AR 1930

(No. 3.)

TASMANIA

REPORT

OF THE

SECRETARY FOR MINES

FOR

YEAR ENDING DECEMBER 31

1930

INCLUDING REPORTS OF THE INSPECTORS OF MINES, GOVERNMENT GEOLOGIST, GOVERNMENT CHEMIST AND ASSAYER, STATE MINING ENGINEER, AND THE MOUNT CAMERON WATER-RACE BOARD

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

TASMANIA:
WALTER E. SHIMMINS, GOVERNMENT PRINTER, HOBART

1931

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TABLE OF CONTENTS.

REPORT OF SECRETARY FOR MINES.

Mines Department,
Hobart, 30th May, 1931.

SIR,

I HAVE the honour to submit my amended report on the Mines Department and the Mining Industry for the year ended 31st December, 1930. Your instructions to me when I submitted my original report to you on the 20th instant, to revise and condense it, have been acted upon.

APPENDICES.

Appended will be found:

Annual Report of the Mount Cameron Water-race Board.
Report of the State Mining Engineer.
Report of the Government Geologist.
Report of the Chemist and Assayer.
Report of the Chief Inspector of Mines.
Reports of the Inspectors of Mines.
Report of the Chief Inspector of Explosives.

DEPARTMENTAL STAFF.

Upon the recommendation of the Public Service Commissioner, in April the office of "Director of Mines," which was created in January, 1926, was abolished, and the then holder of the position (Mr. A. M. Reid) was retired from the 30th May.

THE MINING ACT, 1929.

The Act, which passed both Houses of Parliament in 1929, received the Royal Assent on 18th January, and came into operation from that date, and new regulations prepared thereunder were approved by His Excellency the Governor in Council on the 7th November, and are now in operation.

AID TO MINING.

ASSISTANCE TO LEASEHOLDERS, TRIBUTORS, &C.

Applications for assistance under Section 5 of the Aid to Mining Act, 1927, were considerably above normal, due to the low ruling prices for base metals and silver, which fact was responsible for the closing of most of the producing mines in the State.

In the Zeehan-Dundas district a large number of applications were dealt with, and assistance to carry out developmental and mining operations was granted. Included in this was a special grant to relieve unemployment at Zeehan; on the recommendation of the Zeehan Mining Advisory Committee it was applied to the drainage of the Comstock tunnel to the Boss section. Owing to a considerable section of the tunnel being found in a collapsed condition, the full distance was not completed with the amount of money available.

Assistance granted to tributors and others in the district has enabled them to continue developmental and mining operations, and the results obtained have been satisfactory. With a return of normal market prices for lead and silver the prospects of a considerable increase of output are hopeful. Under the conditions at present availing, it is only the highest-grade ore that will give anything approaching a reasonable return to the operators.

SUSTENANCE TO PROSPECTORS.

Applications for sustenance allowance have been particularly heavy. The exigencies of the times have forced many unemployed miners to turn their attention to the search for mineral deposits with the hope of locating a payable one.

Attention has been turned more particularly to alluvial gold, but other mineral deposits have been sought after.

Some encouraging reports have been received, and the sustenance granted in a number of cases has been the means whereby some prospectors have been able to locate payable alluvial ground, gold reefs, and other mineral deposits in various parts of the State.

BORING OPERATIONS.

Under the provisions of the Aid to Mining Act, 1927, the Department has continued to carry out the scheme outlined in the last annual report relating to drilling and boring. The work on the Meunna Coalfield was curtailed to release the drilling plant for work in connection with the Imperial Geophysical Experimental Survey on the West Coast.

The time allotted to complete the full programme of drilling proved to be insufficient for the results to be included in the final report of the I.G.E.S. The boring, however, gave much valuable information, particularly the work carried out on the copper-nickel deposits at Five-Mile, near Zeehan. Boring work by the diamond drill at Dundas has supplied much useful data regarding the nature at depth of the large gossaneous formations occurring there. This work is proceeding.

The Calyx drilling plant has been continuously occupied throughout the year; commencing at Beaconsfield to test the drift deposits there for alluvial gold.

The results obtained from this work, so far as carried out, were not encouraging. Attention has been given to testing the Ringarooma deep alluvial tin leads; the Weld lead receiving first attention. The upper sections of this lead have been more or less extensively worked by the New Moorina Company and its predecessors.

Thirteen holes were put down, to an average depth of 212 feet, ranging from 88 to 286 feet.

On completion of the work at Moorina a series of bores were commenced on the deep alluvial drifts below the junction of the Arba-Ringarooma lead.

Hitherto the ground to be tested has not been bottomed; the data obtained as a result of this work will therefore be valuable as a guide for future investigators.

It is intended to test the Ringarooma deep lead immediately below its junction with the Valley lead, and, when that work is done, to do some drilling work on the alluvial gold deposits on the Lefroy-Back Creek district.

Expenditure.

	£ s. d.	£ s. d.
Part II. of the Aid to Mining Act, 1927—		
Drilling and boring carried out at Beaconsfield, Moorina, Branxholm, Preolenna, Renison Bell, Five-Mile, Zeehan, and Dundas:		
Salaries and wages	2,391 2 2	
Other expenses	1,115 4 10	
		3,506 7 0
Sustenance allowance to prospectors	....	1,854 16 0
Miscellaneous expenditure	....	30 16 9
Grants under Part III. of the Aid to Mining Act, 1927	....	662 7 7
Grants under Part IV. of the Aid to Mining Act, 1927	....	587 6 6
		£6,641 13 10

Receipts.

	£ s. d.
Royalty paid by tributors	18 16 9
Commonwealth Treasury: Grant for precious metal prospecting	1,123 1 8
Miscellaneous	33 2 8
	£1,175 1 1

Ore Sales.

	£ s. d.	£ s. d.
The amount received from ore sales was		218 4 9
Which was distributed as follows—		
Paid to tributors	£199 8 0	
Royalty paid to State	18 16 9	
		£218 4 9

GEOLOGICAL SURVEY.

The principal work of the Geological Survey during the year was the carrying out of field operations in connection with the systematic survey initiated under the Development and Migration Commission Scheme.

This work was started in August, 1929, in the Smithton district. Early in 1930 three authorised surveyors (Messrs. K. M. Harrison, G. Campbell Smith, and A. Wilks) were engaged to operate in the Smithton, Rosebery, and Lefroy districts respectively. In March Mr. K. J. Finucane, Field Geologist, commenced the geological survey of the Rosebery district, while Mr. F. Blake continued the work in the Smithton district.

Early in the financial year 1930-31 the continuance of the systematic survey was discussed, particularly in view of the financial position of the State, and the fact that no actual grant was being made by the Commonwealth for this survey. As a result it was decided to discontinue the survey, but at the same time to satisfactorily complete the surveys of the Smithton and Rosebery districts already commenced. It is anticipated that the field work in connection with these will be completed early in 1931. The preparation of the maps will not be completed until some later date. Full details will be found in the report of the Government Geologist.

GENERAL REMARKS.

The value of the mineral output amounted to £1,270,114, a decrease of £520,539 as compared with the output for the year 1929.

This is mainly due to the fall in the price of metals. Copper shows an increase of 1071 tons, although the value is £120,407 less than in the previous year.

There was an increase in the output of coal of 8425 tons, and in value £4376. Gold, silver, and lead show decreases. The output of tin was 128 tons less than in the previous year, and the value £60,422 less.

The number of men employed was 4606, as compared with 4986 for 1929.

RETURN showing the Quantity and Value of Minerals produced in the State of Tasmania during the Year 1930.

Mineral.	Quantity.	Value.
		£
Bismuth..... tons	0·97	475
Cadmium ..... „	3·3052	1333
Carbide .... „	3297	51,437
Copper ... . „	9940·78	620,578
Coal .... „	138,716	110,253
Cement ..... „	37,412	115,520
Gold ..... ozs. f.	4466·61	18,976
Lead ..... tons	4237·84	77,590
Limestone..... „	100,251	94,977
Nickel ..... „	117·6	1999
Osmiridium ..... ozs.	952·70	16,235
Shale ..... tons	5428	3490
Silver ..... ozs. f.	711,619	56,068
Talc ..... tons	13·35	53
Tin..... „	511·777	69,592
Wolfram ..... „	112·60	12,216
Zinc ..... „	943	19,322
Total	...	£1,270,114

The Electrolytic Zinc Company of Australasia Limited recovered 53,958 tons of Zinc valued at £1,015,610, and 224·1939 tons of Cadmium, valued at £76,275, from other than Tasmanian ores, and employed an average of 950 men.

ASBESTOS.

Nothing of note has occurred during the year in connection with the deposits at Anderson's Creek and Birch's Inlet, and no asbestos was produced.

RETURN showing the Quantity and Value of Asbestos produced from 1899 *to* 1930 *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
1920-1930	—	—
Total.....	3565·5	£7105

BARYTES.

No barytes was won during the year.

RETURN showing the Quantity and Value of Barytes produced during the Years 1916 *to* 1930.

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	—	—
Total	1812	£6933

BERYL.

Definite inquiries for supplies of this mineral have been received on behalf of buyers in the United States of America, the price offered being in the vicinity of £8 per ton for lots from 10 to 100 tons at port of shipment.

This mineral occurs in the form of narrow veins in granite in the valley of the Forth River, near Moina, also near the Great Republic Mine, at Ben Lomond, and elsewhere in the State.

Buyers specify not less than 10 per cent. BeO. Samples from Moina have been found to contain up to 14 per cent., whilst that at Ben Lomond is recorded at 8 per cent.

Beryl is a silicate of beryllium and aluminium and in appearance resembles quartz in crystal form.

BISMUTH.

The output for the year was ·97 ton, valued at £475. The deposit at Stormont has been further developed, with encouraging results.

RETURN showing the Quantity and Value of Bismuth produced from 1904 *to* 1930 *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
Total	75·029	£23,527

CADMIUM.

There was again a marked decrease in the quantity produced from Tasmanian ores, the output being 3·3 tons, valued at £1333, as against 17·498 tons, valued at £7839, for 1929.

The General Superintendent, Electrolytic Zinc Company, Risdon, reports as follows:—

"Recovery of cadmium metal was 227·5 tons.

"Included in the above figure is metal produced from 2289 tons of calcines from the company's West Coast mines. These yielded 943 tons of slab zinc, 3·3 tons of cadmium, 134 tons of lead, and 16,677 ounces of silver."

RETURN showing the Quantity and Value of Cadmium produced during the Years 1924 *to* 1930.

Year.	Quantity.	Value.
	Tons.	£
1924	5·247	1175
1925	5·2454	1178
1926	10·4014	1827
1927	19·2712	3233
1928	19·7266	4329
1929	17·498	7839
1930	3·3052	1333
Total	80·6858	£20,914

CARBIDE.

The Works Manager, Australian Commonwealth Carbide Company Limited, reports that the factory at Electrona was in operation for nine months of the year, and manufactured 3279 tons, valued at £51,437.

RETURN showing the Quantity and Value of Carbide produced during the Years 1922 *to* 1930.

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
Total	30,039	£603,387

CEMENT.

The output was 37,412 tons, valued at £115,520, as compared with 41,798 tons, valued at £175,613, for 1929.

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

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
Total	249,910	£1,091,739

COAL.

The output amounted to 138,716 tons, valued at £110,253, as against 130,291 tons, valued at £105,877, being an increase in both quantity and value.

RETURN showing the Quantity and Value of Coal raised from 1880 *to* 1930.

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
Total	2,799,696	£2,201,561

COPPER.

The production for the year was 9940·78 tons, valued at £620,578, as against 8689 tons, valued at £740,985. The abnormal decrease in value is owing to the fall in the price of the metal.

RETURN showing the Quantity and Value of Copper in Blister Copper and Copper Ore during the Years 1919 *to* 1930 *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...	9949	620,678	—	—	9940	620,578
Total	78,668	5,860,101	25·293	1462	78,693·293	5,841,563

THE MOUNT LYELL MINING AND RAILWAY COMPANY LIMITED.

Report (by the General Manager) on work done during the year ended 31st December, 1930:—

"*Mining.*

"During the year mining operations were again practically restricted to the North Lyell and Lyell Comstock Mines, the entire ore-production coming from these two properties, with the exception of a quantity of low-grade material obtained in the course of exploratory work from the Royal Tharsis Mine. Exploratory and development work, also extensive diamond-drilling, were carried out in the North Lyell and Lyell Comstock Mines, and to a smaller extent in the Royal Tharsis Mine.

