1959. (No. 21.)

TASMANIA

REPORT

OF THE

DIRECTOR OF MINES

FOR

YEAR ENDED 31ST DECEMBER

1958

TASMANIA:
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REPORT OF THE DIRECTOR OF MINES

Department of Mines,
Hobart, 1st July, 1959.

THE HONOURABLE THE MINISTER FOR MINES.

Sir,

I HAVE the honour to present my report on the mining industry for the year ended 31st December, 1958.

The total value of the mineral output was £A11,838,054, as compared with £A12,588,719 for the previous year. The fall in value has been due to the decline in the market price of copper, lead, zinc, silver, osmiridium and tungsten which has lowered the income of producers and in one case has been sufficiently severe to force the cessation of mining operations. There were increases in the recorded production of cadmium, cobalt oxide, copper, gold, lead, silver, tin, zinc, dolomite, limestone, ochre, pebbles, silica and coal but there was a fall in the production of iron oxide, osmiridium, pyrite, scheelite, sulphur, wolfram, manganese dioxide, zinc sulphate, kaolin and red granite.

The average number of men employed in the industry was 8,309, as compared with 8,137 for the previous year. The increase, which occurred in spite of cessation of scheelite mining and consequent reduction of labour force in that field, has resulted, as in 1957, chiefly from employment of additional labour at metallurgical works.

MINES

Due to uneconomic markets King Island Scheelite (1947) Ltd., operating at Grassy, was obliged to cease production in August, 1958. Maintenance operations at the mine are being carried out by the skeleton staff of 28 men retained in employment.

No new metal mines were opened during the year but additional plant and equipment were installed at an East Coast coal mine with a view to the possible resumption of production.

In an endeavour to reduce costs and increase output of tin-tungsten, a merger has been effected between the management of the Aberfoyle and Storeys Creek mines.

METAL PRICES

During the year under review there have been several events of importance to Tasmanian producers. These may be referred to, briefly, as stabilisation of the Australian price of copper, efforts to stabilise the price of lead and zinc at a profitable level and to minimise the effect of the import quota system imposed by the United States, the continued fall in the price of tungsten and movements in overseas tin prices.

The London price of copper fell in the early part of the year to £160 per ton but as a result of increased consumption and strikes in certain producing countries the price rose to £260 per ton later in the year. The Australian price of £330 per ton has been stabilised partly by import duty and partly by bounty. When the price based on weekly average prices on the London Metal Exchange is the equivalent of £A285 or more per ton certain copper products will be imported free from duty, but where the price is less than £A285 per ton the duty will increase by £1 per ton for each £1 by which the determined price falls below this level. This protection is supplemented by a bounty of £45 per ton on copper sold on the local market and this will be decreased by £1 per ton for each £1 the price of copper exceeds the equivalent of £A285. Payment of the bounty is subject to a profit limitation of 10% on the capital employed.

The announcement by the United States in September, 1958, of its decision to impose an import quota equal to 80% of the average annual commercial imports of lead and zinc during the period 1953-57 caused wide consternation especially in Australia. International meetings of producers have been held and efforts have been made to influence the United States to review its decision and to secure new markets. Investigations have been made with the object of controlling exports and production but no specific plan has been formulated. The Electrolytic Zinc Company of Australasia Limited which is the major Tasmanian producer has contracts in India and is not directly affected by the quota.

The serious fall in the price of tungsten forced the King Island Scheelite Company to cease operations in August last and the mine is now " on a care and maintenance basis " pending price increases to economic levels. The average Australian price for 1957 fluctuated between 275s. to 120s. per unit but this declined further during 1958 and was 67s. 6d. per unit when the mine closed. The price had somewhat improved towards the end of the year to 111s. 3d. per unit but indications did not favour increases much beyond this level in the foreseeable future.

There has been a World surplus of tin which has resulted in falling prices and, in an endeavour to reduce the amount of available tin and maintain prices at a satisfactory level, the International

Tin Council fixed export quotas for the six main producing countries and has created a buffer stock to support a fixed minimum price of £730 per ton on the London Metal Exchange. The position was aggravated by large tonnages of tin from the U.S.S.R. being placed on the market and at one stage this forced the buffer pool to cease operations temporarily, resulting in an immediate price drop of £90 per ton. There have been some restrictions on the import of Russian tin although there has been no actual agreement by that country with the International Tin Council. The London price has averaged slightly above £750 per ton.

The Australian price of tin is based on the Singapore price and has averaged £A1035 per ton during 1958. Immediately the sudden fall in the price of tin was reported the Government made representations to the Commonwealth for the payment of a bounty to guarantee a minimum price to producers but as the world market price immediately recovered no action was taken.

A tabulation of average annual prices of the principal minerals has been included in this report.

EXPLORATION

Mining activity in the State continues to be characterised by extensive policies of exploration and investigation of the mineral resources by companies such as Mt. Lyell Mining and Railway Co. Ltd., the Electrolytic Zinc Company of Australasia Limited and Rio Tinto Australian Exploration Pty. Ltd. Large areas of land in the west, north-west, south-west and east have been held under Special Prospectors' Licences and investigational work by ground parties and airborne geophysical instruments has contributed to the increased knowledge of the mineral potential of the areas. No discoveries have as yet been reported but whilst the technical and financial resources of these major mining companies are devoted to programmes of exploration the future of the mining industry must be secured.

Prospecting for nickel, tin, molybdenum and chromite has also engaged the attention of other operators. Metallurgical problems and economics of production have limited progress, but in most cases investigations are being continued. The Department has been able to carry out geological and ore dressing research investigations for interested parties.

LEGISLATION

The Mining Act, 1929

This Act which governs the occupation of land for mining purposes in the State was passed in 1929 and apart from amendments made in 1944 no substantial change in the legislation has been necessary.

There have, however, been considerable technical advances in mining practices, particularly as applied to prospecting, over the last ten years, and it was found that certain provisions of the legislation were not adequate to meet the present requirements of the mining industry.

Extensive amendments to meet these changing conditions were incorporated in a Bill which was passed by Parliament in December, 1958.

The new provisions may be summarized as follows:—

(*a*) Provision to grant an Exploration Licence upon the applicant satisfying the Department that he has the financial and technical resources to enable the investigation of a large area using modern airborne and ground prospecting techniques. A rental of 10s. per square mile for the first twenty-five square miles and one shilling per square mile thereafter has been fixed.

(*b*) Special Prospector's Licences have been limited to twenty-five square miles and a rental of ten shillings per square mile is payable.

(*c*) Rent on mineral leases other than alluvial minerals has been increased to 10s. per acre per annum and, in the case of coal, oil, and stone leases to 5s. per acre per annum.

(*d*) The expenditure covenant under leases has been repealed and a labour covenant substituted. Leases will now require the holder to employ one man for each ten acres or part thereof in the case of mineral leases and stone leases, and one man for each 80 acres or part thereof in the case of coal and oil leases. Employment must be for forty hours per week unless an exemption is obtained, except in the case of stone leases where employment of each man for an aggregate of three months in each lease year will be regarded as satisfying the labour covenant. In all cases where power is used each ten units of horsepower or each horse used will be accepted as the equivalent to the employment of one man.

(*e*) Provision has been made to enable special conditions to be inserted in leases to prevent erosion and to require a deposit to be lodged to be used to remedy any damage resulting from a breach of such conditions.

(*f*) It has been provided that leases may be issued by description pending surveys being made.

(*g*) Royalty may now be charged on sand and gravel removed from Crown land under a stone lease.

(*h*) Provision has been included to enable owners of plant and mining products on abandoned or forfeited leases to obtain a storage lease to store plant on the land formerly leased or a treatment lease to clean-up any mining products awaiting treatment.

(*i*) Wardens of Mines have been relieved of administrative functions and in future will act in a judicial capacity only.

It is felt that the foregoing provisions will assist those engaged in active investigation of the mineral resources and in genuine productive operations and will benefit the mining industry generally.

