a hydraulic lift in the bed of St. Dizier Creek, North Heemskirk, and produced concentrates containing 1·07 tons of metallic tin. Two men were employed.

A. Fairfield owns a small five-head battery of 6-cwt. stamps, on Section 8865M, at South Heemskirk. He has opened up an old caved adit, and has produced concentrates containing 0·52 ton of metallic tin. Two men were employed.

J. S. Munro's Section, 8915M, at South Heemskirk, has been worked by tributers, by ground sluicing and boxing, for 0·28 ton of metallic tin. Two men were employed.

J. Geason, on Section 11,009M, South Heemskirk has sunk a shaft to a depth of 23 feet, getting some nice slugs of nearly pure cassiterite, some up to a pound or more in weight, and containing 0·51 ton of metallic tin. Two men were employed.

At South Heemskirk 12 other fossickers, working odd patches of alluvial ground by hand methods, have produced between them concentrates containing 1·04 tons of metallic tin.

E. Bennett, at Eureka, has, by ground-sluicing, won several lots of concentrates, which produced 0·71 ton of metallic tin.

J. McGurk and D. Dunkley have prospected an alluvial area about 1 mile west of the junction of the Heemskirk and Pieman Rivers, producing 0·11 ton of metallic tin. They have been granted assistance under the Aid to Mining Act to construct a dam and cut a race, which will enable them to ground-sluice a considerable area.

R. Smith, at North Heemskirk, from various small patches, has won about a ton of high-grade alluvial tin.

At North Heemskirk nine other fossickers, working odd patches of alluvial ground by hand methods, have produced between them concentrates containing 0·98 ton of metallic tin.

A. Brown has prospected an area of shallow alluvial ground, carrying tin with a little gold and osmiridium, near the junction of Crimson Creek and the Pieman River. He has been granted assistance to cut a race and construct a dam.

Silver-Lead.

J. Dunkley, at the Silver Beauty Mine, Comstock, carried out stoping and milling intermittently during the year, for the production of concentrates containing 3415 oz. of silver and 33·87 tons of lead. A prospecting drive was commenced on the 100-feet, or bottom, level, but at the end of the year had not progressed far enough to get under the ore-bodies, which were stoped from the adit. Four men were employed.

Bell Bros. have been working two tribute areas—one at North Zeehan, and one east and adjoining Section 9999M—and have produced concentrates containing 3590 oz. of silver and 29 tons of lead. On the North Zeehan area assistance was given to sink a shaft. At the end of the year this shaft had holed through to the tunnel at a depth of 52 feet from the surface. The ore is going underfoot in this tunnel, and further assistance has been granted to sink the shaft to a total depth of 100 feet. Three men were employed.

J. McDermott has continued to work his section, 10,645M, at Zeehan, producing concentrates containing 783 oz. of silver and 7·43 tons of lead. No fresh development occurred. Two men were employed.

J. Turner obtained several lots of galena, which contained 721 oz. of silver and 5·44 tons of lead from his section, 10,577M, at Zeehan. There were no fresh developments. Two men were employed.

J. J. Hill, on old Section 8950M, Swansea area, located an outcrop of galena in a watercourse, and, after costeaning, drove a tunnel for 100 feet, which failed to cut the lode. He then put in another tunnel further north and at a higher level, cutting the lode at 60 feet. He then drove north on the lode for 42 feet, exposing a 5-inch seam of fairly clean galena. However, at both ends of the drive the seam is pinching. From this drive he obtained concentrates containing 282 oz. of silver and 3 tons of lead. Assistance was granted Hill to continue his lower tunnel, and this was extended to 142 feet, cutting at about 130 feet a small seam, which might or might not be the lode exposed in the upper tunnel. Two men were employed.

In the Zeehan area four men, fossicking and hand-jigging old dumps, produced concentrates containing 1295 oz. of silver and 10·25 tons of lead.

A. Smythe, on his prospecting claim at North Zeehan, has, with the assistance of Government aid, at a depth of 43 feet, driven south-west for 69 feet. The face shows a seam of galena about 2½ inches wide. Three men were employed.

Fahl Ore.

J. Griffiths, from his lease, 10,984M, Dundas, despatched to Mount Lyell 38 tons of ore, containing 2294 oz. of silver and 3·92 tons of copper. He then disposed of his claim to C. Smith, who sent one parcel of 8 tons of ore to Mount Lyell, which contained 292 oz. of silver and 0·62 ton of copper. Two men were employed.

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

The average number of persons engaged in mining and metallurgical operations was 1117, as against 1089 for the previous year, the increase being a reflex of improved productive activities in tin-mining.