"*North Mount Lyell Mine.*—Development and exploratory work and ore-breaking were carried out continuously throughout the year, the ore won totalling 193,359 tons, this being the largest output for any one year. In addition, 100 tons of copper precipitates were recovered from the mine waters *via* the new tunnel. The large quantity of stope-filling required was obtained entirely from the Crown Lyell quarry, this being efficiently handled by an electrically operated shovel.

"*Lyell Comstock Mine.*—Ore-breaking in this mine was undertaken continuously during the year, the extraction totalling 56,881 tons. An extensive programme of developmental and exploration work was also undertaken. The tramway deviation to facilitate the transport of ore from the mine to reduction works, as referred to in last report, was completed during the term, and is now in satisfactory operation.

"*Royal Tharsis Mine.*—A large amount of exploratory work and a little diamond-drilling were undertaken on this low-grade occurrence, with the object of preparing the deposit for production on a large scale when required. The ore won during the course of the work, totalling 3785 tons, was despatched to the concentration plant, where its marked suitability for treatment by the flotation process was fully demonstrated.

"*Reduction Works.*

"The usual ore-treatment operations were carried on without intermission throughout the year.

"The concentrating mill treated 244,549 tons of ore from the various mines, the concentrates produced totalling 49,519 tons, the grade of which again showed a marked advance on that of the previous year. The metal-bearing material smelted aggregated 58,320 tons, comprising 8662 tons of high-grade ore from the North Lyell Mine, and 49,658 tons of concentrates produced from the several ores treated. The blister copper production for the period amounted to 10,018 tons, as compared with 8788 tons for the previous year.

"The electrolytic copper refinery operated satisfactorily throughout the term, dealing with the full blister copper production of the company's works, the resulting cathode copper being shipped to Kembla, in New South Wales, for transforming into wire bars and other merchantable shapes.

"The ore-reduction plant was maintained at its usual standard of efficiency. Important additions to the concentrating and refining plants are being made which will bring their total capacity to approximately 13,000 tons per annum of fine copper. Additions to the plant during the year

included a bowl classifier (the installation of which has resulted in a substantial improvement in the recovery of copper) and two steel flotation-boxes (each 60 feet in length), and extensive improvements to the mill building were effected by reconstructing a large section of it in steel. Arrangements to effect the transference of concentrates from mill to smelters by means of pumping through a pipe-line, instead of by transport in trucks as hitherto, are nearing completion. The further plant extensions referred to above were taken in hand during the latter half of the year. These include the installation of a second Marcy mill, an 8-feet Dorr classifier, and additional flotation-boxes, also the relocation of the coarse crushing section, the capacity of which will be increased by the addition of a cone crusher of the most modern type.

" Hydro-Electric Plant.

" The Lake Margaret power plant was in operation throughout the year, the whole of the company's requirements, as well as those of the Lyell district, being supplied from this source, which also provided the requirements of the Electrolytic Zinc Company in the Zeehan and Rosebery districts. The installation of the extra turbo-generator set referred to in last report was completed during the year, and the construction and equipment of the lower power-station on the Yolande River, to provide additional power to which the company is committed under its contract with the State Hydro-Electric Department, was nearing completion at the close of the year."

Ore and metal-bearing material smelted—

Source of Material.	Tons (Dry).
Ore: From the Company's North Lyell Mine	8,662
Concentrates: From the Company's North Lyell Mine, Lyell Comstock Mine, and Royal Tharsis Mine ore	49,658
Total	58,320

Blister copper produced—10,018 tons, containing: copper, 9934 tons; silver, 182,979 oz.; gold, 3793 oz. Approximate value, £650,716.

Average number of men employed—

Mining Department—		
At the Company's Mount Lyell Mine	—	
At the Company's North Lyell Mine	435	
At the Company's Lyell Comstock Mine	100	
At the Company's Royal Tharsis Mine	5	
Miscellaneous	93	
		633
Reduction Works Department (including Lake Margaret)		598
Railway Department—Mount Lyell Railway		91
Total		1,322

Dividends paid during year, £128,919 10s.: 2s. per share.
Dividends paid since the inception of the Company to the 31st December, 1930: £5,135,319.
Copper produced from the inception of the Company to the 31st December, 1930: 237,251 tons (fine).
Silver produced from the inception of the Company to the 31st December, 1930: 14,160,488 oz. (fine).
Gold produced from the inception of the Company to the 31st December, 1930: 397,884 oz. (fine).

GOLD.

The quantity of gold won was 4466·61 ounces, valued at £18,976, as compared with 5596·88 ounces, valued at £23,772, for 1929.

RETURN showing the Quantity and Value of Gold won from 1880 *to* 1930.

Year.	Quantity.	Value.
	Ozs.	£
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
Total	1,914,950·686	£7,676,358

IRON.

No iron ore was produced during the year.

RETURN showing the Quantity and Value of Iron Ore produced from 1897 *to* 1930.

Year.	Quantity.	Value.
	Tons.	£
1897 to 1903 inclusive	20,442	16,276
1904	6840	2975
1905	6300	2600
1906	2600	1100
1907	3000	1150
1908	3600	1600
1909–1930	—	—
Total	42,762	£25,701

IRON PYRITES.

RETURN showing the Quantity and Value of Iron Pyrites produced during the Years 1915 *to* 1930.

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	—	—
Total	68,293·273	£93,916

LEAD.

The output was 4737·84 tons, valued at £77,590, as compared with 5983 tons, valued at £138,793.

RETURN showing the Quantity and Value of Lead included in Silver-Lead during the Years 1919 *to* 1930.

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
Total	53,925·932	£1,473,613

LIMESTONE.

The output was 100,251 tons, valued at £94,977, as compared with 68,176 tons, valued at £66,597. Of this quantity the Broken Hill Proprietary Company Limited quarried 83,125 tons.

RETURN showing the Quantity and Value of Limestone produced during the Years 1923 *to* 1930.

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
Total	961,235	£954,454

NICKEL.

The quantity won was 117·6 tons, valued at £1999, as compared with 85·44 tons, valued at £14,765.

RETURN showing the Quantity and Value of Nickel produced from 1927 *to* 1930 *inclusive.*

Year.	Quantity.	Value.
	Tons.	£
1927	86·2	14,656
1928	10	1697
1929	85·44	14,765
1930	117·6	1999
Total	299·24	£33,117

OCHRE.

RETURN showing the Quantity and Value of Ochre produced during the Years 1918 *to* 1930.

Year.	Quantity.	Value.
	Tons.	£
1918	100	200
1919	—	—
1920	—	—
1921	14	56
1922	—	—
1923	—	—
1924	20	50
1925	—	—
1926	38	69
1927	—	—
1928	—	—
1929	—	—
1930	—	—
Total	172	£375

OSMIRIDIUM.

The quantity of this metal won was 952·7 oz., valued at £16,235, as compared with 1360 oz., valued at £30,624.

The following table gives particulars of osmiridium won from Adamsfield since its discovery up to 31st December, 1930:—

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
	9804	13	10	£219,804	7	10

RETURN showing the Quantity and Value of Osmiridium produced during the Years 1910 *to* 1930 *inclusive.*

Year.	Quantity.	Value.
	Ozs.	£
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
Total	24,611·484	£571,148

SHALE.

The output of shale was 5428 tons, valued at £3490, an increase of 1129 tons, valued at £508, as compared with the year 1929.

The Goliath Cement Company reports:—"The mine operated for 20 weeks during the year, producing 1393 tons of shale required for cement manufacture, prior to the change over to wet process at our works, while 1410 tons were mined for treatment in the Crozier retort installed and operated on our property at Latrobe—a total of 2803.

"The shale obtained, at 14s. per ton crushed, is thus valued at £1962.

"The number of men employed varied from seven to nine, depending on working conditions and requirements.

"No plant alterations of moment were made during the year, but a new tunnel was driven in a distance of 469 feet, opening up a large body of shale adjacent to the crushing plant, and supplies are now being obtained for retorting exclusively from this tunnel.

"The Crozier retort was first operated early in the year, and run intermittently on developmental lines until some 100 tons of crude oil was obtained. A small refining plant was installed towards the end of the year to treat this crude oil, and this was all fractionated and refined by the end of the year. Further work on these two units is now in progress with steadily improving results.

"Shale fed to Crozier retort, 1226 tons.

"Yield in crude oil, 20,101 gals.

Crude light oil, 4700 gals.
Diesel oil, 7790 gals.
Bitumen, 3210 gals.
Petrol, 540 gals.
Power kerosene, 2120 gals.
Fuel oil, 1070 gals."

L. and N. Tasmania Limited.—No work was done during the year.

Tasmanite Shale Oil Company Limited.—Mr. A. W. McPherson, manager, reports:—

"Mining operations consisted of extracting oil shale (for eight months) and erecting plant retorts, &c. (four months).

"Oil Shale Extracted.—Retorted, 1444 tons; sent to Launceston Gasworks, 274 tons; sent to Melbourne, 50 tons; on hand at works, 200 tons. Total, 1968 tons.

"Number of Men Employed.—Average, 12 men.

"Crude oil produced, 35,000 gallons.

"The plant consists of three 6-ton retorts, capable of producing weekly 3150 gallons of oil, of a value of 6d. per gallon."

RETURN showing the Quantity and Value of Shale produced during the Years 1910 *to* 1930.

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
Total	25,099	£19,106

RETURN showing the Quantity and Value of Oil distilled from Shale.

Year.	Name of Company.	Gallons.
Up till 1926	Several Companies	22,000
Up till 1928	Australian Shale Oil Corporation	65,000
Up till 1930	Tasmanite Shale Oil Company	42,800
Ditto	Goliath Cement Company (Crozier Retort)	22,301
	Total	152,101

SCHEELITE.

RETURN showing the Quantity and Value of Scheelite produced during the Years 1917 *to* 1930.

Year.	Quantity.	Value.
	Tons.	£
1917	69	12,130
1918	216	39,252
1919	198·98	43,181
1920	105·09	17,905
1921–1930	—	—
Total	589·07	£112,468

SILVER-LEAD.

RETURN showing the Quantity and Value of Silver-Lead Ore produced from 1888 *to* 1918 *inclusive.*

Year.	Quantity.	Value.
	Tons.	£
1888 to 1903 inclusive	300,977·5	2,571,771
1904	51,138	203,702
1905	75,270·5	246,888
1906	87,117·75	462,443
1907	89,762·5	572,560
1908	63,116·9	322,007
1909	80,378·35	298,880
1910	51,226·91	247,576
1911	61,501·195	253,361
1912	90,123·868	309,098
1913	83,289·268	319,997
1914	11,565·54	96,225
1915	10,382·95	91,689
1916	11,229·410	153,796
1917	9575·780	152,122
1918	7241·400	127,176
Total	—	£6,429,291

Since 1918 the metallic contents are shown under silver and lead respectively.

SILVER.

The output was 711,619 oz., valued at £56,068, as compared with 864,354 oz., valued at £94,560, for 1929.

RETURN showing the Quantity and Value of Silver contained in Silver-Lead and Blister Copper during the Years 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, *and* 1930.

Year.	In Silver Lead.		In Blister Copper.		Total.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	Ozs.	£	Ozs.	£	Ozs.	£
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	...	80,597	...	17,391	766,653	97,988
1927	640,575	75,135	101,207	11,889	741,782	87,024
1928	564,156	66,386	105,270	12,515	669,326	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
T'tal	5,646,823·55	900,114	1,645,256	282,456	8,056,632·55	1,182,570

TALC.

The output was 13·35 tons, valued at £53, compared with an output of 23 tons, valued at £45, for 1929.

RETURN showing Quantity and Value of Talc produced during the years 1928 *to* 1930 *inclusive.*

Year.	Quantity.	Value.
	Tons.	£
1928	32	96
1929	23	45
1230	13·35	53
Total	68·35	194

TIN.

The price for this metal further declined during the year, the average price for the 12 months being £141 19s. 1d., as against £263 18s. 10d. for 1929, a fall of over 47 per cent.

The output was 511·777 tons, valued at £56,068, as compared with 640·36 tons, valued at £130,014, for 1929.

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* 1930.

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
Total	137,998·956	£16,150,583

* Metallic Tin.