THE AID TO MINING ACT, 1927

The provisions of this Act have been found to be too restrictive in practice and the Department has been unable to provide assistance for development of prospects in cases where the holder has had no assets to offer as security for an advance. It has been felt that the Act should provide for the granting of assistance in all cases where after investigation by technical officers of the Department, it is considered that the project is worthy of development.

Amendments were incorporated by the Mining Act, 1958 which includes the following provisions:—

(*a*) Financial assistance may be granted without security on the £ for £ basis to test or prove deposits or discoveries of any mining product and the Minister may require the repayment of the advance by royalty on the value of minerals which may be produced from such discovery.

(*b*) Loans may be made available for all mining purposes such as sinking, driving, construction of dams and water races, diamond and other drilling and purchase of plant and equipment. The Minister may require a security over any plant at the mine to be executed. Where there are no assets at the mine an advance may be made without security. Repayment is to be by way of a royalty based on production.

(*c*) The existing limit of £1000 for any single loan has been retained, but special provision has been made to increase this amount where particular plant is required or the work to be performed cannot be completed for £1000.

(*d*) The Department has been authorised to purchase mining equipment for hire to lessees engaged in proving or testing mineral deposits.

THE EXPLOSIVES ACT, 1916

An amendment was enacted whereby the maximum amounts of explosives to be kept without recourse to licensing may be regulated. The commencement of this Act is postponed pending preparation of the complementary regulations.

THE INFLAMMABLE LIQUIDS ACT, 1929

Numerous amendments were made to this Act to simplify methods of licensing, to extend the Act to cover all inflammable liquids and to give marine authorities adequate powers in their domains. A new set of regulations more in line with up to date practices and covering new commodities coming into use was under preparation. It is hoped that copies will be available early in 1959.

GENERAL

It is intended to re-draft all Regulations as the various Acts administered by the Department are modernised.

OPERATIONS AND PRODUCTION

1.—METALLICS

CADMIUM

Quantity produced:—

	Tons	Value £
1924-54	862	737,685
1955	46	69,039
1956	53	84,302
1957	50	78,682
1958	56	84,663
Total	1,067	£1,054,371

This is a by-product obtained by the Electrolytic Zinc Company of Australasia Limited at its Risdon Works from zinc concentrates produced from the Rosebery and Williamsford mines.

COBALT OXIDE

The source of the 0.66 tons of cobalt oxide of value £742 was the same as that of cadmium above.

COPPER

Quantity and value of production:—

Year	From Tin Ores		From Lead-Zinc Ores		In Blister Copper		In Copper Ores		Total	
	Tons	£	Tons	£	Tons	£	Tons	£	Tons	£
1919–54 ..	..	..	4,620	843,191	314,759	31,669,748	404	10,581	319,783	32,523,520
1955	..	..	503	224,945	7,582	3,388,713	..	..	8,085	3,613,658
1956	183	73,531	545	225,552	7,571	3,132,391	..	..	8,299	3,433,474
1957	89	30,263	627	212,320	9,763	3,309,749	..	..	10,479	3,552,332
1958	..	..	669	205,465	10,187	3,124,569	..	..	10,855	3,330,034
Total ..	272	£103,794	6,964	£1,711,473	349,862	£44,625,170	404	£10,581	357,501	£45,453,018

COPPER

THE MOUNT LYELL MINING AND RAILWAY COMPANY, LIMITED, QUEENSTOWN

RETURN FOR 1958.

	Tons
Mining—	
Overburden removed	1,954,004
Ore mined (West Lyell)	1,952,444
Limestone delivered to works	5,059
Silica	6,625
Reduction—	
Concentrates smelted	45,057
Precipitate smelted (North Lyell and Comstock)	153
Blister copper produced	10,265
Containing Copper 10,187 tons	
Gold 5,936 ozs.	
Silver 34,407 ozs.	
Pyrite concentrate shipped	68,110
Total Value of Production	£3,435,265
Average Number of Men Employed—	
Mining—Surface	701
Underground	44
Reduction Department	764
Railway	98
Total	1,607

Production from the Inception to 31st December, 1958—

Copper	508,455 tons
Gold	557,747 ozs.
Silver	15,763,469 ozs.

Inspector Morris reports that the haulage adit and ore passes to the West Lyell open cut were completed and the construction of the new crusher station was well advanced. The station is to comprise an 84″ x 60″ jaw crusher and a belt conveyor to an ore bin over the passes.

Diamond drilling consisted of 2 holes to test the downward continuation of the West Lyell ore body below adit level, 2 holes in the Whaleback area, 9 proving holes in the Open Cut, 9 holes to test further the ore body located in 1957 west of the North Lyell Mine, and 2 holes in the Comstock area. The total footage drilled was 13,434. As a result of drilling the new ore body west of the North Lyell Mine is to be explored underground from an existing shaft.

ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED, ROSEBERY

This company, reviewed under Zinc, produced 7,630 tons of copper concentrate containing 669 tons of copper valued at £205,465.

GOLD

Quantity produced—

	oz.	Value £
Prior to 1955	2,398,966	12,437,898
1955	16,113	251,759
1956	16,532	258,320
1957	19,442	303,788
1958	20,976	327,749
Total	2,472,029	£13,279,514

THE MOUNT LYELL MINING AND RAILWAY COMPANY LIMITED, QUEENSTOWN

This Company recovered 5,936 oz., valued at £92,750, from sludge in the electrolytic copper refinery.

ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED, ROSEBERY

Concentrates produced by this Company contained 14,884 oz., valued at £232,569.

DORSET DREDGE, SOUTH MOUNT CAMERON

From the tin concentrate of this dredge (reviewed under Tin), 148 oz., valued at £2,313, were recovered by amalgamation.

MISCELLANEOUS

Intermittent mining in the Mangana, Mathinna and Lisle districts produced 3 oz., valued at £49.

IRON OXIDE

Quantity produced—

	Tons	Value £
Prior to 1954	59,680	52,543
1955	6,582	5,978
1956	6,684	6,374
1957	5,775	7,056
1958	4,266	5,418
Total	81,987	£77,369

A. PEARSON, PENGUIN

Operations at the Iron Cliffs Mine carried out by one man using a front-end loader produced 4,266 tons valued at £5,418 for use in cement manufacture.

LEAD

Quantity produced—

	Tons	Value £
1919-54	235,722	9,090,718
1955	10,559	1,358,716
1956	11,422	1,601,430
1957	11,595	1,315,429
1958	12,902	1,124,977
Total	282,200	£14,491,270

ZEEHAN MINES PTY. LTD. ZEEHAN

During the year 22,662 tons of ore from the Oceana Mine were treated to produce 3,402 tons of concentrate containing 2,434 tons of lead, valued at £212,434 and 95,646 oz. of silver, valued at £37,853. The average number of men employed was 68 (28 surface, 40 underground).

In development the main shaft was sunk 78 feet to 748 feet and No. 6 Level plat was cut. On No. 3 Level the North Drive was extended in the hanging wall to 300 feet North of the Main Cross-cut. On No. 5 Level two drill holes were aimed at the orebody 100 and 200 feet below, and the level was advanced North and South to 130 and 140 feet respectively from the Cross-cut.

Surface work included a new mechanical workshop and a commodious change house at the mine, and a 1,500 ton concentrate bin at Burnie Wharf. An 800 cumin compressor was installed in the Power House.

MONTANA SILVER LEAD N.L., ZEEHAN

This company ceased operations early in the year, having exhausted visible ore reserves.

Production for the period was 39 tons of concentrates containing 24 tons of lead, valued at £2,087, and 2,170 oz. of silver, valued at £860. This was obtained from 500 tons of ore, and an average of 7 men was employed (5 underground, 2 surface).

ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LTD., ROSEBERY

This company, reviewed under Zinc, produced 10,360 tons of lead concentrates. The lead recoverable from this and other concentrates was 9,858 tons valued at £859,192.

FARRELL MINING CO. LTD., TULLAH

Contrary to expectations this Company failed to follow up with diamond drilling either of the geophysical anomalies discovered by the Bureau of Mineral Resources. The main lode in the mine developed very well to the North on No. 9 Level and appeared strong underfoot. In the southern end the orebody bottomed above the level and has been stoped out.