Endeavours were made to devote the usual attention to the production and maintenance of safe operating conditions at the metalliferous mines, collieries, and quarries. The incidences of other duties interrupted the frequency of inspections of the principal mines; it was therefore impossible to visit smaller mines in outlying parts of the inspection division. In addition to prescribing measures for a correction of defects in the lesser details of mining practices, it was necessary to interrupt shaft operations at one mine until equitable machinery arrangements had been provided; in another instance, to rigidly control operations at the extensive face in alluvial workings; also to countermand the systems of hydraulicking being applied at several of the alluvial mines and open-cuttings on stanniferous formations; and to frequently require effectual attention to race-channels and surface

workings, as well as to affected ground in underground workings—all of which matters continued to emphasise the value of intense inspection.

Matters pertaining to health and sanitation were given due attention. There was no pronounced prevalence of dust in the metalliferous mines. Material results did not accrue from endeavours made to obtain additional repression of dust at the crusher station of one quarry. Flame-extinction tests were conducted as occasion demanded, and usefully served the purpose of obtaining a correction of isolated instances of deficient air. The thermometrical requirements of the Mines and Works Regulation Act were not exceeded, and controlled blasting or improved air circulations were sought to counter pernicious conditions of smoke and fumes accruing from the use of explosives. Difficulties were experienced in securing a satisfactory suppression of dust liberated by a dry process at a mineral-separating plant, but it is expected that the nuisance will be eliminated ultimately.

Endeavours were made to obtain a reasonable observance of the Explosives Act and of the provisions of the Mines and Works Regulation Act relating to explosives. Irregularities in regard to handling and storage were dealt with as occasion demanded.

A gradual improvement is being obtained in connection with the appointments for rendering first-aid at the principal mines, and, although arrangements are below modern standards, it is expected that such will meet the requirements of operations in the near future.

Although considerable attention was devoted to an enforcement of the provisions of the Inflammable Liquids Act, the full duties of administration again commanded more service than could be allotted thereto.

Statistical returns of mineral production and men employed in mining operations were compiled for each quarterly period. Legal action was taken against the manager of one mine and the owners of a second mine for neglect to furnish returns. Fines were imposed, and the defendants were ordered to pay the costs of the proceedings.

In addition to the duties ordinarily performed under the abovementioned Acts, special examinations were made of several mining properties, and economic reports were prepared for the purposes of the Aid to Mining Act; and special reports were furnished on the condition of, and possible damage to, private property from proposed mining operations, deposition of tailings from mining operations and the reservation of a tailing area in one locality, reservation of a township area at Aberfoyle, proclamation of sludge-channel, and the condition and sale of second-hand machinery in various areas.

Mining Operations and Production.

Coal.

Although anticipated factors caused a decline in the average complement of men at the collieries, productive activities were not materially affected, the output of coal being 102,970·5 tons, valued at £75,401·125, as against 103,991 tons, valued at £80,597, for the previous year.

The Cornwall Company marketed 52,276 tons, valued at £39,192, and operations gave employment to an average number of 86 men. The seam maintained its usual width and quality, and, despite intense roof troubles, the leading places were regularly advanced, and the productive capacity of the mine continued to be greater than the available trade.

Exploratory places were systematically driven on a lower seam of coal to ultimately determine the economic advantages to be derived from the establishment of productive operations on this seam.

The value, at the mine-bins, of 31,065 tons of coal produced at the Mount Nicholas Colliery was £20,748. The incursion of a major fault restricted the advancement of leading places in the western area, and the faulting series continued to impose troubled conditions in the eastern area. Despite these disabilities and a reduction in the complement of men, the productive capacity of the mine was equal to a slight trade improvement, and the total output was 2873 tons in excess of that for the previous year. Operations gave employment to 77 men.

The Jubilee Company employed 47 men, and produced 15,571 tons of coal, valued at £13,374. The output was 881 tons less than that for the previous year. The usual seam features prevailed, but the rising places in the eastern section reached the major upthrow of the Jubilee seam. This development resulted in an attack upon the advanced pillars and an opening up of the seam from No. 2 tunnel, in the western area, to maintain the output on the normal operating basis and to compensate the future productive capacity of the colliery.

Operations were not continuous at the Fingal Coal Mine, but the productive places were regularly advanced, and the output was 1046 tons, valued at £523.

Troubled seam conditions retarded operations at the Stanhope Colliery, on the Mount Christie Coalfield, and was the only factor which operated against a greater output than the 2200·5 tons, valued at £165·125, recorded during the year.

Modified longwalling was continued at the York Plains Colliery, and 812 tons of coal, valued at £917, were produced for the fuel requirements of hop-kilns.

Tin.

The total output of metallic tin was 663·59 tons, as against 379·88 tons for the previous year. Average market quotations inclined from £149·875 to £226·03 per ton, and, on the basis of average prices, the value of the production was £132,748·146.

Seasonal periods were characterised by leaner rainfalls, and, except in those cases where established reticulation services satisfied the demand for hydraulic mining, there were frequent shortages of water for sluicing purposes in the stanniferous areas, and this factor partially mitigated the advantages to be derived from the improved economic conditions, and operated against an additional increase in the output.