WOLFRAM.

The output was 112·6 tons, valued at £12,216, as compared with 151·86 tons, valued at £18,358, for the year 1929.

RETURN showing the Quantity and Value of Wolfram produced from 1899 *to* 1930 *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
Total	2264·262	£254,729

ZINC.

The output was 943 tons, valued at £19,322, as compared with 6997 tons, valued at £185,964, in 1929.

The General Superintendent, Electrolytic Zinc Company of Australasia Limited, reports:—

"All operations at Risdon continued on normal lines during 1930. A pleasing feature of the year's activities was a further advance in efficiency, reflected in both costs and output.

"The production of slab zinc for the year was 54,901 tons, compared with 51,872 tons for 1929, an increase of 3029 tons, or 5·85 per cent. This result was accomplished without any special plant additions, and is the reward of continued intensive study and research that has been given to our problem.

"In common with practically all other basic industries—and even to a more serious degree—the metal industry throughout the world has suffered very considerably during the past year from the gradual decline of prices to levels that are, for nearly all producers, quite unprofitable.

"The increase in the world stocks of unsold zinc is retarding the recovery of prices.

"Up to the end of June the increase in our stocks was not substantially out of proportion, but since then there has been a much more marked increase. The board of directors felt that the period for which this disability will persist could not be measured, and hence it was considered advisable to suspend construction work on the Risdon plant extensions until there is reasonable evidence of the capacity of the market to absorb the extra production that will result from its operation.

"During the period of falling metal prices and delayed realisation of products efforts have been progressively directed towards effecting economies wherever possible, and, with the object of meeting existing conditions, drastic reductions in the company's expenditure have been made throughout the whole organisation.

"Superphosphate and mixed fertiliser sales were 24,647 tons, a satisfactory increase over the figure for 1929.

"The increased use of fertilisers is due, in no small measure, to the activities of the State Agricultural Department, assisted by the various agricultural bureaux, and to successful results obtained by progressive pastoralists. All these features have undoubtedly created much wider interest in the top-dressing of pastures and in better farming methods generally in Tasmania. Wherever practicable we have continued to collaborate with the Department, and to assist in stimulating interest in these matters.

"*West Coast Division.*—The abnormally low metal prices prevailing during the latter half of the year, and the difficulty in selling the metal produced at Risdon, made it essential to restrict expenditure on the West Coast. Consequently work was suspended on the West Coast, for the most part, in October, 1930.

"Zeehan.—Productive operations at the Zeehan concentrating mill ceased at the end of January. The mill was then partly dismantled to admit of the transfer of machinery and equipment to Rosebery.

"The roasting-furnaces closed down shortly afterwards, when concentrate stocks were exhausted.

"Work was then started on the overhaul and modification of the roasting-furnaces, and the construction of two additional furnaces was commenced. This work was suspended on 17th October.

"Rosebery and Williamsford.—On the 17th October, 1930, work was suspended underground and on the surface at Rosebery, while at Williamsford operations were largely curtailed, a few miners being kept on essential underground work, and a small number of men engaged on the electrification of the Hercules haulage.

"Up to that time development work at both mines was pushed steadily ahead, and mill-construction was brought near to completion.

"During the year 4431 feet of development work was done at Rosebery Mine, and 3265 feet at Hercules Mine.

"The tonnages of ore mined were:—Rosebery, 25,881 tons; Hercules, 12,236 tons; total, 38,117 tons.

"The average number of men employed was:—On the surface, 245; underground, 92; total, 337."

RETURN showing the Quantity and Value of Zinc produced during the Years 1919 *to* 1930 *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
Total	32,911·69	£973,201

RETURN showing Value of Minerals and Metals raised in Tasmania from 1880 *to* 1930 *inclusive.*

Mineral or Metal.	Value.
	£
Asbestos	7105
Barytes	6933
Bismuth	23,527
Cadmium	20,914
Carbide	603,387
Cement	1,091,739
Coal	2,201,561
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)	5,841,563
Gold	7,677,358
Iron Ore	25,701
Iron Pyrites	93,916
Lead (from 1919)	1,473,613
Limestone	954,454
Nickel	33,117
Ochre	375
Osmiridium	571,148
Scheelite	112,468
Shale	19,106
Silver-Lead to 1918 (now shown as Silver and Lead)	6,429,291
Silver	1,182,570
Talc	194
Tin	16,151,783
Wolfram	254,729
Zinc	973,201
Unenumerated prior to 1894	31,988
Total	£60,270,877

STATISTICS OF PRODUCTION.

RETURN showing the Annual Value of Mineral Products for the State of Tasmania from 1880 *to* 1930.

Year	Value.	Year.	Value.
	£		£
1880	554,031	1906	2,257,147
1881	602,723	1907	2,277,159
1882	556,306	1908	1,650,027
1883	560,873	1909	1,574,995
1884	468,302	1910	1,432,193
1885	518,885	1911	1,349,497
1886	489,966	1912	1,493,502
1887	593,256	1913	1,415,700
1888	616,733	1914	1,007,038
1889	504,718	1915	1,225,575
1890	444,210	1916	1,521,050
1891	528,388	1917	1,582,322
1892	526,909	1918	1,597,694
1893	627,909	1919	1,301,090
1894	732,764	1920	1,421,104
1895	575,692	1921	822,851
1896	662,058	1922	1,013,415
1897	1,006,140	1923	1,219,456
1898	1,071,084	1924	1,496,804
1899	1,660,622	1925	1,700,861
1900	1,888,695	1926	1,808,844
1901	1,763,896	1927	1,621,027
1902	1,378,406	1928	1,593,828
1903	1,354,044	1929	1,790,653
1904	1,379,204	1930	1,270,114
1905	1,729,129	Unenumerated prior to 1894	31,988
			£60,270,877

STATISTICS OF MINING COMPANIES.

RETURN showing the Amounts paid in Dividends by Mining Companies during the Year ending 31*st December*, 1930.

Mines.	Dividends.
	£
Copper	51,198
Gold	...
Tin	...
Silver	...
Coal	6048
Total	£57,246

RETURN showing Total Number and Area of Leases and Licences issued during the Year ending 31*st December*, 1930.

Mineral.	Leases.	Sluiceheads.	Area.
			Acres.
Asbestos	1	...	80
Clay	1	...	5
Copper	2	...	120
Coal	7	...	2121
Dredging Claims	10	...	207
Gold	14	...	184
Minerals	22	...	1133
Molybdenum	1	...	80
Machinery Sites / Mining Easements	13	...	65
Osmiridium	2	...	20
Stone	1	...	40
Tin	66	...	2619
Water Rights and Dam Sites	36	184	20
Licences to search for Coal and Oil	2	...	900
Total	178	184	7594

RETURN showing the Total Area of Land and Number of Sluice-heads of Water applied for during the Year ending 31*st December*, 1930.

Mineral.	Number.	Sluiceheads.	Area.
			Acres.
Asbestos	2	...	160
Clay	1	...	1
Coal	11	...	2894
Gold	41	...	913
Limestone	2	...	80
Minerals	16	...	1903
Silver	1	...	7
Shale	6	...	245
Tin	67	...	2380
Machinery Sites	2	...	7
Mining Easements	5	...	10
Water Rights and Dam Sites	29	129	8
Licences to search for Coal or Oil	3	...	2212
Total	186	129	10,620

RETURN showing the Average Number of Persons engaged in Mining during the Years 1880 *to* 1930.

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

RETURN showing the Mining Companies registered during the Year ending 31*st December*, 1930.

Number of Companies.	Capital.
3	£15,500

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

RETURN showing the Average Number of Miners employed during the Year ending 31st December, 1930.

Division.	Number.
Northern and Southern	1365
North-Eastern	255
Eastern	502
North-Western	572
Western	1912
	4606

RETURN showing the Total Amount of Rents, Fees, &c., received by the Mines Department during the Year ended 31st December, 1930.

Head of Revenue.	Amount.
	£ s. d.
Rent of Auriferous and Mineral Lands	8,451 0 11
Fees, Auriferous and Mineral Lands	1,143 11 5
Survey Fees	960 5 7
Fees under the Explosives and Inflammable Liquids Act	1571 14 10
Total	£12,126 12 9

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 1930, inclusive.

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

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

RETURN showing the Number and Area of Leases held under the Mining Act, in force on 31st December, 1921 to 1930 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.	
	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.
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
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
For Gold	92	1894	127	2424	108	1687	91	1829	70	1340	42	870	38	749	40	830	36	746	40	830
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
Machinery Sites	34	152	31	123	30	124	26	115	27	112	25	150	21	110	29	169	25	171	18	117
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
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

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

	Average for **1919.**	Average for **1920.**	Average for **1921.**	Average for **1922.**	Average for **1923.**	Average for **1924.**	Average for **1925.**	Average for **1926.**	Average for **21927.**	Average for **1928.**	Average for **1929.**	Average for **1930.**
	£ 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	90 19 4	97 12 5	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
Lead—Soft Foreign: per ton	28 3 11	38 4 7	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
Spelter: per ton	42 5 3	45 4 6	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
Tin—Standard, spot: per ton	257 9 8	296 1 7	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
Silver—Standard, spot: per oz	s. d. 4 9 1/16	s. d. 5 19/16	s. d. 3 0·875	s. d. 2 10·4	s. d. 2 8·37	s. d. 2 9·97	s. d. 2 8	s. d. 2 4·2	s. d. 2 2·38	s. d. 2 2·15	s. d. 2 0·57	s. d. 1 5·66
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.			£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Osmiridium: per oz	23 14 0	38 7 7	24 10 6	28 6 7	27 10 4	...	...	11 13 4	21 16 5	25 9 0	22 18 1	17 0 9
Wolfram: per ton	262 10 0	157 12 9	65 7 6	70 0 0	65 0 0	...	...	70 0 0	61 10 0	104 5 0	144 5 0	105 0 0
Nickel: per ton	...	...	...	...	...	...	...	...	...	...	171 0 0	170 0 0

DRAFTING BRANCH.

The number of working plans in use and which are kept up to date is 189, as compared with 114 in 1925. Duplicates of these are kept in the Launceston Branch Office. Copies also of all plans of surveys received from surveyors are forwarded to Launceston, and from time to time these are bound in books, so that the Launceston public can rely upon obtaining the same information in regard to plans as that available in Hobart Office.

The following work has been carried out during the year:—

20 manuscript plans have been posted up to date for photolithography.
11 new working plans have been brought into use.
2 new compilations have been completed.
17 plans of underground surveys have been checked and examined in accordance with the provisions of the Mines and Works Regulation Act, 1915.
28 plans for consolidated leases, &c., have been drawn.
121 plans of surveys have been received and examined, and copies prepared and forwarded to Launceston Office.
137 instructions for survey have been issued.
410 plans drawn on mining leases.
208 tracings prepared.
134 lithos. corrected to date.
34 miscellaneous tracings and plans for the State Mining Engineer, Chief Inspector of Mines, and Chief Geologist prepared.

MINING MANAGERS' EXAMINATION.

No candidates applied to be examined, and no examination was held.

CONCLUSION.

Mainly through the low prices prevailing for all mining products, large numbers of miners were thrown out of employment, and the number of applications for sustenance allowance under the Aid to Mining Act, 1927, was far in excess of that for any previous year, causing a very considerable increase in the activities of the Department, and entailing a good deal of work after hours, and I desire to express my appreciation of the loyal assistance rendered by the whole staff during the year.

I have the honour to be,

Sir,

Your obedient servant,

W. A. PRETYMAN, Secretary for Mines.

The Honourable the Minister for Mines.

REPORT OF THE GOVERNMENT GEOLOGIST FOR YEAR 1930.

Hobart, 23rd April, 1931.

SIR,

I HAVE the honour to submit my report for the year ended 31st December, 1930.

Short Field Investigations.