Production from the Farrell Mine was improved again, 4,361 tons of ore having been treated for the production of 885 tons of concentrate containing 586 tons of lead, valued at £51,264 and silver as given below. The average number of employees was 44, of whom 18 were underground.

A. R. SMITH, ADELAIDE MINE, DUNDAS

Production was confined to Crocoite specimens, valued at £473, and to the first half of the year only.

MANGANESE DIOXIDE

This is recovered as a sludge in the electrolysis of zinc sulphate at the Risdon works of the Electrolytic Zinc Company of Australasia Limited, the original source being the ore in its West Coast Mines. The production of 99 tons was valued at £840.

NICKEL

HEAZLEWOOD PROSPECTING SYNDICATE N.L., HEAZLEWOOD RIVER

The only activity was a geological examination of the Lord Brassy Mine made to assess the potentialities and the suitability of a geophysical survey.

OSMIRIDIUM

Quantity produced—

	oz.	Value £
1910-54	30,930	695,513
1955	22	1,504
1956	25	2,085
1957	66	5,945
1958	42	3,424
Total	31,085	£708,471

J. BIBBY, ADAMSFIELD

A new level was commenced at 60 feet in this mine (Reward Claim) which showed good values in the face. However, the condition of the shaft deteriorated and operations ceased before rising maintenance and a severe fall in the market price.

SUNDRY ALLUVIALS, ADAMSFIELD

The three parties on these deposits were seriously affected by dry weather and the market price, and mining was spasmodic.

PYRITE

Quantity produced—

	Tons	Value £
1915-54	932,194	1,532,913
1955	67,420	202,260
1956	58,469	175,407
1957	76,340	228,993
1958	68,110	204,330
Total	1,202,534	£2,343,903

This is produced and exported by the Mount Lyell Mining and Railway Company Limited for sulphuric acid manufacture.

SILVER

Silver is nowhere mined for itself but is a valuable by-product from copper, lead and tin ores. The current producers are shown below:—

Producer	Source	Quantity oz.	Value £
E.Z. Co. of A/asia Ltd.	Copper & Lead Concentrate	1,156,824	457,779
Zeehan Mines Pty. Ltd.	Lead Concentrate	95,646	37,853
Farrell Mining Co. Ltd.	Lead Concentrate	59,409	23,510
Mt. Lyell M. & R. Co. Ltd.	Refinery Sludge	34,407	13,616
Montana Silver-Lead N.L.	Lead Concentrate	2,170	860

SILVER

QUANTITY AND VALUE OF PRODUCTION

Year	From Tin and other Ores		From Silver-Lead Ore		From Copper Ore		From Lead-Zinc Ore		Total	
	Oz.	£	Oz.	£	Oz.	£	Oz.	£	Oz.	£
1919–54 ..	44	5	16,491,410	2,364,849	3,248,385	505,969	11,254,292	2,957,786	30,994,131	5,828,609
1955	..	..	154,802	58,515	31,375	11,860	941,614	355,939	1,127,791	426,314
1956	59,506	24,487	134,156	55,205	29,343	12,075	1,105,110	454,753	1,328,115	546,520
1957	28,598	11,697	159,313	65,092	36,647	14,964	1,034,315	423,009	1,258,873	514,762
1958	..	..	157,225	62,223	34,407	13,616	1,156,824	457,779	1,348,456	533,618
Total ..	88,148	£36,189	17,096,906	£2,605,884	3,380,157	£558,484	15,492,155	£4,649,266	36,057,366	£7,849,823

SULPHUR

This is produced as sulphuric acid in the roasting at Risdon of the zinc concentrates from the Rosebery and Hercules mines of the Electrolytic Zinc Company of Australasia Limited.

Production of sulphuric acid was 20,606 mono tons, valued at £92,726.

TIN

Quantity produced—

	Tons	Value £
1873-1954	139,680	25,578,299
1955	853	814,651
1956	938	948,045
1957	777	764,171
1958	883	883,111
Total	143,131	£30,409,499

ABERFOYLE TIN N.L., ROSSARDEN

Inspector Muir reports that production was increased slightly during the year, 69,952 tons of ore being mined and treated for recovery of tin concentrates containing 495 tons of tin valued at £494,966. Wolfram concentrates were also produced and these are given under Tungsten. The average number of employees was 224 (70 surface, 154 underground).

In development all work was carried out between Nos. 4 and 9 Levels, 4,324 feet having been driven. This work was in the known reef areas and no significant quantity of ore was discovered. Diamond drilling consisted of one surface prospecting hole, 361 feet deep and located one mile north of the mine workings.

Very little construction work was done. The mullock bin was enlarged and a grizzly installed to direct the fines to the ore bin.

RENISON ASSOCIATED TIN MINES N.L., RENISON BELL

During the year the Mount Lyell Mining and Railway Company Limited acquired a large interest in this Company and ensuing operations were confined to development of the winze orebody and exploration within the leases. Stoping was stopped and the mill fed from development.

Production from 11,622 tons of ore was 121 tons of concentrate containing 81 tons of tin valued at £80,352. The average number of employees was 30 (21 surface, 9 underground).

DORSET TIN DREDGING, SOUTH MOUNT CAMERON

The Department of National Development operated this dredge throughout the year, digging 1,568,000 cu. yd. of gravel from 35 acres of river flats at the rate of 290 cu. yd. per hour. Concentrates produced contained 85 tons of tin valued at £85,235 and 148 oz. of gold. The number of men employed was 50.

Sluicing operations at the channel were almost completed, approximately 200,000 cu. yd. of ground having been removed. This channel is for the passage of the dredge through a ridge to a new area of gravel reserves. No prospecting was done.

ENDURANCE TIN MINING CO. N.L., SOUTH MOUNT CAMERON

Normal operations continued, the Clifton face being advanced 150 yards east by 80 yards wide. Throughput was 426,840 cu. yd. for a recovery of 80 tons of tin valued at £80,049. All hydro-electric power, pump and mine plant was kept in good order and preparations were commenced for the removal of the gravel-pump barge ahead to site No. 10. An average of 47 men was employed in all phases.

STOREYS CREEK TIN MINING CO. N.L., STOREYS CREEK

This Company reviewed under Tungsten, produced tin concentrates containing 34 tons of tin valued at £33,921.

BRISEIS TIN N.L., DERBY

Production was maintained at the Cascade workings, but owing to excessive boulders and poor grade results were unsatisfactory A new face was opened up at the South-eastern end of the main Ringarooma workings. Progress was slow through large dumps of overburden boulders, and tailings redressing was suspended to make more water available for this work.

An average of 27 persons was employed, and in all they handled 180,000 cu. yd. of gravel to recover concentrates containing 18 tons of tin valued at £18,300.

STAR HILL SYNDICATE, GLADSTONE

This Syndicate employed an average of 5 men on its leases near the Garfield mine off the Eddystone Road. Two faces were worked with water pumped by electric power from the Mount Cameron Water Race. From the 137,000 cu. yd. sluiced concentrates containing 18 tons of tin valued at £17,868 were recovered.

GOSHEN TIN MINES, ST. HELENS

This Company worked two hydraulic mines, one in the head of Launceston Creek and the other in the Groom River flats, 10 miles from St. Helens. Sluicing was curtailed for two months, owing to a water shortage. An average of 9 men was employed in sluicing and race maintenance and 60,300 cu. yd. of gravel were treated. Production was 11 tons of tin in concentrates, valued at £11,576.

SMALLER PRODUCERS

Many miners and prospectors throughout the State produced small quantities of concentrates by reason of either small-scale or part-time working. The list hereunder gives the number of men engaged (either full or part time) at each place, the quantities of tin in concentrates sold, and the values.