Increased productive operations covered both lode and alluvial occurrences, and material advances were made in regard to the future exploitation of dormant deposits. With a regional maintenance of the closing price of tin an extension of productive operations may be anticipated.

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

Storey's Creek Mine.—Improved economic conditions and encouraging lode developments in the engine-winze, which was sunk for a further lift of workings below No. 3 level, restored this mine to a semblance of former activities.

Concurrently with augmented operations, the average number of employees inclined from 15 to 70, and approximately 3933 tons of ore was raised and milled, for an output of 42·353 tons of tin concentrates, containing 28·8 tons of metallic tin, valued at £5810·47. Wolfram concentrates stocked from previous operations and produced during the year totalled 90·05 tons, valued at £2728·84. The full production was marketed at favourable prices.

Aberfoyle Tin No Liability.—A vigorous policy of mine development and milling innovations was prosecuted by this company.

The north and south drives were advanced on the major veins of the ore-vein system at the 125 feet and intermediate levels of the shaft workings, exploratory driving and cross-cutting were undertaken to determine the economic possibilities of other sections of the ore zone, and the necessary rising was done for the requirements of stoping and ventilation. At the adit-level the projected driving and crosscutting was completed for the purpose of sinking the main shaft for a lift of workings below the 125-feet level.

Calcining, jigging, and tabling units were installed for the treatment of second concentrates, and the general milling equipment was augmented as required.

The ore mined totalled 11,322 tons, and, including a small quantity carried forward from the previous year, 11,410·5 tons were milled, for a recovery of 234·05 of first tin concentrates, 218·25 tons of second tin-wolfram concentrates, and 9·4 tons of wolfram. Finished products were stocked for sale at the best available prices, and sales effected were 251·247 tons of tin concentrates, containing 174·022 tons of metallic tin, valued at £33,445·187, and 14·09 tons of wolfram, valued at £873·712. The net mine value, on the basis of sale economies and exchange advantages, was £36,635·47. Latterly operations gave employment to 76 men.

Small-scale sluicing was intermittently pursued on Foster's Freehold at Royal George, and resulted in an output of 2·44 tons of tin oxides, containing 1·775 tons of metallic tin, valued at £387·2188.

The proposed re-establishment of mining on the Brookstead tin areas was advanced to an investigational producing stage, attention being devoted to both the lode and alluvial occurrences. The major alluvials were not operated on, but small areas of shallow alluvial ground, at the higher levels, were sluiced, and small quantities of ore were produced from the Main and Christoe lodes, whilst the Hancock and Kent lodes were committed to investigational operations. A small quantity of ore was crushed, but, in the absence of complete milling units, material progress was not made in this direction.

Operations resulted in the production of 5·858 tons of tin concentrates, containing 4·059 tons of metallic tin, valued at £869·377.

Interest has been again directed to the economic possibilities of the Mount Rex Tin Mine, where the ore is a complex copper-iron-zinc-lead sulphide, containing cassiterite and silver values. The mine has been dormant for several years, and has been denuded of all equipment. Recoverable difficulties experienced when active production was pursued are amenable to modern practices. The workings are to be unwatered, and a comprehensive examination is to be made of the lode features and values. Favourable results will lead to a resumption of productive operations.

Miscellaneous parties operated on shallow alluvials at Storey's Creek, Gipp Creek, and Royal George, and produced 7·25 tons of tin oxide, containing 5·075 tons of metallic tin, valued at £1014·732, but there are no developments of moment to be recorded in connection with these operations.

Open-cutting was resumed by Aulich and party at the Pyramid Hill Tin Mine, and 1·359 tons of tin concentrate was reported to have been recovered from the milling of approximately 103 tons of ore. The produce contained ·779 ton of metallic tin, valued at £168·257.

Operations were continued by the tribute party at the Argonaut Mine during the major portion of the year, when 20,009 cubic yards of shallow drifts were sluiced, for an output of 16·93 tons of tin oxide, containing 12·1 tons of metallic tin, valued at £2358·667. Latterly tributing was suspended, and a reconstruction of operations was undertaken by the Siamese Tin Syndicate.

Of marked interest to tin-mining activities in the St. Helens district was the advance made by the Siamese Tin Syndicate in regard to the establishment of sluicing operations. Having acquired extensive areas of tin-alluvials—embracing the George River Mine, Argonaut property, Goshen flats, and river flats flanking the Groom and George Rivers and the Golden Fleece Rivulet—the syndicate decided upon the colossal undertaking of constructing a high-level race, with a capacity of 100 sluiceheads, to bring in head-water from the St. Columba Falls. The project, together with the installation of syphons and reticulation columns, was accomplished during the year, and hydraulic mining was commenced on the Argonaut section and at the George River workings. The first clean-up will take place early in the coming year.