The field work during the year consisted of a number of short trips for special examination of mineral deposits, mineral fields, underground water problems, &c. These were carried out at the request of individuals, companies, &c. In addition some time was spent in the field in connection with the systematic survey, while two conferences were attended on the mainland. The following list contains a complete statement of the field work performed:—

(1) Geological investigation of supposed oil-bearing sand at Dunalley.
(2) Tour of Rosebery district with G. Campbell Smith to initiate topographical survey.
(3) Visit to Smithton district in connection with the surveys being performed.
(4) Geological investigation of Mr. Tonks' property at Tea Tree for underground water.
(5) Geological investigation of certain of the mineral deposits at Adamsfield.
(6) Geological examination of limestone deposits at Karoola.
(7) Visit to Lefroy *re* survey. Also inspection of Wallis' prospect.
(8) Geological examination of prospect at Back River.
(9) Visit to Smithton *re* survey.
(10) Visit to Rosebery *re* survey.
(11) Geological examination of copper-nickel deposits with regard to boring campaign.
(12) Geological examination of limestone deposits at Karoola and Bangor.
(13) Geological examination of Tower Hill Gold Mine.
(14) Geological examination of Cheshire's Prospect, Mangana.
(15) Geological examination of Mr. R. A. Clive's property, Old Beach.
(16) Visit to Flinders Island, and investigation of—
  (*a*) Underground water problems at Wingaroo.
  (*b*) Underground water problems at Butter Factory.
  (*c*) Underground water problems at Mr. Cooper's, Emita.
  (*d*) Gold prospects, Blue Rocks.
(17) Geological examination of underground water problems on Miss Jamieson's property, Bellerive.

Short Reports.

The following reports were prepared in connection with the above and other field trips; for conferences; and other purposes:—

(1) Report on supposed occurrence of oil on Mrs. Tatlow's property at Mengha.
(2) Report on the bore-hole on the property of Mr. G. Burbury (Gaff's Hill).
(3) Report on proposed bore site on the property (Salt Pan) of Mr. S. Burbury.
(4) Notes on the Permo-Carboniferous system in Tasmania.
(5) Report on brown sand near Connelly's Creek, near Dunalley.
(6) Report on osmiridium-bearing ground on the Adamsfield township.
(7) Report on possibilities of obtaining underground water supplies on the property of Mr. L. Tonks, Tea Tree.
(8) Geological report on osmiridium-bearing ground on Adamsfield township.
(9) Report on the osmiridium "lode" at the head of Main Creek, Adamsfield.
(10) Report on the age and mineral characteristics of the granites of Tasmania.
(11) Evidences of arid climatic conditions in Tasmania.
(12) Metamorphic rocks in Tasmania.
(13) Report on Gondwana system in Tasmania.
(14) Geological report on the prospect of G. E. A. Triffett, New Norfolk.
(15) Report on Limestone at Karoola and Bangor.
(16) Report on the copper-nickel deposits of the Five-Mile district and the possibility of a boring campaign to test them.
(17) Geology of the Port Davey district.
(18) Report on the boring operations undertaken in connection with the Beaconsfield chromiferous iron ore deposits.
(19) Report on the Tower Hill Mine, Tower Hill.
(20) Report on the Cheshire's prospect at Richardson's Creek, Mangana.
(21) Report on the possibility of obtaining underground water supplies on the property of Mr. R. A. Clive, Old Beach.
(22) Tasmanian osmiridium and its marketing.
(23) Oil shale resources of Tasmania.

Systematic Geological Survey.

The initiation of the systematic geological and topographical survey was described in the report for 1929.

This work continued during the past year, and considerable progress was made. Early in the year three authorised surveyors were engaged to carry out the topographic triangulation, theodolite traverses, and level surveys.

Mr. K. Harrison was engaged for the Smithton district, G. Campbell Smith for the Rosebery district and A. Wilks for Lefroy.

The field geologists were distributed as follows:—Mr. F. Blake at Smithton and Mr. K. J. Finucane at Rosebery. The geologists carried out chain-and-compass surveys to fill in all the topographical and geographical details.

The position at the end of the year was that the field work was practically finished on the Smithton N.E. and S.E. quarter-sheets and the Rosebery S.W. quarter-sheet, while no geological work had been attempted at Lefroy.

Shortly after the commencement of the financial year the continuance of these surveys was discussed in view of the financial position of the State and the fact that no actual grant had been made by the Commonwealth Government for this work. As a result, it was arranged that the systematic surveys should not be continued, but at the same time sufficient work was to be carried out to complete the surveys already begun at Smithton and Rosebery.

It was anticipated that such work would be completed early in 1931 (the Smithton surveys have since been completed, except for a week's work by K. M. Harrison, and the Rosebery surveys will be complete by the end of April).

In the original scheme it was suggested that the office and drafting work could be carried out with the existing staff. This was found impracticable, and consequently Mr. T. Hewitt was loaned by the Hydro-Electric Department for the drafting, while the calculations, &c., were carried out by the cadet geologist and field assistant under my supervision. Mr. T. Hewitt was recalled in September.

The present position is that all field work has been practically completed on the two Smithton and one Rosebery quarter-sheets. The map of the Smithton N.E. quarter-sheet has been completed ready for printing, while that of the Smithton S.E. quarter-sheet is in course of preparation. All calculations have been completed for the Rosebery quarter-sheet, and drafting will proceed as soon as the above is completed. The report on the two Smithton quarter-sheets is partly written, and will soon be completed.

From the geological viewpoint the results have been excellent, and much greater than had ever been expected. This applies to both the Smithton and Rosebery districts, but more particularly to the latter. The results of the Rosebery survey have greatly altered the conceptions of the geological structure of the important West Coast mineral belt, and will have a considerable bearing upon the economic geology of that region. The application of the results to the Rosebery Mine have been so valuable that the Manager, Mr. N. E. Giblin, of the Electrolytic Zinc Company, has requested that the surveys be extended to include the Mount Read district.

Thus the topographical and systematic geological survey of the State will be stopped after being in operation for less than two years with a limited staff. This is particularly unfortunate in view of—

(1) The need of reliable topographical and geological maps;
(2) The time and thought that had been given to the organisation and establishment of the surveys, which after their recent creation were beginning to give efficient results; and
(3) The valuable results obtained in the short period of 20 months.

Routine and Other Duties.

During the year the routine duties of answering correspondence, interviewing visitors, &c., were carried out as usual. These were mainly concerned with information about mineral deposits, mines, publications, &c., in connection with the mining industry of the State.

In addition other duties were carried out, including—

(1) Attendance at Interstate Geological Conference in Brisbane.
(2) Attendance at Shale Oil Conference, Melbourne.
(3) Weighing and certifying to considerable quantities of osmiridium for sale overseas.
(4) Preparation of collections of rocks, minerals, &c., for despatch to institutions, &c.
(5) Attention to the rock, mineral, and other collections.
(6) Preparation of rock sections. The rock-sectioning plant was completed during the early part of the year, and thus the Geological Survey became possessed of this essential apparatus for modern geological survey work. Altogether 121 rock sections were prepared during the year.
(7) Co-operation with the State Mining Engineer as regards calculation of results of bore-holes, preparation of geological sections, &c.

Interpretation of the Geological Record of the State.

At the 1930 Interstate Geological Conference a recommendation was made as follows:—

"That this conference recommends that the Chief of each State Geological Survey, in preparing his annual report, set out therein—

(*a*) The latest official interpretation of the geological record of the State;
(*b*) The modifications therein of the preceding official statement; and
(*c*) The reasons for these modifications."

In accordance with this recommendation, and with the approval of the Secretary for Mines, the official interpretation of the geological record of the State is therefore included in the annual report for the first time.

Archæozoic.

No rocks assignable to this era are known to occur in the State.

Proterozoic.

Schistose rocks referable to this era are restricted to the western half of the island, and more particularly to the south-western part thereof. The most common rock types are quartz, quartz-mica, mica, graphite, and argillaceous schists, and smaller amounts of quartizitic conglomerates and magnesium limestones. All of these types have undoubtedly been derived from sedimentary rocks. The only igneous rocks referred to this era are certain amphibolites and garnet-zoisite-amphibolites. No subdivision has been made, except at Frenchman's Cap district, where L. K. Ward recognised an upper series of quartzites resting uncomfortably on the lower series of the above types.

The above rocks are referred to this era because they are much more highly metamorphosed than the oldest fossiliferous rocks (Cambrian slates and sandstones).

Palæozoic.

Cambrian.—Fossils described as Cambrian have been obtained from four localities, viz., Caroline Creek, Florentine River Valley, Hatfield Plains, and Arthur River. The containing rocks are dark slates and sandstones or quartzites (ironstained at Caroline Creek). The relations with adjacent series have not been established.

Ordovician.—Ordovician fossils have been discovered in two localities only, viz., the North-East Dundas tram, where grapholites occur in dark slates, and at Railton, where the limestone has yielded a few fossils which suggest a correlation with the Larapintine series of South Australia.

Cambro-Ordovician.—Between the Proterozoic schists and the basal Silurian series there exists a large thickness of sedimentary rocks, which occupy a considerable portion of the surface in North-Western, North-Eastern, and Southern Tasmania. At only one locality—Frankford—has there been observed a relationship between the base of these rocks and the Proterozoic schists, and here basal conglomerates are unconformable to the schists. The basal Silurian rocks overlie the Dundas and other series with a marked unconformity.

Apart from the few fossiliferous localities referred to above and yielding Cambrian and Ordovician fossils, the rocks appear unfossiliferous. The determination of the stratigraphy has proceeded only to the extent of the recognition of a few series, without any great amount of information as to their relations.

In Western Tasmania three series have been named, viz., Dundas, Read-Rosebery schists, and Porphyroid. The Dundas series of slates, breccias, cherts, quartizites, &c., is the most prominent series. It occurs also in north-western and southern districts, and is the most extensive, and apparently the most important, series in the Cambro-Ordovician system.

The Read-Rosebery schists are a thin series of schistose sedimentary rocks developed at Rosebery.

The Prophyroid series including pyroclastic sediments and acid lava flows. Plutonic and hypabyssal igneous rocks have also been referred to this series.

In the Rosebery district Loftus Hills reported that the Dundas, Read-Rosebery, and Porphyroid series were comformable, and in the above ascending order of succession. (Recent work rather suggests a different relation, and progress may enable this to be described in next year's statement.)

In North-Western Tasmania the Balfour series of slates, quartzites, and conglomerates has been referred to the Cambro-Ordovician system; but there is, however, a lithological resemblance to the Silurian rocks, though not fossiliferous.

In North-Eastern Tasmania only one series—the Mathinna slates and sandstones—has been recognised. It is a highly folded series, and bears a close lithological-structural resemblance to the Ordovician rocks of Victoria.

It has been compared with both the Balfour and the Dundas series, and it is probably the equivalent of the Dundas series.

Silurian.—The Silurian system is restricted to the western half of the State. It is generally fossiliferous, and has been divided into the following series in ascending order:—

(1) West Coast Range Conglomerate Series.—This is the basal series of the system, and consists of conglomerates, breccias, and sandstones or quartzites. It unconformably overlies the Dundas and other Cambro-Ordovician series.
(2) Tubicolar Sandstone or Quartizite Series.—This series conformably overlies the basal series, and consists of sandstones or quartzites, and also slates in smaller quantity. At Adamsfield its place is taken by a quartzite series with gasteropod fossils. In the Loddon Valley the upper part of this series has been called the "Discoidal series."
(3) Gordon River Limestone Series.—A thick bed or beds of limestone, with small amounts of slates, &c., conformably overlies the Tubicolar series. It is plentiful in Southern and Western Tasmania, and is slightly fossiliferous.
(4) Queen River Series.—This series conformably overlies the limestone, and consists of slates, quartzites, and sandstones (often very friable). It is fairly fossiliferous, and is particularly developed at Adamsfield, Queen River, Zeehan, Dundas, Heazlewood, and Middlesex.

Devonian.—Sedimentary rocks of this period have not been found, and the State was apparently a land surface. The next younger rocks—the Permo-Carboniferous—overlie the Lower Palæozoic rocks with an unconformity, so there was a period of diastrophism succeeding the Silurian. Igneous intrusions accompanied the diastrophism, and the granites, gabbros, and serpentines are assignable to this period, as well as the formation of many of the mineral deposits.

Permo-Carboniferous.—Whereas all the sedimentary rocks of earlier systems have been highly folded, those of this and later systems are either horizontal or only slightly tilted, and have been subject to epeirogenic movements only. The basal beds overlie the older rocks, up to and including the granites, with a marked unconformity.

The rock types and succession are generally similar to those of the same system in Eastern Australia.

At least five series have been recognised, but it is probable that local variations occur:

(1) Basal Series (Glacial).—The basal beds comprise morainal deposits and tillites in some localities, while in others it is a conglomerate or pebbly sandstone.