Name	*Locality and Description*	*Men*	*Tons*	*Value £*
	BLUE TIER			
Kerrison, D.	Prospecting—no discovery	1	0.08	79
Newitt, A.	Crushing from Summit Mine. Ceased	1	0.13	128
Pursell, R. G.	Crushing from Summit Mine. Ceased	1	0.37	373
	BRANXHOLM			
Barnett, L. M.	Bells Plains, southern side	1	0.08	77
Bolch, R.	Ruby Flat, old tail races	1	0.07	69
Dunn, T.	Ruby Flat	1	1.16	1,167
Edwards, A. S.	Ormuz Mine. 45,000 cu. yds.	4	4.38	4,361
Handerson, J.	Ruby Flat	1	0.23	232
Montgomery, W.	Between Ruby Flat and Mt. Paris Mine	1	0.35	356
Newman, L. T.	Black Creek, near syphon	1	1.96	1,947
Rogers, G.	Ruby Flat	1	0.19	191
Stevens, W. G.	Ruby Flat and Mt. Paris Mine	1	0.06	56
Walsh and Co.	Black Creek, near mouth. 22,000 cu. yd.	4	7.22	7,161
	DERBY			
Cotton, G. A.	Cascade River, above Cascade Dam	1	0.14	138
Cunningham, G.	Ringarooma River beaches below Derby	1	0.02	26
Flakemore, L.	Ringarooma River	1	0.23	233
Hyde, C. T.	Main Creek, Sarah Ann Mine	3	2.12	2,114
Hyde, R. G.	Main Creek	1	0.02	21
Hyde, R. A.	Main Creek	1	0.03	28
Kerrison, K.	Ringarooma River beaches	1	0.61	604
Kerrison, R.	Ringarooma River beaches	1	1.27	1,286
Melville Party	Ringarooma River beaches	2	0.15	152
Merritt, J.	Ringarooma River beaches	1	0.06	63
Merritt, L.	Ringarooma River beaches	1	0.07	70
Merritt, T.	Ringarooma River beaches	1	0.29	291
Mott, A.	Tailings retreatment Briseis &c.	1	0.19	198
Rainbow, R. L.	Banca Mine; diesel pumping plant. 12,200 cu. yd.	3	1.90	1,909
Richardson, P. A.	Ringarooma River beaches	1	0.06	57
	GLADSTONE			
Bartels, J. A.	Terraces on Mussel Roe River	1	2.56	2,580
Elizabeth Syndicate	N.E. of Gladstone near Garfield Mine. 75,000 cu. yd.	2	8.43	8,389
Fletcher, S.	Edina Mine, near Lark Creek	1	0.57	574
Groves, E. A. T.	Vicinity of Gladstone	1	0.05	49
King, E. K.	Head of Amber Creek; in winter only	1	0.82	829
Kirton, K. S.	North of Mt. Cameron	1	0.08	80
Lawry, D.	Vicinity Garfield Mine	1	0.07	74
Moore, L. H.	Vicinity of Gladstone	1	0.06	63
Moore, V. A.	Vicinity of Gladstone	1	0.11	107
Ponting, J.	Vicinity of Gladstone	1	0.21	215
Watt, T.	Vicinity of Gladstone	1	0.22	220
	MISCELLANEOUS			
Aitken, R.	Flinders Island	1	0.06	64
Burrell, T. M.	Cox's Bight	1	0.19	188
Jones, W.	Mt. Stronach	1	0.02	21
King, C. D.	Melaleuca Lagoon	1	0.84	999
McRae, L.	Coles Bay	1	0.11	109
	MOORINA—WELDBOROUGH			
Bishop, R.	Weldborough	1	0.276	274
Boon, W. L.	Junction of Weld and Frome R.	2	1.60	1,627
Davis, D. G.	Cascade R. below Morning Star Dam	1	0.12	117
Lambert, J.	Weldborough	1	0.06	63
Lathey, D. C.	Bells Hill Mine	1	0.12	126
Mallinson, C.	Weldborough	1	0.03	31
Symons, M.	Cambria Mine, Little Plain	1	0.12	121
Weldborough Tin Mines	Moorina, W.X.X. Mine. 13,000 cu. yd.	5	2.06	2,107
Weldborough Tin Mines	Weldborough. 6,000 cu. yd. Ceased	2	0.50	505

Name	*Locality and Description*	*Men*	*Tons*	*Value £*
	Mt. Cameron			
Cox, G.	Boobyalla R. West of Mt. Cameron	1	0.13	133
Hastie, T. W.	Wagner's Mine, Boobyalla Rd.	1	0.01	11
Hunter, F. R.	South Mt. Cameron	1	0.01	9
Maiston, K.	South Mt. Cameron	1	0.01	34
Swain, R.	Near Ringarooma R. and Endurance Pump Station	1	0.23	235
	Pioneer			
Fenton, S. F.	Wynifred R. Operations ceased	2	0.72	707
Kerrison, E.	Vicinity of Pioneer	1	0.18	185
Kerrison, J.	Garibaldi	2	1.56	1,607
Slatter, G. H.	Wynifred R.	1	0.10	99
	St. Helens			
Berwick, W.	Below Saxelby Dam, since broken in flood	1	0.09	90
Coker—William, F.	St. Helens	1	0.02	26
Kirwan, S. M.	Bell Creek	1	0.04	43
Kirwan, W. C.	Bell Creek Mine	2	0.28	286
Moses, H.	Rosebud Mine on tribute from Goshen Tin Mines	1	1.05	1,085
	Storeys Creek			
Fieldhouse, R.	Vicinity of Storeys Creek Mine	1	0.09	84
Ivory, C.	Near Rossarden	1	0.04	35
Sabjan, J.	Gipps Creek	1	0.04	44
	Upper Natone			
Crane, R. M.	Trial Flats	1	0.08	78
Crane, Party	Falls Creek. 76 chains of race, 1,000 ft. piping installed. 18,000 cu. yd. stripping. Operations suspended	4	0.04	37
Standage, H.	Trial Flats	1	0.09	85
	Waratah			
Allen Party	Greisen orebody and D Glory Hole	2	0.87	868
Brown Party	Eastern Lode	2	0.70	692
Campton, V.	North Valley—tailings retreatment with battery, tables and roaster	1	0.66	664
Glozier, M. G.	North Valley—battery tailings redressing	1	0.37	375
Housego, J.	Waratah Creek—tailings redressing	1	1.48	1,466
Kelly, G.	Shovel Ledge—quartz veins in oxidised zone	2	1.56	1,563
Kelly, P.	The Pound	1	0.41	422
Kenworthy Party	Pig Flat. Dyke orebody	2	0.25	246
Prouse, J.	40 Mill. Dressing spillage	2	1.16	1,150
Prouse, K.	Don Hill. Detrital ore	2	0.74	756
Sundry	Mt. Bischoff	5	0.43	437
	West Coast			
Clarke Party	Grand Prize, Dundas. Oxidised ore (95 tons) stoped and treated with tube mill and tables	2	1.00	1,024
Coleman, E.	Trial Harbour, Wakefield Lease	1	0.02	24
Cornish, E.	Zeehan	1	0.04	39
Dunkley Party	Zeehan Open cut. Crusher, tube mill and tables	2	1.30	1,284
Hodge, W. J.	Razorback, Dundas. Oxidised ore stoped and treated with tube mill and tables	2	1.89	1,892

TUNGSTEN (SCHEELITE)

Quantity produced—

	Tons	Value £
1917-54	10,214	9,567,009
1955	1,432	2,370,007
1956	1,488	2,288,356
1957	1,445	1,880,539
1958	731	438,365
Total	15,310	£16,544,276

KING ISLAND SCHEELITE (1947) LTD., GRASSY

Inspector Egan reports that operations ceased in August because the price obtainable was causing a loss, and no improvement could be expected in a reasonable time. The price then was 70s. 7d. per unit WO_3. The mine was put on care and maintenance with 28 men. The average number of employees for the year was 110.

From the open cut 126,027 tons of ore were mined and treated to produce 731 tons of concentrate containing 477 tons WO_3 valued at £438,365.

TUNGSTEN (WOLFRAM)

Quantity produced—

	Tons	Value £
1899-1954	8,176	4,658,881
1955	579	758,404
1956	647	809,980
1957	549	384,984
1958	495	188,639
Total	10,446	£6,800,888

ABERFOYLE TIN N.L., ROSSARDEN

Wolfram concentrates produced contained 223 tons of WO_3 valued at £124,993. This Company is reviewed under Tin.