Operations were continued by the tribute party at the George's Bay Tin Mine, and several areas of comparatively shallow ground, aggregating 50,220 cubic yards, were sluiced, for an output of 12·719 tons of oxides, containing 8·946 tons of metallic tin, valued at £1814·571.

Sluicing of small areas of terrace drifts and river flats at the Hunt Mine resulted in a recovery of 5·575 tons of concentrate, containing 4·029 tons of metallic tin, valued at £788·147.

There were no outstanding developments in regard to activities by miscellaneous parties operating on shallow drifts and terrace ground in the St. Helens district. An average of 30 persons was engaged, and 19·485 tons of tin oxide were produced, for a return of 13·586 tons of metallic tin, valued at £2769·744.

Restricted operations were pursued by the tribute party at the Wyniford River Tin Mine, and 1·12 tons of concentrate were produced, for a return of ·796 ton of metallic tin, valued at £150.

Forty-three thousand cubic yards of granite formation was hydraulicked at the Laffer Tin Mine, for an output of 6·35 tons of tin oxide, containing 4·343 tons of metallic tin, valued at £875·16.

Bryce and party recovered 2·158 tons of oxides from the tin-alluvials at the Niagara Mine, and the metallic content was 1·748 tons of tin, valued at £377·196.

The Chintock Tin Mines Proprietary Limited was constituted, and acquired an area embracing a quartz-greisen lode in the granite country at the head of the Frome River. A 12-head stamper battery and tin-saving boxes were installed, together with a water-wheel, for initial power requirements. A stamper battery of six heads was placed in commission, and 1·054 tons of concentrate was recovered, for a return of ·738 ton of metallic tin, valued at £166·8. More active investigational and developmental work might be devoted to the lode occurrence.

Appreciable attention was directed to the productive possibilities, under current economic conditions, of the stanniferous granites, greisens, and aplites in Frome River-Weldborough-Cambria-Lottah areas, and there was a material increase in the output of tin by small parties operating on the shallow alluvials and formations. Although certain advances were made, no project of unusual magnitude evolved, but the miscellaneous producers accounted for an increased output of 104·686 tons of tin oxide, containing 73·277 tons of metallic tin, valued at £14,986·713, and these operations gave employment to an average number of 88 men.

The J.B.L. Syndicate continued to operate on the shallow drifts of the Weld flats at Moorina, and sluiced 8100 cubic yards of ground, for a recovery of 5·298 tons of concentrate, containing 3·781 tons of metallic tin, valued at £800·68.

Twenty-seven thousand cubic yards of terrace drifts were hydraulicked at the Greenstone Creek Mine, for an output of 3·1 tons of oxide, containing 2·242 tons of metallic tin, valued at £417·37.

Pioneer Tin Mine.—Operations at this mine were confined to sluicing of old dumps and patches of previously unworked ground and treatment of residues by the company and tributers. Operations gave employment to an average of 20 men, and 58·35 tons of concentrates were recovered, for a return of 42·25 tons of metallic tin, valued at £8802·84.

Latterly the leases, water-rights, power scheme, and general assets of the company were purchased by the Endurance Tin Mining Company for the principal purpose of extending the hydro-electric power to South Mount Cameron for mining purposes.

Waugh Tin Mine.—Sluicing operations were continuously pursued on the deep bouldery drifts along the Wyniford River. A total quantity of 28,000 cubic yards of ground was treated, for an output of 9·91 tons of tin oxide, containing 7·199 tons of metallic tin, valued at £1424·58.

The lease was occupied by a tribute party in the early part of the year, but the inclining price of tin induced the company to resume operations on the flats flanking the Wyniford River, and latterly 22 men were employed. Production by the company and tributers amounted to 6·246 tons of concentrate, which returned 4·5 tons of metallic tin, valued at £963·655.

Shean and party continued nozzling and mechanically elevating the terrace drifts at Garibaldi. The produce marketed totalled 19·1 tons, containing 14·01 tons of metallic tin, valued at £2790·397.

Ten thousand one hundred cubic yards of drifts were sluiced by Ponting and party at Eastern Lead Mine, and 6·77 tons of tin concentrates were recovered, for a return of 4·97 tons of metallic tin, valued at £595·24. A small quantity of alluvial gold was separated from the concentrates, and this was estimated to contain 6·77 oz. of fine gold, valued at £42·197.

Lawry and party, representing the Dorset Syndicate, acquired several leases on the Dorset flats, and installed a steam-operated plant for sluicing and elevating. The first run, on drifts fronting the Ringarooma River, resulted in the treatment of 9000 cubic yards of ground, for an output of 2·64 tons of tin-oxide, containing 1·876 tons of metallic tin, valued at £424·03. Two ounces of alluvial gold were separated from the concentrate, and this was estimated to contain 1·7 oz. of fine gold, valued at £10·88.