(2) Lower Marine Series.—The basal series passes upwards into siliceous mudstones, slates, sandstones, and limestones, all of which are highly fossiliferous and of marine origin.
(3) Greta Series.—In general, the marine conditions were succeeded by fresh-water ones, and shales and sandstones containing coal seams were formed. In northern districts marine conditions continued in some localities, and tasmanite shale was formed on the horizon of the coal-seam.
(4) Upper marine series.—This series includes white siliceous mudstones and sandstones, which are of marine origin, and become sparingly fossiliferous towards the top of the series.
(5) Tomago Series.—Another fresh-water series of shales and sandstones wth coal-seams is present at Barn Bluff and Preolenna.

Mesozoic.

Triassic.—Rocks of this system are restricted to Eastern Tasmania. The basal beds apparently succeed the Permo-Carboniferous conformity, but there is probably a disconformable relation. Four series have been recognised:

(1) Basal Grits.—These beds succeed the Permo-Carboniferous rocks, and consists of grits and pebbly sandstones.
(2) Ross Sandstone Series.—The basal grits pass up into sandstones, mudstones, and shales. Fossils are scarce, but leaves, fish, and amphibians have been found. Halite and epsonite indicate arid or sub-arid climatic conditions. The series resembles the Hawkesbury sandstones.
(3) Felspathic Sandstone Series.—Felspathic sandstones, sandstones, and mudstones succeed the Ross sandstones. Up to eight coal-seams occur, and all fossils are plant remains, so that fresh-water conditions prevailed. The series is lithologically identical with the Jurassic of Victoria, but on palæontological it is referred to as Upper Triassic (equivalent to the Ipswich of Queensland).
(4) Upper sandstone series.—At Mount Nicholas the felspathic sandstones are succeeded by sandstones resembling the Ross series, but at no other locality has this series escaped denudation.

Igneous Intrusions.—The Permo-Carboniferous and Triassic rocks have been block-faulted and intruded by dolerite (diabase) on a large scale, the faulting and intrusions being contemporaneous. The intrusions are in the form of large sills with transgressive bodies arising from the sills into the overlying strata. The intrusions are pre-Tertiary, and probably occurred at the close of the Triassic sedimentation, which would conform to similar dolerite intrusions in South Africa, &c.

Tertiary.

(1) *Marine Series.*—Small thicknesses of marine limestones, clays, &c., occur in far north-western districts. The rocks are highly fossiliferous, and have been referred to the Eocene or Miocene period.
(2) *Lower Tertiary Fresh-water Series.*—Fresh-water clays and sands occur at scattered localities throughout the State, the largest development being in the Launceston Tertiary basin. They contain seams of brown coal and fossil leaves and fruit. Generally they are overlain by basalt.
(3) *Tertiary Alkaline Igneous Rocks.*—The alkaline intrusive rocks of the Cygnet district are referred to this era, but their exact position in it is doubtful. They include alkali syenite porphyries, solvsbergite, &c.
(4) *Tertiary Basalt.*—In general, the Lower Tertiary sediments are covered by basalt flows ranging in thickness up to 300 feet. The normal types are basalt and olivine basalt, but at Sandy Bay, Shannon Tier, and Stanley nepheline basanite occurs.
(5) *Post-Basaltic Deposits.*—Small thicknesses of sands, gravels, &c., were deposited above the basalt.

Quarternary.

Pleistocene.—The Tasmanian glaciation is assigned to this period, so that the morainal and fluvio-glacial deposits referred to as Pleistocene.

The Mowbray swamp deposits, in which *Nototherium* remains have been found, are of this age from the evidence of the molluscs and ostracoda. On Flinders Island what appear to be Pleistocene marine deposits (sand, clays, and limestones) have a thickness up to 400 feet.

Recent.—The recent deposits include river gravels and alluvium raised beaches, &c.

Yours faithfully,

P. B. NYE, M.Sc., B.M.E.,
Government Geologist.

W. A. PRETYMAN, ESQ.,
Secretary for Mines, Hobart.

REPORT OF THE STATE MINING ENGINEER.

State Mining Engineer's Office,
Hobart, 6th May, 1931.

SIR,

I HAVE the honour to submit my report for the year ended 31st December, 1930.

The work performed consisted of numerous visits to the various mining fields of the State in connection with applications for aid to mining, examinations of properties, carrying out surveys for mineowners, tributors, and others, supervision of drilling operations, survey of bore sites, assisting mine operators with technical advice, supervision of mining work in connection with the Imperial Geophysical Experimental Survey, reporting on results obtained, Mount Cameron Water-race survey, &c. The following statement includes the work carried out under the various headings:—

Special Investigations.

Special investigations carried out included—

(1) Lignite deposits, Freshwater Point, West Tamar.
(2) Lignite deposits, White Hills district.
(3) Gold prospect, Inglis River.
(4) Dalcoath Tin Mine (Buckley's lease, Moina).
(5) Brown and Harper's, Gough and Harper's leases, Weldborough.
(6) Laffer Tin Mine, Weldborough.
(7) Gold-bearing areas, Portland and Gladstone districts.

A special report was furnished on the present position of the gold-mining industry in Tasmania.

Surveying work included—

(1) Extensions of workings carried out in the Old Boys' Mine, Mathinna.
(2) Silver Beauty Mine, Comstock, Zeehan.
(3) Mount Cameron Water-race No. 6 syphon, site.
(4) Bore sites—
    (*a*) Diamond drill.
    (*b*) Calyx drill.
(5) Tributing areas.

Record of Boring Operations.

Diamond Drill.

Drilling was continued at Muenna. One hole was bored on the western bank of the Flowerdale River to a depth of 407 feet. Coal measures were intersected at a depth of 180 feet; the coal bed was not located in this bore. The country-rock from the surface to a depth of 145 feet consisted of basaltic soil, clay, and boulders, and basalt rock, in that order; below that coal measures of mudstone and sandstone, in alternating beds, to a depth of 281 feet; the strata then consisted of mudstone, with embedded pebbles. The bore was completed on the 19th February, and the drill removed to Renison Bell, to carry out drilling in connection with the work of the Imperial Geophysical Experimental Survey.

Four vertical holes were bored at sites indicated by the officers of the I.G.E.S., on areas held under lease by the Dreadnought-Boulder Company and the Federal Syndicate.

The object of the work was to test the indications obtained by the officers of the I.G.E.S. The area being in hilly country, with steep slopes, made transport of the drilling plant a difficult matter.

Fourteen sites were marked for boring or other work designed to test the indications obtained. Owing to delay caused through the plant being occupied elsewhere, it was found impossible to complete the boring or other work desired by the Director of the I.G.E.S. in time for the final report of the latter. It was therefore desired that four sites specially selected should be tested, in order that the information would be available in due time. The sites marked as follows were bored to the depths indicated:—

(1)	ZV1 B19	47·3 feet.
(2)	ZV1 B20	114·5 feet.
(3)	Z111A7	91 feet.
(4)	ZVI B21	47 feet.

No. 4 Bore at site marked ZV1 21 was the only one in which an ore-body was located. The country-rock met with in the other three consisted of indurated pyritic slate and quartzite. The following are particulars of the sectional depths of No. 4 Bore:—

Surface to 8 feet: Dolomitic rock, with a little disseminated pyrrhotite.

8 feet to 12 feet: Dense pyrrhotite, with a little dolomite.

12 feet to 14 feet: Pyrrhotite less dense, less dolomite.

14 feet to 17 feet: Dense pyrrhotite, with a little quartz.

17 feet to 25 feet: Core softer, and in parts vesicular, very tough, with interlaced crystals of pyrites.

25 feet to 47 feet: Grey slate, with a little disseminated pyrites.

The pyritic ore as represented in the core obtained was of no economic value so far as the tin content is concerned, containing little more than a trace.

Drilling was completed on the 20th May, and the plant removed to Five-mile, near Zeehan, for the purpose of testing the indications obtained by the officers of the Imperial Geophysical Experimental Survey in connection with survey-pegs marked No. 4 and No. 5 (Bores No. 2 and No. 3).

No. 1 Bore was located 100 feet south of what is known as the Cuni shaft—angle of dip 45 degrees, direction west, depth 102 feet. It was designed to cut the southerly extension of the lode worked from shaft, but failed to intersect ore. Depth of bore, 102 feet.

No. 2 Bore was put down to a depth of 100 feet, at a point a few chains north of the Copper-Nickel Company's main shaft, to cut at depth the outcrop disclosed by trenching on site marked No. 4 by the officers of the I.G.E.S. Direction of bore north-west, angle of inclination 45 degrees, position 75 feet south-east of outcrop. An ore-body was intersected at a depth of 72 feet, and proved to be 3 feet thick, of soft sulphidic ore; very small section of core being made—assay, copper 2·6 per cent., nickel 6·01 per cent.

No. 3 Bore was designed to cut the outcrop exposed at No. 5 peg at a depth of 100 feet; the direction and inclination of drill being the same as at No. 2 Bore. No ore was intersected by this bore. Depth of bore, 107 feet.

No. 4 Bore was put down between Nos. 2 and 3, but at a point 150 feet south-east of the outcrop. Depth of bore, 156 feet. A solid body of sulphide ore, 3 feet thick, was intersected at a depth of 110 feet from surface. The average assay (three samples) of core was—copper, 5·5 per cent., nickel 10 per cent.

No. 5 Site.—This bore was put down to a depth of 149 feet on the northern boundary of Consolidated Lease No. 10,463-M, to test for copper-nickel ore on contact of the dyke-rock some distance south-west of the Cuni Mine shaft. At a depth of 134 feet a solid body of siderite was intersected, the drill passing into footwall country at 139 feet. The ore-body contained small quantities of galena and zinc blende.

No. 6 bore was put down 7 chains south of No. 5, on the western boundary of Consolidated Lease No. 10,575-M, to test an outcrop of galena exposed in a trench. At a depth of 111 feet a vein of galena, ½-inch in thickness, was passed through. The country-rock consisted of alternating bands of grey and black slate. The hole was drilled to a depth of 144 feet.

No. 7 bore was put down at a point 100 feet south of No. 1, to a depth of 156 feet, to further test the southerly extension of the copper-nickel ore in the Cuni shaft working. The bore intersected the line of lode without locating ore.

No. 8 bore was sited 100 feet north of No. 1, and drilled to a depth of 176 feet, for the purpose of testing the extension of the copper-nickel ore-body north of the Cuni Mine shaft. The contact of the country-rock was passed at a depth of 115 feet; the drill penetrated the footwall slate rock to the depth indicated. Drilling was commenced on the copper-nickel deposits on the 9th June and discontinued on 16th October.

West Comet Mine.—Drilling on the large ferro-manganese deposits which outcrop on the lease was commenced on the 5th November, and was in progress at the end of the term to which this report relates.

In the early days of the Dundas field a considerable quantity of high-grade galena was obtained from the underground workings on these deposits to water-level, or a little below the latter. The present work is designed to test them at deeper levels for the occurrence of marketable ores. Very large tonnages of metal-bearing flux, representing the outcrops of these ore-bodies, were used at the Tasmanian Smelting Company's works, Zeehan, up to the time they were finally closed.

Victoria Drill.

Beaconsfield District.—Boring was commenced in the Beaconsfield District on the 16th January, the first bore being put down near Watson's property, Beauty Point. This was drilled to a depth of 114 feet, being through 80 feet of Tertiary clays and 34 feet of marine sediments of the lower coal measure series. No indications of gold were met with. This bore was completed on the 23rd January. The drill was then removed to Beaconsfield to test the alluvial ground situated a short distance north-east of the old Tasmania mine workings. The site of bore is 466 feet, on a bearing of 98 degrees from what is known as the Ophir Mine shaft. It was drilled to a depth of 364 feet through sediments consisting of beds of clay alternating with bands of sand, grit, and sandstone rubble.

From the surface to 81 feet the proportion of gold ranged from ½-grain to 11·78 grains per cubic yard, the average being slightly under 4 grains per cubic yard. The lower section of the bore carried little more than a trace of gold to the bedrock of soft sandstone. The gold present in all samples tested was in a very fine state of division. A second bore was put down to test the deposit a little further south, at a site in Shaw-street, a short distance west of Weld-street. This bore was drilled to a depth of 292 feet in similar material to that passed through in the previous one; the gold present was appreciably less. Drilling at Beaconsfield was discontinued on the 1st April, and the plant removed to Herrick.