STOREYS CREEK TIN MINING Co. N.L., STOREYS CREEK

The management of this mine amalgamated with that of Aberfoyle Tin N.L. following the purchase of a very large interest by that Company and its subsidiary, North Australian Uranium Corporation Ltd.

The new mill was brought into operation towards the end of the year and the rate of production increased. However the ore mined was 3,000 tons less than the previous year, being 14,310 tons. The wolfram concentrates produced contained 137 tons of WO_3 valued at £63,646. The average number of employees was 75 (36 surface, 39 underground).

In development 3,867 feet were driven with particular attention being given to those lodes of a possible higher tin content. The mine is developed down to No. 8 Level.

ZINC

Quantity produced—

	Tons	Value £
1919-54	446,395	17,299,526
1955	24,036	2,778,078
1956	28,138	3,432,764
1957	26,118	2,635,476
1958	29,023	2,650,370
Total	553,710	£28,796,214

ELECTROLYTIC ZINC COMPANY OF AUSTRALASIA LIMITED RETURN FOR 1958

EXTRACTION FROM CONCENTRATES: RISDON

From other than Tasmanian Ores—

Zinc	91,664	tons
Cadmium	236	tons
Cobalt Oxide	24	tons
Superphosphate	83,783	tons

From Tasmanian Ore—

Zinc	23,109	tons
Cadmium	41	tons
Cobalt Oxide	0.66	tons

Manufactured product—

Ammonium Sulphate	34,810	tons

Men employed—

The average number of men employed: 2,857.

WEST COAST DIVISION

Ore Mined—

	Tons
From Hercules Mine	29,885
From Rosebery Mine	175,637
Total	205,522

Concentrates Produced—

	Tons
Zinc Concentrates	62,118
Lead Concentrates	10,360
Copper Concentrates	7,630
Total	80,108

Recoverable Quantity in Ore Mined—

Zinc	29,023	tons
Lead	9,858	tons
Copper	669	tons
Cadmium	56	tons
Silver	1,156,824	oz.
Gold	14,884	oz. (fine)
Cobalt Oxide	0.66	tons
Manganese Dioxide	99	tons
Zinc Sulphate	157	tons
Sulphur as Sulphuric Acid	20,606	mono-tons

Total Value of Production—£4,590,155

Average Number of Men Employed—

Hercules Mine	45
Rosebery Mine	622
Total	667

ROSEBERY MINE

The new main shaft winder was completed but for minor adjustments and work well advanced on a 4,000 ton concrete fine ore bin. No further progress was made in the provision of stope filling.

In development no shaft sinking was carried out but 2,539 feet of drifts and cross-cuts were driven. Diamond drilling comprised 17,383 feet of which 4,868 feet in six holes were from the surface, and the remainder underground. In addition 481 feet were drilled on an outside prospect. An average of 235 men was employed underground.

HERCULES MINE

Development consisted of 215 feet of driving and cross-cutting, 241 feet of rising and 2,109 feet of diamond drilling. An average of 35 men was employed underground.

RISDON WORKS

Inspector Olds reports that the third contact acid unit was completed and that total capacity is now 170,000 tons per year. A major project commenced during the year was the replacement of the incline concentrate haulage from the wharf with a belt conveyor system. Preparatory work was done on an anode fabrication plant to allow cell room expansion to five units.

A notable achievement was made in a safety campaign whereby the accidents registered were reduced to 8 (2.8 per thousand employees) in contrast to 23 the previous year.

Calcine from Tasmanian and imported concentrates was processed, in all 230,755 tons. Some products were partly marketed as produced and partly manufactured into such commodities as zinc dust and dye-casting alloys. Sulphur in the concentrates was recovered as sulphuric acid and so applied on the spot to foreign phosphate rock and to home-made ammonia to make superphosphate and ammonium sulphate fertilisers, respectively. The total value of production was £12,405,110.

ZINC SULPHATE

This is a by-product from the treatment of zinc concentrates by the Electrolytic Zinc Company of Australasia Limited. The quantity produced was 157 tons and the value £5,809.

2.—NON-METALLIC MINERALS

CLAY

The quantity of clay produced was 121,531 cubic yards valued at £74,176, of which 96,545 cubic yards were for brick manufacture and 24,986 for pipes and tiles, and cement.

CRISP AND GUNN Co-op. Ltd., WEST HOBART

The quantity of clay mined was 20,590 cubic yards by 13 men, and an additional 38 men were employed in the kilns.

HOBART BRICK Co., NEW TOWN

This Company produced 25,139 cubic yards of clay from old pits at West Hobart and New Town and new pits at Austins Ferry. The average numbers of employees were four in the pit and 18 in the kilns.

GRANTON BRICK Ltd., GRANTON AND DOVER

The Dover kilns, where six men were employed, were shut down during the year for economic reasons, and production was only 600 cubic yards. The Dover machinery was progressively transferred to the Granton works where production of clay for bricks and pipes was 13,200 cubic yards. The average number of men employed was 24 of whom two were in the pit.

BURNIE BRICK Co., COOEE

This company employed 13 men and consumed 7,500 cubic yards of clay valued at £6,490.

GOLIATH PORTLAND CEMENT Co. Ltd., RAILTON

This company mined 9,375 cubic yards valued at £4,218 as an ingredient of its cement.

LUCK BROS. Pty. Ltd., DULVERTON

In quarrying clay and the ensuing brick-making 12 men were employed. The output was 4,316 cubic yards of value £2,840.

HUTTONS BRICKS Pty. Ltd., PROSPECT

Clay is mined from the pit by a bulldozer which delivers it to the adjacent works. The production was 13,245 cubic yards valued at £6,653, and 17 men were employed.

MACHEN'S BRICKS, KINGS MEADOWS

To meet an increasing demand for bricks additional plant was installed, including a conveyor belt from the dump to the works. The clay is mined by a bulldozer. Twenty-one men were employed and production of clay was 11,335 cubic yards valued at £11,335.

AGRIPIPE POTTERY Pty. Ltd., RELBIA

This Company made agricultural pipes from 356 cubic yards of clay valued at £144. An average of five men was employed.

JOHN CAMPBELL Pty. Ltd., LAUNCESTON

This Company's principal product is earthenware pipes and 620 cubic yards of clay valued at £330 were consumed. An average of 11 men was employed.

CLAYS Pty. Ltd., and McHUGH Bros. Pty. Ltd., LAUNCESTON

The clay mined by the former is used by the latter in the making of eathenware pipes, and the average employment was one man and 20 men respectively. Clay production was 1,813 cubic yards valued at £1,813.

WUNDERLICH Pty. Ltd., LOIRA and LAUNCESTON

This Company mined 4,067 cubic yards of clay of value £407 at its pit at Loira to supply its works at Launceston. The product is terra cotta tiling, but some ornamental facing bricks were also made to test the market, but with doubtful results. An average of 23 persons was employed.

DOLOMITE

Quantity produced—	Tons	Value £
Prior to 1954	6,424	19,546
1955	2,266	6,798
1956	788	2,320
1957	1,176	3,359
1958	2,585	7,437
Total	13,239	£39,480

CIRCULAR HEAD DOLOMITE Co., CIRCULAR HEAD DOLOMITE AND TRADING Co. PTY. LTD., SMITHTON

The former Company went into liquidation during the year and was succeeded by the latter. The total production was 2,585 tons valued at £7,437. Five men were employed.

KAOLIN

Quantity produced—	Tons	Value £
1940 to 1954	81,697	270,522
1955	9,740	54,034
1956	6,267	37,798
1957	6,038	39,226
1958	3,302	20,469
Total	107,089	£421,049

ENDURANCE TIN MINING Co. LTD., SOUTH MOUNT CAMERON

This Company, reviewed under Tin, produced 1,758 tons of kaolin, valued at £7,380, from deposits on its leases. Two men were employed.