Endurance Tin Mining Company.—Productive mining was not pursued by the company, and lean rainfalls hampered sluicing, paddocking, and streaming by the various tribute parties, which, despite that disability, accounted for an output of 22·83 tons of oxides, containing 16·586 tons of metallic tin, valued at £3348·21.

Of major importance to mining activities in this area was the increased capitalisation of the company and the acquirement of the leases, water-rights, hydro-electric power scheme, and the general assets of the Pioneer Company. The power is to be extended to South Mount Cameron for the purpose of comprehensively exploiting the shallow ground and deep lead of tin-drifts, the existence of which has been established by exploratory boring and mining operations, and it is anticipated that a material advance will be made towards the objective during 1934.

Stevens and party were sufficiently enterprising to install a steam-plant for mechanically nozzling and elevating the tin-drifts at the old Clifton Extended. Five thousand cubic yards of ground were treated during the final quarter of the year, for an output of 3·15 tons of tin oxide, containing 2·205 tons of metallic tin, valued at £498·396.

The Mount Cameron Race continued to function as an important factor in mining activities at Gladstone. An average number of 32 men was engaged in sluicing tin-bearing drifts on areas served by the race, and operations resulted in the production of 38·9 tons of concentrate, which returned 27·2 tons of metallic tin, valued at £5524.

The enhanced price of tin induced a resumption of operations at the Monarch Mine, and it is expected that

production will result early in the New Year. Watts Brothers acquired an area of tin-alluvials at Boobyalla, and 12,000 cubic yards of free sandy drifts were sluiced for an output of 7·08 tons of tin oxide, containing 5·166 tons of metallic tin, valued at £1134·6. Investigational work was conducted over an extensive area of alluvials in this locality, and designed exploration will result from the preliminary observations.

Quite an appreciable number of small parties and individual operators engaged in productive mining in the Pioneer-South Mount Cameron-Gladstone areas, but continuity of working was hampered by frequent shortages of storm water. Operations gave employment to an average of 58 men, and resulted in an output of 63·539 tons of oxides, containing 44·475 tons of metallic tin, valued at £9050·496.

New Briseis Tin Mines.—Enterprising tribute activities gave employment to an average of 40 men, and although there was a small output from the treatment of river debris the major production was derived from the sluicing of cemented drifts at the old No. 1 mine, controlled hydraulicking of the upper drifts at the eastern end of the workings on the northern side of the Ringarooma River, and from a resumption of productive work at the old Triangle workings. The output of tin oxide totalled 68·15 tons, which was estimated to contain 49·06 tons of metallic tin, valued at £9552·888.

Phar Lap Tin Syndicate.—Operations by this syndicate did not merge into material importance. The lack of high-level water and developmental capital caused the stanniferous formation to be neglected, and activities were principally confined to production from shallow alluvials along Baker's Creek. There were 5200 cubic yards of ground sluiced for a recovery of 2·126 tons of concentrate, which returned 1·474 tons of metallic tin, valued at £304·775.

Lone Brother Tin Mine.—Improved economic conditions encouraged a resumption of sluicing operations at this mine, and during the latter half of the year 3·096 tons of tin oxide were produced for a return of 1·796 tons of metallic tin, valued at £400.

Several small parties, averaging 35 men, operated on shallow alluvials along the Ringarooma River, Cascade River, Main Creek, and at other parts of the Derby area, and produced 30·15 tons of oxides, containing 21·1 tons of metallic tin, valued at £4174·15.

Miscellaneous parties continued to exploit the shallow alluvials, terrace drifts, and formations in the Branxholm area, but operations were hampered by the infrequency of storm waters, and the output was less than for the previous year. Activities in this regard afforded employment to 26 men, and accounted for a production of 20·138 tons of tin oxide, containing 14·1 tons of metallic tin, valued at £2782·73.

Arba Tin Mine.—Tributers continued to be occupied on the sluicing of areas of virgin ground, and tailings accumulated along Branxholm Creek from earlier mining operations. An estimated quantity of 80,000 cubic yards of material was treated for an output of 40·9 tons of concentrate, which contained 28·979 tons of metallic tin, valued at £5864·15.

Ormuz Mine.—A party of five men continued to hydraulically mine the high drifts along the marginal faces of the old workings at the Arba Mine, and recovered 5·1 tons of oxides, containing 3·265 tons of tin, valued at £653·62.

At the Ruby Flat Mines, occupied by Messrs. Walsh Brothers, 30,100 cubic yards of alluvial ground and granitic formation were sluiced for an output of 16·578 tons of tin oxide, which returned 11·893 tons of metallic tin, valued at £2436·595.

Restricted sluicing of the quartz-greisen-leader formation was pursued by Stevens and party at the Mount Ruby Mine. There were 5·284 tons of concentrate recovered from the treatment of 5100 cubic yards of ground, and the produce contained 3·6 tons of tin, valued at £773·288.