Moorina District.

Boring was commenced on the Weld Deep Alluvial Tin Lead on the 12th April. A series of nine bore-holes was put across the lead a few chains northerly of that portion of it being worked by the New Moorina Company to a depth of 80 feet. The work proved the drift to range from 140 feet to 200 feet in depth, the deposit consisting of fine residual drifts derived from granitic rock-formations. The bores were spaced at fairly regular distances, covering a width of 1300 feet. The work proved the drifts to contain an even distribution of tin oxide of comparatively fine grain size. It also proved that the lower sections of the drifts did not contain an appreciable higher proportion of tin than the face being worked by the New Moorina Company; the average would not exceed above 4 oz. per cubic yard. Some sections in irregular distribution returned up to 8 oz. and over per cubic yard. The drifts, where tested, rest on an even bedrock of granite. A second series of four bores was put down on the lead about 30 chains northerly of those described. The depth of these bores to granite bedrock is 175 feet, 198 feet, 270 feet, and 286 feet respectively; the drift material being similar to that referred to above excepting in the lower portion of the third bore, where heavier drift was encountered. The proportion of tin oxide present was slightly less than those further south on the lead.

Drilling work at Moorina was completed on the 21st November, and the plant removed to Branxholm, to test the Ringarooma Arba leads, which work was in progress at the end of the term to which this report relates.

Aid to Mining.

A very large number of applications for assistance under the provisions of the Aid to Mining Act, 1927, were dealt with, involving many visits to most of the mining districts in the State, for the purpose of investigating the properties in connection therewith, and furnishing reports and recommendations thereon.

The slump in the base metal market and silver was responsible for the closing of a number of the producing mines, causing a considerable amount of unemployment in the mining communities. With no prospect of other avenues of employment offering, many of those thus rendered idle turned their attention to working claims for themselves or to investigating old fields, or unexplored and partly explored mineral bearing areas, with the hope of locating payable deposits, particularly of gold and osmiridium.

In a number of instances encouraging prospects have been met with, and prospectors have been able to carry on productive work as a result of their investigations, made possible through the provisions of sustenance grants. Such cases apply to practically all districts where such grants have been made.

Zeehan-Dundas District.

A limited amount of productive and developmental work has been carried out on the Zeehan field, and in a number of instances encouraging prospects have been obtained in shallow workings. Amongst these may be mentioned the discovery north of the old Western Mine workings by J. McDermott and C. Ledger. The lode-formation is somewhat irregular, and carries veins up to several inches thick of high-grade galena. The facilities for proving the lode by means of tunnel workings are favourable. It is situated in one of the most favourable areas on the field for the occurrence of high-grade ore. This discovery has lead to attention being given to adjoining areas.

G. Mulrennan and party are developing a lode-formation in old workings north of the old Spray Mine. The prospects are promising for a considerable yield of galena.

In South Zeehan area a number of men are employed in the development of a recent discovery near the old Nubeena Mine, where a promising shoot of ore was located, and which is being developed by means of a tunnel.

Development work at the Silver Beauty Mine, Comstock, Mineral Lease 9892-M, is proceeding on the level 64 feet below the tunnel workings, where a considerable quantity of high-grade galena was mined. In order to facilitate the extraction of the ore below the tunnel level the present work is being undertaken. Th prospcts of obtaining a considerable quantity of marketable ore between the levels referred to are promising. In the adjacent districts of South Heemskirk, North Heemskirk, Dundas, and North Dundas a good deal of investigation is being made. At the lastnamed some promising discoveries have been made of deposits of fahl ore and galena, which, with development and a return to normal market prices for lead and silver, have every promise of being of considerable economic value.

Waratah District.

Encouraging reports have been received from prospectors investigating the country between Mount Ramsay and Meredith Range of the alluvial tin prospects obtained in the vicinity of the tributary streams of the Wilson River. This belt of country is served by the recently constructed Parsons' Hood track. The low price for tin, however, is discouraging the exploitation of the field. A good deal of attention has been given to the Savage River and Whyte River districts in the search for gold deposits. Encouraging reports have been received concerning the prospects of a discovery made on the latter which is under investigation. The Arthur River district has been subject to a good deal of attention by prospectors, but no discovery of importance has been recorded.

The North-Eastern Districts.

On the gold-bearing country north of Alberton some gold-bearing reefs of promising character have been discovered. Developmental work is proceeding with a view to having trial crushings made.

Assistance has been rendered to a number of miners in this district. It is probable that in view of preparations being made productive work will be commenced during the ensuing year by several parties of miners.

In every known mineral area in the district a vigorous search has been made for payable deposits of gold and tin, particularly in the vicinity of Mount Horror and Lisle Goldfield, also at Branxholm and Bradshaw's Creek. Although a number of finds have been reported, nothing of an extensive character is known to have been located.

Mount Cameron Water-Race.

A survey was made of No. 6 Syhpon site, and a report furnished thereon in connection with restoring the syphon and the areas of alluvial ground it is designed to serve. An examination and report was made on alluvial ground in the vicinity of the Echo Dam and the proposed extension of the race thereto from Native Lass Plains, Gladstone.

Yours obediently,

J. B. SCOTT, State Mining Engineer.

W. A. PRETYMAN, Esq.,
Secretary for Mines, Hobart.

REPORT OF THE GOVERNMENT CHEMIST AND ASSAYER.

Mines Department Laboratory,
Launceston, 25th March, 1931.

SIR,

I HAVE the honour to submit my report dealing with the work of the Mines Department Laboratory for the year 1930.

During the period under review 9000 estimations have been made for the Department and the public. In addition several thousands of qualitative tests have also been made. The number of samples (2797) received for the period constitutes a record.

The work during the year included complete analyses of ores, rocks, alloys, coal, cement, &c. Assays have been made for gold, silver, tin, copper, lead, antimony, bismuth, tungsten, nickel, cobalt, zinc, barium, manganese, strontium, calcium, iron, aluminium, chromium, osmium, carbon, iridium, rhodium, platinum, magnesium, tantalum, arsenic, molybdenum, vanadium, &c.; distillation tests of shale; examination of samples for oil; analyses of water; analyses of cements, kaolins; fusion tests of refractory clays and kaolins; examination and tests of titaniferous sands; examination and tests of asphaltum, resins, &c.; examination and tests by flotation on various ores.

During the year Mr. C. J. Penman was appointed to the vacant position of Junior Chemist.

I desire to place on record my appreciation of the excellent work carried out by the officers of this branch of the Department.

I have, &c.,

L. H. BATH,
Government Chemist and Assayer.

W. A. PRETYMAN, Esq., Secretary for Mines, Hobart.

REPORT OF THE CHIEF INSPECTOR OF MINES.

Mines Department,
Hobart, 28th April, 1931.

SIR,

I HAVE the honour to submit my annual report for the year 1930 in connection with the inspection of mines and the administration of the Mines and Works Regulation Act, 1915.

Tables are attached showing—

(1) The number of persons killed or injured in or about mines, works, and quarries in Tasmania.
(2) The rate per 1000 killed and injured in the different divisions.
(3) A graph dealing with the occurrence of fatal accidents from the year 1892 to the end of the year 1930.

The average number of persons employed for the year was 4606, being a reduction of 380 compared with the year 1929.

Accidents.—The total number of accidents reported for the year was 55, being a decrease of four compared with the year 1929.

The 55 accidents caused injury to 56 persons, which was a decrease of 16 compared with the previous year. The fatal accidents were four, which was a decrease of 13; and the non-fatal accidents were 52, being a reduction of three compared with the year 1929.

The rate per 1000 persons employed killed and injured was 12·158, compared with 14·440 for the previous year. The rate per 1000 persons employed who received fatal injuries was 0·868, compared with 3·409 for the previous year. The rate per 1000 persons employed who received injuries necessitating absence from work for more than 14 days was 11·289, compared with 11·031 for the previous year.

The four fatal accidents were caused as follows:—

(1) A trucker placed a truck in a properly constructed tippler at a main ore pass; by some unknown means he was carried over the tippler, when it rotated and fell down the pass, a distance of about 100 feet. Death was instantaneous.

(2) A quarryman was assisting to bore a hole at the floor of the face, when a fall of ground occurred from near the top of the quarry-face which caused fatal injury to one of the men.

(3) Two miners were employed in a stope, cleaning up the bottom to stand a set of timber, when a fall of ground occurred from the hanging-wall which killed both men instantaneously.

Of the 52 serious accidents, 22 occurred on the surface and 33 underground. The injuries in 13 cases were such as to cause fracture or permanent injury; in the remaining cases the injury was such as to cause absence from work for a period of 14 days. Three accidents were due to explosions, two to premature explosions, and one to striking a charge in the bottom of a winze with a pick. Work had been discontinued in the winze for some time, and the existence of a miss-hole was unknown. In the case of the premature explosion, investigations failed to locate any defect in the explosives or fuse.

Prosecutions.—There were five prosecutions for breaches of the Act and regulations during the year. Three cases were for careless use of explosives, one for failing to protect an abandoned shaft, and one for riding in a cage with tools.

Convictions and fines were obtained in all of the cases.

Electrolytic Zinc Company, Risdon.—The company operated continuously during the year, and produced 53,958 tons of zinc, valued at £1,015,618, and 224·1939 tons of cadmium, valued at £76,275, from ore other than produced in the State.

Catamaran Coal Company produced 1757 tons, valued at £1444, during the first six months of the year, and then ceased operations owing to the want of capital.

National Portland Cement Company produced 466 tons, valued at £2330, and ceased operations. The plant has been sold, and is being removed.

Australian Commonwealth Carbide Company produced 3297 tons, valued at £51,437, and in addition has supplied limestone to the Electrolytic Zinc Company.

Quarries.—The bluestone quarries have worked continuously during the year, but the quarries connected with brickworks were again only worked intermittently.

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

I have, &c.,

J. O. HUDSON,
Chief Inspector of Mines.

W. A. PRETYMAN, Esq.,
Secretary for Mines, Hobart.

TABLE showing Rate per Thousand Killed and Injured in different Divisions for the Year 1930.

Division.	Average Number of Men Employed.	Number of Accidents.	Number of Persons		Total Number Killed & Injured.	Average per 1000 Killed and Injured.	Average per 1000	
			Killed.	Injured.			Killed.	Injured.
Northern and Southern	1365	13	1	12	13	9·532	0·732	8·791
North-Eastern	255	...	...	...	...	...	...	...
Eastern	502	5	...	5	5	9·960	...	9·960
North-Western	572	10	...	10	10	17·465	...	17·482
Western	1912	27	3	25	28	14·644	1·569	13·075
Total	4606	55	4	52	56	12·158	0·868	11·289

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.
Mt. Lyell	1322	19	3	17	20	15·127	2·268	12·859
Zeehan, &c.	590	8	...	8	8	11·866	...	13·559
Total	1912	27	3	25	28	14·644	1·569	13·075

COMPARATIVE Table of Statistics of Accidents in and about the Mines of Tasmania from 1st July, 1892, to 31st December, 1930.

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

* Mt. Lyell disaster.

REPORT OF THE CHIEF INSPECTOR OF MAGAZINES AND EXPLOSIVES.

Mines Department,
Hobart, 13th May, 1931.

SIR,

I HAVE the honour to submit my annual report in connection with the administration of the Explosives and Inflammable Liquids Acts for the year 1930.

The imports of explosives were larger than for the preceding year, being—

	lb.
Monobel	20,750
Gelignite	422,650
Blasting gelatine	2,500
Ligdyn	36,500
Gelatine dynamite	10,000
Powder	23,520
Detonators	365,000

The quality of the explosives imported was very satisfactory, and during the cold months no complaints were received of excessive freezing, which had been the case during the previous winter. The improvement is attributed to the use of explosives which are not so subject to freezing as those previously used.

Only a very small quantity of explosives was found defective, and was destroyed. In all cases the defect was due to want of proper storage. Owing to the number of miss-holes in another colliery it was deemed advisable to discontinue the use of lead-azide detonators. The cause of the defect is being carefully examined, but to date no cause has been found which would account for the defect, and one is forced to the conclusion that it is due to manipulation, as the defect is not found in other mines where the natural conditions are adverse, and where a considerably larger number of detonators is used.