NON-METALLIC MINERALS PTY. LTD., SURGES BAY

The kaolin produced at this mine, like that above, was used in paper manfacture. Production was 1,544 tons, valued at £13,089, and an average of five men was employed.

LIMESTONE

QUANTITY AND VALUE OF PRODUCTION, AND USAGE.

Years	Manufacture of Cement		Manufacture of Carbide		Chemical and Metallurgical		Agriculture and Other		Totals	
	Tons	£	Tons	£	Tons	£	Tons	£	Tons	£
1919-54	2,571,552	1,315,775	425,883	426,426	3,896,100	2,007,442	376,612	389,723	7,269,847	4,139,366
1955	157,135	78,568	17,946	32,679	7,834	10,280	23,223	33,331	206,138	154,858
1956	127,307	63,653	18,335	36,715	11,519	12,727	21,934	31,035	179,095	144,130
1957	153,618	126,557	20,264	44,542	15,309	22,643	15,928	27,133	205,119	220,875
1958	179,171	161,254	21,104	42,237	23,458	30,777	11,295	23,905	235,028	258,173
Totals	3,188,783	1,745,807	503,532	582,599	3,953,920	2,083,869	448,992	505,127	8,095,227	4,917,402

AUSTRALIAN COMMONWEALTH CARBIDE Co., LTD., IDA BAY AND ELECTRONA

From the Ida Bay quarry 21,104 tons of limestone valued at £42,237 were shipped to the works at Electrona, the average number of employees being 27. In addition 400 tons of value £850 were mined for agriculture. Five diamond drill holes, of total length 324 feet, were bored ahead of the face to test the quality of the limestone, and as a result the weight of advance was turned towards the south-west.

At the works 177 persons were employed in the production of 10,805 tons of calcium carbide and 182 tons of acetylene black. A programme of expansion was commenced with the construction of a new lime kiln.

AUSTRALIAN NEWSPRINT MILLS, JUNEE

This Company employed five men at the Junee quarry and three intermittently at Crisp's Quarry to produce 4,359 tons valued at £9,315. The bulk of the output was burnt at Boyer for use in paper-making, and the rest used at Risdon by the Electrolytic Zinc Company.

GOLIATH PORTLAND CEMENT Co. LTD., RAILTON

Operating to capacity 147,208 tons of cement were produced. Employment was 31 men in the quarry, whence 179,171 tons valued at £161,254 were extracted. Total employment (including asbestos-cement manufacture) was 256.

A. PEARSON AND WRIGHT, STEPHENSON PTY. LTD., PULBEENA

The lime sands deposits were sold by Mr. Pearson (Mineral Supplies Pty. Ltd.) to the Company in the second quarter. The latter equipped the property with a half-yard shovel and total production was 1,874 tons of value £2,343. Two men were employed.

MELROSE AGRICULTURAL LIME QUARRIES, EUGENANA

The bench opened up in the main floor was abandoned as uneconomic and mining operations were transferred to the southern perimeter of the B.H.P. quarry.

Output of ground limestone for agriculture was 4,641 tons and in addition 5,788 tons were crushed for constructional works. The total production was 10,429 tons, valued at £17,835, and an average of 16 men was employed.

RAILTON LIME WORKS, RAILTON

Mr. A. R. Blenkhorn produced 3,264 tons of ground and burnt limestone of value £7,676 for the agricultural industry. An average of three men was engaged in this work.

MT. LYELL MINING & RAILWAY CO. LTD., HALLS CREEK

This Company, reviewed under Copper, quarried 5,059 tons of limestone, valued at £7,266, for use as a flux in smelting.

BEACONSFIELD LIME PRODUCTS, FLOWERY GULLY

In producing lime and ground limestone for agricultural and chemical purposes, the two men employed quarried 829 tons of limestone valued at £1,932.

A. R. BEAMS, FLOWERY GULLY

Mr. Beams operated one kiln for burning limestone for building purposes and also produced limestone for agriculture and for the extraction metallurgy of aluminium. The average number of employees was six, and total production was 6,861 tons valued at £6,726.

R. K. SULZBERGER, FLOWERY GULLY

Six men were employed in the production of 7,466 tons of limestone, valued at £7,536, for chemical purposes.

OCHRE

Quantity produced—

	Tons	Value £
1918 to 1954	1,894	4,298
1955	6	18
1956	21	141
1957	22	148
1958	66	645
Total	2,009	£5,250

A. PEARSON, SPALFORD

Production of ochre from this pit was 21 tons, valued at £140.

NON-METALLIC MINERALS PTY. LTD., CARLTON

This company, reviewed under Kaolin, produced 45 tons of ochre, valued at £505.

PEBBLES

A. PEARSON & OTHERS, ULVERSTONE

The collection of pebbles for grinding was continued on the beaches around Ulverstone. The output was 746 tons, valued at £5,706.

SILICA

Quantity produced—

	Tons	Value £
1936 to 1954	124,678	67,474
1955	6,200	6,240
1956	5,392	7,479
1957	6,552	4,622
1958	6,639	6,068
Total	149,472	£91,883

A. PEARSON, MAWBANNA

A parcel of 14 tons, of value, £173, was sold as a moulding flux.

MOUNT LYELL MINING & RAILWAY CO. LTD., QUEENSTOWN

This company, reviewed under Copper, quarried 6,625 tons of silica, valued at £5,895, for use in the smelter.

3.—CONSTRUCTION MATERIALS

Quantities produced—	Cubic Yards	Value £
Building stone:		
Granite	51	1,820
Freestone	177	1,327
	228	£3,147
Crushed and Broken Stone:		
Basalt	17,826	18,672
Dolerite	352,847	639,200
Limestone	26,298	35,417
Other	38,201	53,781
	435,172	£747,070
Gravel	599,852	277,879
Sand	14,271	11,137

The largest producers were Government and Local Government authorities, accounting for 222,208 cubic yards of crushed and broken stone valued at £471,231, and 505,542 cubic yards of gravel, valued at £238,011.

GRANITE, COLES BAY

Mr. B. T. Cuthbertson operated this red granite building stone quarry for two quarters, two men being employed, as demand required. Output was 51 cubic yards.

FREESTONE, AUSTINS FERRY

This quarry was worked intermittently by Mr. Bedford and later by Mr. Kupsch, the total output being 177 cubic yards.

BASALT

This was quarried by Associated Forest Holdings Pty Ltd., for its roads in the Hampshire district.

DOLERITE

This rock, being both suitable and widespread, was quarried most extensively for road and concrete making by governmental authorities and commercial firms.

Details of the latter were as follows:—

Quarry	Men	Cu. yd.	Value £
Bain's, Dynnyrne	8	5,980	7,652
Grubb's, Moonah	7	19,684	24,478
Hobart, New Town	31	75,446	94,270
Launceston, Mowbray	12	23,391	30,418
Rouse's, St. Leonards	5	10,930	14,972
Queenborough, Dynnyrne	2	1,380	1,814

LIMESTONE

Mr. G. C. Weily quarried 20,090 cubic yards of limestone, of value £26,835, at Glenorchy for construction purposes. Twelve men were engaged. From the Melrose Agricultural Lime Quarries, Eugenana, 5,788 tons, valued at £6,798, were produced in addition to that for agriculture.

OTHER CRUSHED AND BROKEN STONE

Small quantities of other rock types were quarried for road making and filling in divers places. One of the principal operators was Devon Metal Supplies at Wivenhoe and East Devonport. At the former quarry 7,826 cubic yards of quartz schist, valued at £9,637, were broken out with a bulldozer and crushed; and at the latter place 5,176 cubic yards of quartz pebbles were gathered for crushing. The value was £7,380. Nelson Quarries Pty. Ltd. at Dynnyrne quarried 18,894 cubic yards valued at £31,035.

GRAVEL AND SAND

Clean sand and gravel were obtained from two main districts, Flowerdale and Beaconsfield, from numerous small pits. Respective production was 31,191 and 22,771 cubic yards. Mr. W. F. Margetts supplied 13,960 cubic yards valued at £5,029 from the former area. At Collinsvale Messrs Burr and Gordon supplied a total of 14,240 cubic yards valued at £9,523 for filling on a housing project.