The Mount Paris Tin Mining Syndicate continued to suffer an acute disability owing to lack of an adequate supply of head-water for hydraulically mining the extensive occurrence of stanniferous greisens and aplites on the occupied lease. Endeavours were made to introduce capital for comprehensive operations, but beyond investigational observations of the project there was no conclusive development during the period under review. Additional water-rights have been acquired to augment current supplies of head-water.

Small-scale sluicing was pursued on the aplite formation at Baker's Discovery Mine, and resulted in the production of 1·69 tons of tin oxide, containing 1·167 tons of metallic tin, valued at £252·3.

Miscellaneous parties, averaging 22 men, pursued shallow ground sluicing in the Ringarooma area, and accounted for an output of 13·192 tons of oxides, estimated to contain 9·223 tons of metallic tin, valued at £1892·59. Concurrently with the inclining price of tin, small parties and individual operators devoted more attention to the tin-bearing granites in the Star of Peace area, and during the final quarter of the year 26 men were occupied on surface operations and produced 3·194 tons of concentrate, valued at £505·177.

The Hampton Tin Mining Company acquired the right to mine on private property in the locality of Ringarooma. A plant was installed, and 500 cubic yards of ground were sluiced for a recovery of ·2 ton of tin oxide, containing ·144 ton of metallic tin, valued at £32·55.

An improvement ensued in productive activities by miscellaneous parties on the Strait Islands. Official records reveal an output of 5·64 tons of oxides, containing 3·788 tons of metallic tin, valued at £816·06. In addition, the Mount Munro Tin Mining Company was constituted, acquired an area of stanniferous alluvials, and during the final quarter of the year produced ·677 ton of oxide, containing ·36 ton of tin, valued at £81·8, from the sluicing of 800 cubic yards of ground.

Gold.

Despite a slight increase in the recorded output, activities in gold-mining were less pronounced. The estimated production was 899·42 oz. of fine gold, valued at £5643·4, as against 848·234 oz., valued at £4999·7, for the previous year. There were no regular producers from lode occurrences, and the major portion of the production resulted from the exploitation of auriferous alluvials. There were no new discoveries, but appreciable attention was again directed to the economic possibilities of known reefing series and alluvials and to the resumption of productive operations at previously abandoned mines and areas.

Sluicing and boxing were continued by miscellaneous parties in the Lisle Basin, and these operations accounted for a recorded output of 189·25 oz. of alluvial gold, estimated to contain 173·48 oz. of fine gold, valued at £1090·458. Operations by the Cradle Creek Gold Mining Syndicate were attended with improved results. There were 27,000 cubic yards of alluvials sluiced for a recovery of 161 oz., containing 147·44 oz. of fine gold, valued at £926·79. Prospecting was continued on the area of alluvials between Lisle and Greta with the object of introducing large-scale hydraulic mining, and mainland interest is now being centred in the economic possibilities of this project.

Productive activities in the Beaconsfield area were directed more to detrital and creek alluvials than to lode occurrences. Milling of the cemented alluvials at Bruen's open-cut workings was pursued by the Tasmanian Gold Mining Syndicate, but recoveries were disappointing, and the project was abandoned. Latterly, driving-out, open-cutting, and boxing were pursued by a tribute party. The total production from these operations was 21·2 oz., containing 18·57 oz. of fine gold, valued at £115·2.

Operations at the Beaconsfield Gold Mines were principally confined to a search for the lode alleged to have been left unstoped in the old workings. The shaft was deepened to 180 feet, and an appreciable amount of cross-cutting and driving was done, with negative results. A rise was then lifted from the 180-feet level to connect with Statton's winze, which is reported to have been sunk on the lode, but developments were not encouraging at the close of the year. There were 240 tons of alluvials and quartz from shallow workings crushed, for a recovery of 11·56 oz., which returned 10·58 oz. of fine gold, valued at £64·2. Recoveries were not equal to expectations, and the project of exploiting and milling the alluvials was abandoned.

Marked interest was centred in pilot operations by the G. L. K. Gold Mines Pty. Ltd. on the sands rejected from the milling and secondary treatment of ores from the Tasmania Gold Mine and accumulated along Blyth's Creek. Cyanidation, based on the equalisation of the contained cyanicides, was deemed to have yielded results of sufficient economic importance to warrant the installation of a completely designed operating unit, and this project is now receiving consideration. Recoveries from the pilot processes amounted to 22·69 oz. of melted gold, containing 12·91 oz. of fine gold and 4·06 oz. of silver.

With the electrically operated nozzling plant installed and placed in commission during the previous year, the North Tasmania Alluvial Syndicate sluiced 1100 cubic yards of alluvials at Brandy Creek for a final return of 2·68 oz. of fine gold, valued at £16·25. Operations were unprofitable, and the project was abandoned.