Two accidents caused by explosions occurred during the year. In one case miners were cleaning up the bottom of a winze which had been fired five weeks previously. The miner in the winze struck explosives with his pick. In the other case a miner was lighting four shots, when one shot exploded prematurely, which caused slight injury. The occurrence of the accident could not be determined. The fuse, on being tested, was found to be in good condition.

Fourteen prosecutions were instituted during the year—five under the Explosives Act and nine under the Inflam-

mable Liquids Act. Convictions were obtained in twelve cases; one case was dismissed, and the other adjourned *sine die*.

New regulations under the Inflammable Liquids Act came into force in April. These regulations were necessary to meet the altered conditions by bulk and drum storage. The regulations have worked smoothly, and have given general satisfaction.

During the year there were four fires which could be attributed to inflammable liquid; in each case the cause was due to insufficient care on the part of individuals.

Revenue.

Explosives and Inflammable Liquids Acts—Collections, 1930 (1st January to 31st December).

		£	s.	d.
Magazine licences	(119)	119	0	0
Permits to sell explosives	(485)	121	2	6
Permits to convey explosives	(93)	23	5	0
Permits to import explosives	(21)	42	0	0
Permits to sell fireworks only	(112)	14	0	0
Licences for stores	(443)	728	10	0
Registration of premises	(337)	84	7	6
Permits to unload ships	(30)	157	10	0
Inspection of ships	(10)	52	10	0
Permits to import	(6)	0	17	6
Increased quantities	(11)	12	15	0
Transfer fees	(5)	1	5	0
Amendment fees	(13)	3	5	0
Regulations	(1)	0	1	0
Total	(1686)	£1,360	8	6
Magazine rents		211	6	4
		£1,571	14	10

I have, &c.,

J. O. HUDSON,
Chief Inspector of Explosives.

W. A. PRETYMAN, Esq.,
Secretary for Mines, Hobart.

REPORTS OF INSPECTORS OF MINES.

INSPECTOR H. A. VAUDEAU (Burnie) reports:—

I have the honour to submit my annual report for the year 1930. As it is desired by the Hon. the Minister for Mines that the report be curtailed considerably, much of the matter usually reported has been omitted.

The average number of persons engaged was 1048; an average of 572 in the North-Western Division, 475 in my portion of the Western Division, and an average of three, during the last six months, in my portion of the Northern Division. Probably during the last portion of the term under review there were many men back in the bush, prospecting and winning gold and osmiridium, of whom I had no knowledge. During the first quarter there was an average of 1166 persons employed, during the last quarter 776.

Accidents.—Reports, as required by Section 26 of the Mines and Works Regulation Act, 1915, as they have arisen have been sent forward to head office. Eighteen accidents have been registered, six having occurred underground and 12 on the surface. Seven of the latter occurred during and owing to new construction work at a concentrating-mill and one "works." With the exception of two, all the men have been able to return to work. One of these was passing a truck of sawn timber, when some of it fell upon him, causing injuries to both arms and legs. His legs are still far from well. The other was picking up some ground in the bottom of a winze, when he evidently dug into some gelignite, which exploded, causing injuries to his face and chest. At the end of the year he had not been able to resume work owing to an injury of one of his eyes.

Ventilation.—At one mine conditions have been far from satisfactory, at different periods, when I have been inspecting. At other places a ready response has been given and conditions improved, in most instances, immediately.

Settlement of Grounds.—Nothing of a serious nature occurred during the year. At two mines, owing to structural weakness and method of working, some ground settled off, but caused no inconvenience, and was mined by the usual methods adopted at these mines. At another mine a big settlement, that happened years previously, was attacked, and at the end of the year most of it had been worked out. It caused some trouble for a little while, but at the present time it looks as if no further trouble will be experienced. Generally these places are known, and provision made to cope with them.

Change-houses, Shelter-sheds, and Crib Places.—As usual, one is always endeavouring to get these made and kept up to the requirements. In most instances conditions are, on request, made reasonably satisfactory, even if not so when one is inspecting.

Magazines and Explosives.—Considerable attention has been given to the safe handling and storage of explosives at the various mines, works, and quarries that come under the Act; supervision being given to the unloading and forwarding at and from the various ports in my district. Legal action was taken against two persons, who were found guilty and fined. Very little high explosive has had to be condemned during the term, and I have heard fewer complaints than usual.

Fuse.—This has been, as far as I know, satisfactory.

Detonators.—I have heard of a few of the new type giving trouble early in the year, but have not heard of a complaint for along time now. From inquiries made they appear to be satisfactory.

Incline Haulage, Machinery, Ropes, &c.—As required under the Act, the ropes on all main shafts have been cut and reshod, and found in all instances but one to be satisfactory. The unsatisfactory rope was replaced without my asking for it. On two occasions cages were asked to be repaired, shoes having become loose and safety catches not being satisfactory. These received attention. Rope on incline haulage received attention as required. Machinery, generally was satisfactory.

Electrical Wiring Underground.—This is not satisfactory in three mines. The matter was referred to the Machinery Department, but up to the end of the year had not received attention.

Health and Sanitation.—The Workers' (Occupational Diseases) Relief Fund Act, 1928-29, having come into force, it has brought to light a few cases in this district, five men receiving compensation. Two of these men went on the fund from a mine in which I have been striving for years to get reasonable conditions. If the same conditions continue to exist as I have seen off and on here during my visits of inspection, many more will take advantage of it, unless my judgment is faulty.

I am grieved to have to state that I still see indications that lead me to believe that in some instances, more particularly so in one works, men are not using the appliances supplied to them to allay the dust and protect them from its ill effect; but care is taken that I do not get sufficient evidence to take legal action. At one works the change over from "dry" to "wet" method was made, but unfortunately there has not been the decided improvement that the management considered there would be, in many departments, concerning "dusty" conditions.

I am doing my best to persuade men to use the appliances, and in some instances, I believe, have been successful.

Inflammable Liquids Act.—The new regulations recently brought into force have given rise to a considerable amount of work. In most instances, when what was needed was asked for, there was a ready response; in others, when they understood it was either comply or face legal action, they made good. Seven persons were

proceeded against. Two were found guilty and fined, three cases were dismissed, and two adjourned *sine die*—the latter people having made good.

General.—The various mines, works, and quarries in my district which are under the provisions of the Mines and Works Regulation Act, 1915, have been regularly inspected as time allowed, and according to the importance of the work being carried out. To all who have assisted me to obtain reasonable conditions for men to work under I render my hearty thanks, and to the workers who also assisted me in my work I am grateful.

Owing to the fall in the price of metals and the difficulties of the mines keeping on. I have not pushed for better conditions, as I might otherwise have done. Still, there is a limit, and one really knows that it is only foolishness to think that it pays to have men working under poor conditions.

Miscellaneous.—In addition to duties carried out under the above mentioned Acts, examinations of five mines were carried out as required under the Aid to Mining Act, and reports furnished as desired.

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

I have the honour to furnish the following report for the year ended 31st December, 1930:—

Production.—Coal-mining was appreciably active, the output advancing to 134,761 tons. This output was 14,414·5 tons in excess of that for the previous year, and constituted a record in the marketing of coals from the East Coast series. The production was derived from seven collieries, of which the Cornwall, Mount Nicholas, and Jubilee Mines were the principal producers.

The total output of metallic tin was 416·9 tons, valued at £56,402·8, as against 452·87 tons, valued at £92,989·6, produced during the previous year. Production was adversely affected by a further decline in market values, but despite this an appreciable amount of interest was displayed in exploring the economic possibilities of lode and alluvial occurrences throughout the inspection division.

Principally as the result of a cessation of productive operations at the Golden Gate Mine, reduced activity in regard to the retreatment of residues on the old battery site at Beaconsfield, and a falling off in the output of alluvial gold from the Lisle basin, the production of gold receded to 386·85 oz., valued at £1643·55. Economic conditions, however, created greater interest in gold-mining; numerous parties being engaged in prospecting for new lodes and alluvials throughout the entire auriferous series of the division, and an unusual amount of attention being given to a resumption of exploratory, developmental, and productive operations at previously abandoned mines and areas.

Of wolfram, 112·5 tons, valued at £12,208·15, were marketed from operations at the Storey's Creek Mine.

The average number of men engaged in mining and metallurgical operations was 795.

Accidents.—Five accidents, involving non-fatal injuries to a like number of persons, were registered under the provisions of Section 26 of the Mines and Works Regulation Act. Four occurred underground, one happened on the surface, and all were associated with operations at the collieries. Only in the case of the surface accident was the injury of a grave nature, and even in this instance the injured person was able to resume normal duties.

There were no uncontrolled settlements of ground. Extensive roof movements developed in two collieries, but these were due more to natural strata conditions than to the applied methods of mining. Temporary disabilities were experienced, but productive operations were not disrupted, and complete control of the weaknesses was maintained.

Health and Sanitation.—Matters governing health and sanitation were not slighted. The formation of excessive atmospheric dust at one quarry and a colliery involved special consideration, and measures for suppressing the nuisance had not been finalised at the close of the year. Pernicious conditions of smoke and fumes from blasting operations were prevalent at three collieries and two metalliferous mines, and innovations in regard to ventilation and the control of blasting were necessary. The thermetrical requirement of the Mines and Works Regulation Act were not exceeded in the metalliferous mines and collieries. Improved latrine arrangements were effected in the principal coal mines, with beneficial results.

Machinery.—Customary attention was given to the protection and safety of the machinery at the mines and works. One winding-rope and two windlass-ropes were condemned owing to defects located on inspection.

Explosives.—Regular examinations were made of the nitro-compounds used, but only small isolated quantities were found to be defective and precluded from use on account of deterioration due to storage conditions. Observations were continued in regard to the behaviour of the lead-azide detonators to finally determine their reliability. Objections were recorded at two collieries, and the matter is being kept under surveillance. No complaint was received concerning the quality of the fuse used, and official tests gave regular results.

One accident occurred during blasting operations, but this had no connection with the quality of the explosives used.

Inflammable Liquids.—The establishment of comprehensive regulations under the Inflammable Liquids Act provided additional factors for safety and the avoidance of fire-risk during transportation, handling, and storage of inflammable liquids. Better control of new practices, installations, and conditions resulted.

Two outbreaks of fire were recorded. One was directly connected with the placing of an unapproved light within the influence of vapours volatilising from mineral spirit being withdrawn from an 8-gallon container. In the second case a garage was destroyed, and although a 44-gallon drum, containing about 36 gallons of petrol, was stored in the building the evidence was insufficient to attribute the cause of the fire to the improper keeping of petrol.

Prosecutions.—The owner of a mineral lease was proceeded against for failing to keep a disused shaft fenced or covered or filled in, as required by Section 67 of the Mines and Works Regulation Act. The defendant was convicted, fined £3, and ordered to pay costs and witness' expenses amounting to £4.

General.—The usual care was devoted to the production and maintenance of safe working conditions at the coal and metalliferous mines. In addition to prescribing measures for a correction of defects in the lesser details of mining practices, it was necessary to condemn the entire shaft and ladderway arrangements at one mine, to record definite exception to the method of mining being pursued at a colliery, to object to the mode of driving a dip-tunnel on a coal area, to countermand the system of hydraulicking being applied to the deep face of an alluvial workings, to order the elimination of practices which were incurring a grave risk of fire in a coal mine, and to require effectual protection of disused shafts in different parts of the inspection division.

INSPECTOR J. J. ANDREW (Queenstown) reports:—

I have the honour to submit the following brief report upon the inspection work carried out in the Queenstown-Zeehan area for the year ended 31st December, 1930.