4.—FUEL MATERIALS

COAL

Quantity produced—	Tons.	Value £
Prior to 1955	6,598,704	6,160,212
1955	299,221	604,803
1956	298,713	594,090
1957	268,140	534,111
1958	276,268	550,859
Total	7,741,046	£8,444,075

Inspector Besford reports that the average number of employees in coal mining was 284, of whom 201 were underground. The output showed a slight revival of 8,000 tons which, together with a reduction in employees, continued the upward trend in efficiency. The production per man-year was 1,370 tons for underground employees and 973 overall.

CORNWALL COLLIERY, ST. MARYS

This colliery employed an average of 118 persons and produced 108,640 tons valued at £206,536 at the mine bins. The production was 8,000 tons higher than last year, the increase being due to increased demand during the year.

Operations continued on the same pattern and production was chiefly from solid workings with a small portion from splitting pillars.

Lower seam conditions and inferior roof hampered the Continuous Miner but the machine appears to have negotiated the inferior section and conditions improved towards the end of the year. A large area beyond the downthrow fault has been developed by this machine and the miners will be moved into the area as the present sections become worked out. Conditions improved slightly in the new workings to the west, and the machines were able to operate with greater success.

MOUNT NICHOLAS COLLIERY, ST. MARYS

The Cornwall Coal Company, after operating for three quarters in the No. 2 seam ceased production which had amounted to 5,057 tons. Two men were employed in driving a prospecting tunnel into the old four-ft. seam situated between the six-ft. and the No. 2 seams. This seam was worked in the early days of the mine and a few samples collected for analysis were of good quality.

JUBILEE COLLIERY, ST. MARYS

This mine produced 19,427 tons valued at £43,711. The output was 400 tons less than last year for the same number of employees. Operations were on the same lines as the previous year and seam conditions remained normal. One section of the return airway was re-opened, but extensive falls still exist along parts of the airway and the re-opening of the whole length will take some time; two men are engaged on this work.

DUNCAN COLLIERY, FINGAL

The Cornwall Coal Company produced 57,916 tons, valued at £109,989 at the mine bins and employed an average of 50 men. Operations continued with machine in the left-hand section and hand mining in the right section. New sections were opened up on both sides of the main heading. The loading unit for the Machine Section was advanced and a belt conveyor was installed to operate in conjunction with it. Preparations are being made to install an endless rope haulage to replace the existing main and tail haulages to deal with the output from the Hand Mining Section.

Surface excavations have been carried out in the vicinity of the railway siding preparatory to the installation of a coal washing plant which will deal with coal from this mine and from the Cornwall Colliery also. It is expected that the plant will be in operation during the coming year.

FINGAL COLLIERY, FINGAL

This colliery produced 26,272 tons valued at £56,768 and employed an average of 24 men. The production was 3,300 tons less than last year with six less employees. Conditions deteriorated in the producing section and work was concentrated in a section near the outlet where conditions appeared better and the length of haulage was less.

BARBER'S COLLIERY, FINGAL

Mr. E. Barber increased production to 3,236 tons valued at £6,148 and employed an average of five men. An upthrow fault was met a short distance to the left of the main heading which cut off the workings on that side, and also caused the main heading itself to be stopped. Production has since been obtained from two places advancing into the solid to the west. Surface excavations east of the mine have been carried out by bulldozer in order to locate the seam beyond the fault, and a new tunnel will be put in when the seam has been uncovered.

NEW STANHOPE COLLIERY, AVOCA

The production from this colliery increased to 9,613 tons, valued at £21,850 and an average of 14 men was employed. The production was 4,000 tons higher than last year and it is expected that production will be further increased, as the seam has maintained a constant thickness and roof conditions are very good. The coal is of good quality, so that there should be a ready market. A main ventilating fan was installed and another drive is advancing towards the surface on the right side of the main heading, to provide a third outlet, and also act as a second intake airway. This should ensure very good ventilating conditions for some considerable time.

MOUNT CHRISTIE COLLIERY, AVOCA

Mr. R. C. Fenton produced 1,746 tons, valued at £3,772 and two men were employed. The last production from this mine was in 1947 when 841 tons were produced. Work has been carried out intermittently since 1947 but no coal has been sold, the output having been stockpiled at the mine. Some of the stockpiled coal is included in the recorded production for this year. The workings are very close to the granite contact and the area is extensively disturbed, limiting the operations.

MERRYWOOD COLLIERY, AVOCA

This colliery produced 35,584 tons, valued at £63,901 at the mine bins and employed an average of 23 men. Production was 2,000 tons less than last year, due to reduced demand. A large slip movement from the side of the hill caused additional overburden removal in the open cut, but a large stripped area has been maintained. The coal-washing plant continued to function satisfactorily and the whole production was washed at the mine. Underground operations continued in a seam which kept constant and free from faulting. Inferior roof conditions gave some trouble in parts of the mine but generally conditions have been good.

LLANGLOH COLLIERY, HAMILTON

The Hamilton Coal Company produced 6,124 tons, valued at £20,464 and an average of 14 men was employed. The workings advanced between two areas of old pillars and difficult conditions were experienced, especially in hauling the coal out of the section due to the tortuous route and water penetration of the floor, which became very soft. The section was abandoned at the end of the year and a new section has been opened closer to the outlet.

SANDFLY COLLIERY, KAOOTA

Mr. O. L. Roberts produced 2,006 tons, valued at £5,247 and four men were employed. The thickness of the seam remained the same as last year but the dip flattened considerably. The coal is chiefly used for lime burning at a carbide works.

ILLAMATHA COLLIERY, SPREYTON

Messrs. Bound Bros. produced 647 tons valued at £2,865, and two men were employed. Production was less, due to additional work in negotiating faults.

5.—FOREIGN ORES

The total value of the products of three large works treating ores imported into Tasmania was approximately £15,000,000.

ALUMINIUM

The Australian Aluminium Production Commission treated imported bauxite at Bell Bay to produce 10,889 tons of aluminium. An average of 756 persons was employed and local products such as limestone and coal were consumed in the processes.

ZINC CADMIUM COBALT OXIDE AND SUPERPHOSPHATE

ELECTROLYTIC ZINC CO. OF AUSTRALASIA LTD., RISDON

This Company, described under Zinc, produced zinc from Broken Hill concentrates together with small quantities of cadmium and cobalt oxide as by-products. The sulphuric acid derived from roasting the concentrates was applied to phosphate rock from Nauru and Ocean Island to give superphosphate fertilizers.

TITANIUM DIOXIDE

Titanium dioxide is produced at Heybridge by Australian Titan Products Pty. Ltd. from imported ilmenite concentrate. During the year 16,856 tons of Western Australian ilmenite were treated to produce 7,901 tons, and an average of 326 people was employed.

The Company is in process of greatly increasing its capacity and to that end the necessary new buildings have been completed, as well as a new reservoir and pipeline feeding from the Blythe River.

STATISTICS OF MINING COMPANIES

Return showing the Amounts Paid in Dividends by Mining Companies during the Year ending 31st December, 1958.

Mines	Dividends
	£
Coal	12,337
Copper	203,437
Scheelite	200,000
Tin	4,736
Wolfram-Tin	94,792
*Zinc	1,800,000
Total	£2,315,302

* NOTE.—Represents total dividends from Tasmanian and ex-Tasmanian profits.

Return showing the Mining Companies Registered during the Year ended 31st December, 1958.

Number of Companies	Capital
Nil.	....

No agents for foreign companies under the Mining Companies (Foreign) Act, 1884, were registered. No syndicates under Part V of the Mining Companies Act, 1884, were registered.

REVENUE

Return showing the Revenue Collected during the Year ending 31st December, 1958.