From the treatment of residues at the old battery site of the Tasmania Gold Mine, 14·25 oz., containing 13·06 oz. of fine gold, valued at £82·93, were recovered.

Statton and party obtained 1·55 oz. of gold from the treatment of 10 cubic yards of alluvial from the old Cosmopolitan workings. Prospecting was continued by F. G. Clay on an area northerly from the North Tasmania Mine, but the source of shed of the gold associated with flat and detrital alluvials was not located. There were 16·69 oz. of alluvial gold, containing 15·99 oz. of fine gold, valued at £101·94, recovered from the treatment of the alluvials. Exploration by vanning and trenching is to be continued. Difficulties are experienced in obtaining complete details of the gold won by small parties and individual miners operating on shallow alluvials and in isolated localities, but records indicate that 22·74 oz. of alluvial gold, containing 20·835 oz. of fine gold, valued at £130·649, were recovered by such operators at Brandy Creek, Eaglehawk Gully, and other parts of the Beaconsfield area.

A production of 21 oz. of alluvial gold was credited to miscellaneous operators in the Lefroy area. Following an abandonment of the Golden Zone Mine, the Wallis Gold Mining Company transferred activities to the Old Comrades Mine. The workings were unwatered, and exploratory driving and crosscutting were pursued with negative results, whereupon the project was abandoned. Operations were then transferred to the Lee-Floyd Mine, where further work is to be done on the reef partially explored by the previous operators. Prospecting was pursued by several parties in different localities at Lefroy, but there is no known development of moment to be recorded.

Alluvial mining was less active at Mangana and adjacent areas, and records indicate a decline in the production to 31·38 oz. of gold, containing 28·86 oz. of fine gold, valued at £179·02. Investigational operations were conducted on the alluvials in Major's Gully, but no development materialised. Arrangements were completed for a resumption of lode-mining at the Argyle Mine, and it is anticipated that operations will be commenced early in the New Year. A parcel of 10 tons of quartz from the reefing series at Ferntree Gully was forwarded to Mathinna, and, together with 1 ton of stone from the Old Boy's Mine, was crushed at the Old Boy's battery for a return of 6·82 oz. of melted gold.

Attention was directed by the New Fingal Syndicate to the reefing series at the old Daylight and New Fingal Reefs workings. A light 2-head stamper battery was installed, and 7 tons of quartz from shallow operations were crushed for a final return of 4·55 oz. of fine gold, valued at £29·138.

Exploration and production were intermittently pursued by Messrs. Brock Brothers on quartz veins at the Enterprise, Consolidated, and other workings at Mathinna. There were 32 tons of quartz crushed from these operations at the Old Boy's battery for a recovery of 25·97 oz. of gold, estimated to contain 23·74 oz. of fine gold, valued at £151.

Depth exploration was continued at Church Hill, with negative results. Operations at the Hinemoa Mine were confined to driving a crosscut adit to intersect the lode below the old workings. A trial parcel of 4·5 tons of quartz produced from the Jubilee Mine returned 2·72 oz. of fine gold, valued at £16·49. Endeavours are being made to raise capital for the purposes of a resumption of operations at this mine. Treatment of residues and debris at the Golden Gate Mine battery resulted in the recovery of 98·75 oz. of melted gold, containing 90·52 oz. of fine gold, valued at £552·53.

Active mining was resumed on the old Royal Tasman leases at Gladstone by the Gladstone Gold Mining Company. The workings and battery were reconditioned, and 305 tons of ore were stoped from the Royal Tasman reef, above the adit-level, and crushed for a battery and tabling return of 86·51 oz. of melted gold, containing 67·46 oz. of fine gold, valued at £432. Eight bags of concentrates remained unsold at the close of the year. Winzing below the adit-level encountered impoverished values, and the project of sinking for a lower lift of workings was abandoned. The north drive is to be extended to connect with the old Royal Tasman workings for exploration purposes. An occurrence of gold-bearing quartz was located on the westerly alignment of the old Royal Mint workings, and this is to be explored by shafting.

Disappointing results attended prospecting on the gold-bearing reef discovered at Coarse Gold Creek, and operations were suspended.

Power disabilities seriously hampered sluicing by the Golden Cora Sluicing Company at Warrentinna, and a vertical projection of the slate bedrock, low recoveries from an area of ground sluiced, and an exhaustion of capital resulted in a suspension of operations. The crisis was an unfortunate episode in the endeavours made to hydraulically mine the extensive occurrence of alluvial gravels on the occupied areas, as improved values appear to have been associated with the bottom stratum of gravels, and the stage of a sluicing-run on the full depth of alluvials was not attained when operations were suspended. During the operating period 2620 cubic yards of ground were passed through the sluice-box for a recovery of 2 oz. of gold, containing 1·8 oz. of fine gold, valued at £11, and ·048 ton of tin oxide, containing ·034 ton of metallic tin, valued at £5·71. The area is worthy of a more comprehensive examination to better determine the economic possibilities of the alluvials.