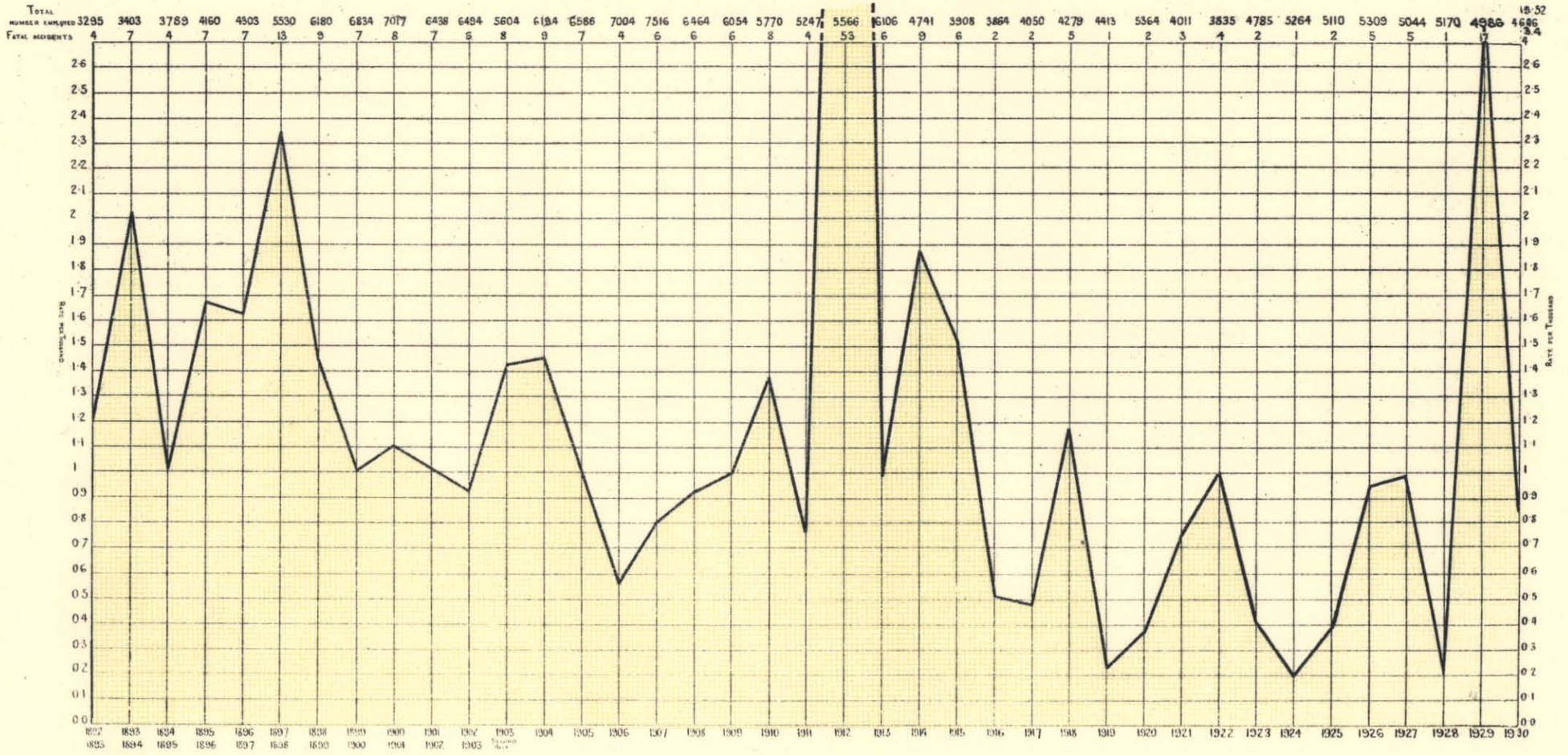
Number of Men Employed.—The average number of men employed during the year was as follows:—Queenstown, 1323; Zeehan, 113; total, 1436.

Accidents.—During the year 20 accidents were registered in this division: three fatal and 17 non-fatal. Of the three regrettable fatal accidents, one occurred at the North Lyell Mine and two at the Lyell Comstock Mine. At the North Lyell Mine an experienced miner at the "tipplers" was tipping the trucks as they were run on to the tippler by the truckers. By some unknown means he apparently went over the top of the tippler and down the ore-pass, receiving fatal injuries. In December two men were killed at the Lyell Comstock Mine by a fall of rock. Both men were engaged standing a set of timber, closing up a ground floor stope, preparatory to filling, and whilst the men were in a stooping position a wedge-shaped piece of mullock left the hanging-wall without warning, killing both men. It was estimated that approximately 10 tons of rock fell. This unfortunate accident proves the very treacherous nature of the schistose walls, where the "heads" are lying at irregular angles on a greasy wall. More than ordinary care is always necessary when working in this class of ground.

Of the non-fatal accidents underground: A miner fired four holes, and one exploded prematurely, causing laceration of the man's left arm, thigh, chest, and face. On making inquiry into the accident I found that the man had cut off 2 feet of fuse to allow the leading hole to go first; this left only 2 feet of fuse. Evidently the other holes did not "spit" promptly, and the hole with the short fuse exploded before he left the face. This accident shows the foolishness of cutting a fuse.

Diagram showing the ratio of Fatal Accidents in Mines in Tasmania

Rate per 1000 men employed



5 cm

A miner at North Lyell Mine was retreating from a fall of rock, when he slipped, and a piece of sharp quartzite rock struck his left leg, cutting it off just above the ankle. The remaining accidents were not so serious, and were of a miscellaneous nature.

There were no accidents in the Zeehan area during the year.

Ventilation.—This important factor in regard to mining conditions has received considerable attention. Ventilation generally has been satisfactory.

Health and Sanitation.—Attention has been given regularly, and any irregularities have been corrected.

Reduction and Smelting Works.—Attention has been given the surface workings. An objectionable dry crushing plant has been made satisfactory by suction—fans drawing the dust clear away from the plant. More use of water on the floors of smelting-works and conveyor-belts has been requested; and this is being carried out, making for better conditions.

Quarries.—Periodical inspection has been made of the quarries, and reasonable precautions have been taken in regard to safety.

Prosecutions.—One man was proceeded against for riding in a cage with tools. He was fined (with costs) £2 6s. 6d. Another man was charged with careless handling of explosives, and was fined (with costs) £1 6s. 6d.

Aid to Mining.—Supervision has been given to work carried out under this Act in the Zeehan district. This work has been carried out in conjunction with inspection duties.

Dust Estimations have been carried out, and, where the counts were high, better provision made for allaying the dust.

Explosives and Inflammable Liquids.—Periodical examinations of magazines and petrol depots have been carried out. Conditions generally are satisfactory. Fuse has been tested regularly. No complaints have been received in regard to detonators.

Workers' (Occupational Diseases) Relief Fund Act.—During the year attention has been given to arranging in detail for the examination of the men under the provisions of this Act. A total of 428 men were examined by the local doctors, and the result of the examinations forwarded to the board in Hobart.

Summary of Mining Activities.—Mount Lyell Mining and Railway Company Limited.—A steady progressive policy has been successfully carried out by this company during the year under review. The output of ore has been increased, and much development and exploratory work accomplished, particularly at the Tharsis, where a large tonnage of low-grade ore, occurring in schist of a soft nature, has been developed. This large body of ore will probably be an important factor in future operations of the company, and it is gratifying to know that this ore can be profitably treated. The Lyell Comstock Mine is being opened up on sound lines, and will, no doubt, materially increase the output of ore. An extension has been added to the refinery, while preparations are being made for a new crusher section at the flotation plant. The new hydro-electric power plant below Lake Margaret power-station will probably be completed during the current year. Although the price of copper dropped considerably during the latter six months of the year, the number of men employed by the Mount Lyell Company showed a material increase.

Zeehan Area.—Owing to the very low prices ruling for lead and silver, mining activities decreased considerably in Zeehan. Considerable prospecting work was carried out, and several good parcels of high-grade ore sold. The North Zeehan area is worthy of more prospecting, and geologically is favourable for the deposition of high-grade ore. I would like to see the diamond-drill test this area after completing the drilling at Dundas. The Government is giving considerable assistance to prospectors and miners in working their properties, and it is hoped something of value will be discovered which will provide work for some of the unemployed.

Value of Output from Queenstown Zeehan District.—The estimated production and gross value of the output of metallic minerals, based on average quarterly prices of metals for the year ended 31st December, 1930, are as follows:—

Output:—			Value.
			£
Copper (tons)	9,940	....	620,528
Gold (oz.)	3,794	....	16,118
Silver (oz.)	203,868	....	16,236
Lead (tons)	221	....	3,992
Nickel (tons)	117	....	1,999
Tin (tons)	3	....	493
			£659,366

The gross value of the output shows a decrease of £142,998 below last year's production. This is solely due to the abnormally low prices of metals.

REPORT OF THE MOUNT CAMERON WATER-RACE BOARD.

Gladstone, 4th March. 1931.

SIR,

WE have the honour to submit our report for the year ended 31st December, 1930.

Race.

The main race is in good condition. A vigorous growth of weed at Bald Hill, between Little Mussel Roe River and Old Chum Creek, impeded the flow of water to such an extent that not more than 25 heads were coming through, and we deemed it advisable to have two men put on for a fortnight in November last to assist the channel-keepers to clean it out.

This, at a cost of £13 4s. 6d., proved successful, and the full flow was restored.

Early in November Messrs. F. and J. Floyd, who had found payable tin about 2 miles beyond the termination of the race, applied to have the race extended for 2 miles, and offered to carry out the work for half wages, but the Board, acting upon the recommendation of the State Mining Engineer, agreed to allow them 3s. per chain, and the work was duly carried out under the supervision of the Manager; and the water was through at the end of December to the Old Echo Dam, which has been repaired, and the night water is now flowing into it.

Flumings and Syphons.

Since the restoration of the Ringarooma syphon, after the disastrous floods in 1929, these have been giving fair service, although the old wooden syphon requires constant attention. The Hume pipe syphon has proved very satisfactory, and has not needed any attention since it was put in.

At the Little Mussel Roe River trestle the first stringer has decayed, and will have to be replaced, and this will be attended to.

The other syphons and flumings are giving good service.

Dams.

The dam just above No. 2 syphon, the "Edina" dam, "Groves" dam, and "Harvey's" dam, near the Manager's residence, are all in good repair. The sum of £80 was provided for repairing the breaches made in the old Native Lass dam some years ago, and for raising the embankment some 4 feet, but the Manager has deferred putting the work in hand, as Messrs. Watt and Richardson have built a higher level dam, and the extension of the race to the Echo dam appears to make it unnecessary. The Board will deal with this during the current year.

General.

A special meeting of the Board was held at Gladstone on the 29th October, 1930, to consider resolutions passed at a meeting of water-users asking for a reduction in rates, owing to their average earnings at the present price of tin barely giving them a living.

The Board, as stated above, decided first to try the effect of getting more water through by removing the weed in the

race, and held over the matter of reduced charges. The removal of the weed greatly increased the flow, but it was decided subsequently, owing to the continued fall in the price of tin, to reduce the charges, and this was given effect to after the close of the year.

Messrs. Higgs and Kerrison are still carrying on successfully at Lark Creek, and have been taking 12 heads of water regularly.

Messrs. J. L. Richardson and F. D. Richardson, on the Cybele, are also getting good returns, and take a regular supply of six heads.

Messrs. A. E. Richardson and Watt Brothers, on land to the north of the Native Lass dam, are doing fairly well with a supply of six heads.

J. Ogilvie is another successful user of three heads on the Fly-by-Night Creek.

The Manager (Mr. D. Shields) and the channel-keepers have carried out their duties loyally and satisfactorily, and the Board desires to express its appreciation and thanks for their services.

Rainfall.

The registered rainfall for the year was as follows:—

	In	Points.
Great Mussel Roe	41	32
Little Mussel Roe	37	46

Revenue.

The revenue for the year amounted to £529 13s. 2d., being an increase of £3 9s. 11d. on the previous year.

Expenditure.

The expenditure amounted to £900 5s. 1d., being an increase of £14 19s. 2d. on the previous year.

Statistics.

The statistics for the year are as follow:—

Average number of claims supplied per week	13
Greatest number supplied in any one week	19
Total number of heads supplied under—	
Fixed, or cash, scale	123
Royalty, or credit, scale	2,824
Total	2,947

Receipts for Year.

	£	s.	d.
Water sold under fixed scale	72	9	4
Water sold under royalty scale	457	3	10
Total	£529	13	2

Expenditure.

	£	s.	d.
Salaries and wages	829	9	11
Travelling expenses	24	14	0
Insurance	16	16	0
Repairs to race	20	16	0
Stationery and cheque-books	3	6	7
Stores and freights	15	2	7
Total	£900	5	1

We have, &c.,

W. A. PRETYMAN, Chairman of the Board.
CECIL C. RYAN, } Members.
GEORGE MALLINSON, }

The Hon. the Minister for Mines, Hobart.

WALTER E. SHIMMINS,
GOVERNMENT PRINTER, TASMANIA.