Capital was introduced to deepen the winze to approximately 50 feet on the reef at the Renown Gold Mine, but depth results were not as anticipated, and an option to purchase the property was not exercised. A parcel of 9 tons of quartz was stoped from the reef in the winze, and crushed at the Ringarooma United battery for a return of 22·5 oz. of melted gold. The result is likely to cause more attention being given to active mining by the leaseholders.

A prospect sample of 10 tons of stone was produced from a small reef at the Imperial Gold Mine at Forester, and returned 5·25 oz. of melted gold, containing 4·81 oz. of fine gold, valued at £5·76. The result did not induce further activities.

Small lots of alluvial and reef gold were produced from the Alberton-New River series, but mining was not appreciably active in these areas. Results of diamond-drilling in the New River reefing series were not encouraging, and caused the interest being centred in the development of this series to wane. Miscellaneous operators accounted for a production of 21·4 oz. of alluvial gold, containing 19·67 oz. of fine gold, valued at £123·8, from the New River alluvials. There were 5·15 oz., containing 4·72 oz. of fine gold, valued at £29·96, recovered from shallow alluvial ground at Alberton. A parcel of 3 tons of quartz was won by surfacing on ore-veins at the Long Struggle Gold Mine, and returned 4·5 oz., containing 4·1 oz. of fine gold, valued at £36. Seven oz. of melted gold, valued at £40·64, were recovered from the milling of 19 tons of quartz produced by Matthews and party from the reefs on the Mount Victoria leases, but there are no developments of moment to be recorded in connection with these operations.

The balance of the recorded production accrued from miscellaneous operations on the auriferous series, and from the treatment of tin oxides recovered from the sluicing of tin-alluvials in areas which are associated with the deposition of gold. Gold recovered in the latter manner constituted the third order of importance in the total output recorded.

Appendix VI.

REPORT OF MOUNT CAMERON WATER-RACE BOARD FOR THE YEAR ENDED 31st DECEMBER, 1933.

Sir,

We have the honour to submit our report for the year ended 31st December, 1933.

Main Race.

As intimated in the report of the previous year, the channel has been cleared of weed-growth, as well as of silt and accumulated debris. Repairs, where found necessary, were also carried out. The cost of the work was defrayed by an amount of £200 provided from the fund for relief of unemployment.

The general condition of the race is satisfactory, and, provided nothing unforeseen occurs, the cost of repairs and maintenance during the current term should be lighter than has been the case for some years past.

Syphons and Flumes.

The condition of these is also satisfactory; constant attention by the channel-keeper is required to the wooden section of the Ringarooma syphon to maintain it in a state of efficiency.

Dams.

These structures have been kept in a satisfactory state of repair, and, as in the past, have proved to be indispensable adjuncts to the water served from the race.

General.

Compared to the past, the present year has been a very satisfactory one. The enhanced market price for tin is reflected in the increased amount received for the sale of water. The receipts for the term exceeded expenditure by £459 14s. 6d.

A slight increase occurred in the number of claims supplied. The quantity of ore raised, however, is less by 6 tons 8 cwt. 1 qr. 27 lb.

The amount received for the sale of water on the fixed scale was supplied for power purposes, for gold-mining, and for domestic use. The prospects for the ensuing year can be said to be promising for an increased production, provided the price of tin is maintained at a payable level.

Rainfall.

The registered rainfall for the year was as follows:—

	Inches.	Points.
Great Mussel Roe	26	19
Little Mussel Roe	26	1

Revenue.

The revenue for the year amounted to £1203 8s. 8d., being an increase of £511 10s. 5d. on the previous year.

Expenditure.

The expenditure for the year amounted to £743 14s. 2d., being an increase of £13 5s. 10d. on the previous year.

Statistics.

The statistics for the year are as follows:—

Average number of claims supplied per week	14
Greatest number supplied in any one week	19

Total number of heads supplied under—	Heads
Fixed or cash scale	41
Royalty or credit scale	3,993
Total	4,034

Tin ore raised—	Tons.	Cwt.	Qr.	Lb.
Under royalty scale	38	16	3	19
Under fixed scale	20	15	0	0

Average number of men employed per week, 25.

Receipts for Year.

	£	s.	d.
Water sold under fixed scale	50	12	3
Water sold under royalty scale	1,152	16	5
Total	£1,203	8	8

Expenditure.

	£	s.	d.
Salaries and wages	688	11	8
Travelling expenses	11	17	11
Insurance	7	11	3
Stationery and printing	11	5	4
Stores, &c.	11	14	8
Repairs to race	6	12	6
Miscellaneous	6	0	10
Total	£743	14	2

We have, &c.,

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

The Hon. the Minister for Mines, Hobart.

WALTER E. SHIMMINS,
GOVERNMENT PRINTER, TASMANIA.