Head of Revenue	Amount
	£
Public Works and Services—Mines Department	7,181
Rent of Auriferous and Mineral Lands	6,959
Fees, Auriferous and Mineral Lands	1,115
Survey Fees	598
Fees under the Explosives and Inflammable Liquids Act	6,227
Rent and Sale of Government Property	107
Total	£22,187

Comparative Statement of Revenue from Mines, being Rents, Fees, Storage of Explosives, &c., Paid to the Treasury during the Years 1953 to 1958.

Year	Amount
	£
1953	13,291
1954	11,757
1955	22,858
1956	24,260
1957	23,827

The above Statement does not include Stamp Duties upon Transfer of Leases.

LEASES AND LICENCES

Return showing the Total Number of Leases and Licences in Force on 31st December, 1958.

Leases and Licences	Number	Number of Sluiceheads	Area (Acres)
Barytes	1	....	10
Bauxite	1	....	130
Clay	9	....	221
Coal	45	....	9,865
Copper	1	....	33
Easement Licences	61	....	704
Granite	3	....	25
Gold	22	....	638
Iron	1	....	50
Limestone	11	....	398
Minerals	51	....	13,857
Nickel	8	....	369
Osmiridium	1	....	10
Ochre	1	....	24
Scheelite	8	....	556
Silica	3	....	35
Silver-Lead	13	....	490
Stone	23	....	2,030
Sand	1	....	5
Tin	166	.....	6,527
Tin-Wolfram	4	....	370
Wolfram	2	....	15
Wolfram-Gold	3	....	120
Water Licences	167	884	1,012
Total	606	884	37,494

Return showing Total Number and Area of Leases and Licences Issued during the Year ended 31st December, 1958.

Leases and Licences	Number	Area (Acres)	Sluiceheads
Limestone	1	53	....
Minerals	3	218	....
Scheelite	5	275	....
Silver-Lead	1	50	....
Tin	3	24	....
Water and Easement Licences	5	13	35
Total	18	633	35

Return showing Total Number and Area of Leases and Licences Applied for during the Year ended 31st December, 1958.

Leases and Licences	Number	Area (Acres)	Sluiceheads
Coal	3	925	....
Easements	7	32	....
Gold	3	55	....
Iron	1	8	....
Limestone	1	14	....
Sand and Gravel	2	2,873	....
Lead-Zinc	1	80	....
Mica-schist	2	80	....
Minerals	9	234	....
Scheelite	1	37	....
Tin	14	1,047	....
Stone	4	13,024	....
Water Licences	9	....	118
Total	57	18,409	118

Return showing the Total Number and Areas of Authorities to Prospect Issued during the Year ended 31st December, 1958.

Type of Authority	Number	Area available for Occupation (Acres)
Permits to enter on leased Crown Land and private land including owners' consents	28	107,669
Special prospectors' licences	25	7,234,611
Prospectors' licences	71	3,550
Miners' Rights	81	40
Total	205	7,345,870

MINERAL PRICES

Table showing the Average Australian Annual Prices for Minerals During Recent Years.

Mineral	1955	1956	1957	1958
Copper per ton	£ 448 7 3	£ 421 16 0	£ 340 4 9	£ 307 13 5
Lead per ton	£ 128 10 5	£ 140 7 2	£ 115 4 3	£ 87 5 8
Zinc per ton	£ 115 5 3	£ 122 2 6	£ 102 7 7	£ 91 7 11
Tin per ton	£ 956 4 2	£ 1,014 5 8	£ 990 19 8	£ 997 6 7
Silver per oz.	£ 0 7 7	£ 0 8 3	£ 0 8 2	£ 0 7 11
Osmiridium per oz.	£ 70 0 0	£ 90 0 0	£ 90 0 0	£ 80 0 0
Gold per fine oz.	£ 15 12 6	£ 15 12 6	£ 15 12 6	£ 15 12 6
Wolfram per unit (WO_3)	253/4	305/–	148/5	91/11
Scheelite per unit (WO_3)	253/4	305/–	148/5	91/11

MINERAL PRODUCTION SINCE 1880

Quantity and Value of Mineral Production as at 31st December, 1958

Mineral		*Total Quantity*	*Value £A*
METALLIC MINERALS—			
Antimony	(tons)	3	1,017
Bismuth	(tons)	84	29,644
Cadmium	(tons)	1,068	1,054,371
Cobalt Oxide	(tons)	9	6,599
Copper (Blister) to 1918 (now shown under Silver and Copper)	(tons)	166,600	13,788,527
Copper Matte	(tons)	6,277	133,736
Copper Ore to 1918—(now shown under Copper)	(tons)	41,769	577,873
Copper from 1919	(tons)	357,501	46,453,018
Crocoite	(specimens only)	..	473
Gold	(fine oz.)	2,472,029	13,279,514
Ilmenite	(tons)	550	1,256
Iron Oxide (including Hematite, Limonite and Magnetite)	(tons)	81,988	77,369
Lead (from1919)	(tons)	282,200	14,491,270
Manganese	(tons)	1	3
Manganese Dioxide (from 1957)	(tons)	253	2,148
Monazite	(tons)	33	607
Nickel	(tons)	223	40,518
Osmiridium	(oz.)	31,085	708,471
Pyrites	(tons)	1,202,534	2,343,903
Rutile	(tons)	1	18
Scheelite	(tons)	15,310	16,544,276
Silver Lead Ore to 1918 (now under Silver and Lead)	(tons)	1,083,898	6,429,219
Silver from 1919	(fine oz.)	36,057,366	7,849,823
Sulphur as Sulphuric Acid (from 1957)	(mono tons)	43,761	195,401
Tin	(tons)	143,131	30,409,499
Wolfram	(tons)	10,446	6,800,888
Zinc	(tons)	553,710	28,796,214
Zinc Sulphate (from 1957)	(tons)	315	11,655
NON-METALLIC MINERALS—			
Asbestos	(tons)	3,980	17,142
Barytes	(tons)	2,196	8,138
Clay—(from 1958)			
Brick	(cubic yds.)	96,545	67,594
Other	(cubic yds.)	24,986	6,582
Dolomite	(tons)	13,239	39,480
Graphite	(tons)	40	107
Kaolin	(tons)	107,089	421,049
Limestone—			
Agricultural and other	(tons)	448,992	505,127
Chemical and Metallurgical	(tons)	3,953,920	2,083,869
Carbide	(tons)	503,532	582,599
Cement	(tons)	3,188,783	1,745,807
Ochre	(tons)	2,009	5,250
Pebbles (from 1957)	(tons)	1,353	10,998
Silica	(tons)	149,472	91,883
Talc	(tons)	333	1,077
FUEL MINERALS—			
Coal	(tons)	7,741,046	8,444,075
Shale	(tons)	41,572	31,231
CONSTRUCTION MATERIALS			
Building Stones—			
Granite (Red)	(cubic yds.)	1,955	33,062
Freestone	(cubic yds.)	177	1,327
Gravel (from 1958)	(cubic yds.)	599,852	277,879
Sand (from 1958)	(cubic yds.)	14,271	11,137
Crushed and Broken Stone—(from 1958)			
Basalt	(cubic yds.)	17,826	18,672
Dolerite	(cubic yds.)	352,847	639,200
Limestone	(cubic yds.)	26,298	35,417
Other	(cubic yds.)	38,201	53,781
			£205,159,793

MINERAL PRODUCTION FOR THE YEAR ENDED 31st DECEMBER, 1958

Mineral		*Total Quantity*	*Value £A*
METALLIC MINERALS —			
Cadmium	(tons)	56	84,663
Cobalt Oxide	(tons)	.66	742
Copper	(tons)	10,855	3,330,034
Crocoite	(specimens only)	..	473
Gold	(fine oz.)	20,976	327,749
Iron Oxide	(tons)	4,266	5,418
Lead	(tons)	12,902	1,124,977
Manganese Dioxide	(tons)	99	840
Osmiridium	(oz.)	42	3,424
Pyrites	(tons)	68,110	204,330
Scheelite	(tons)	731	438,365
Silver	(fine oz.)	1,348,456	533,618
Sulphur as Sulphuric Acid	(mono tons)	20,606	92,726
Tin	(tons)	883	883,111
Wolfram	(tons)	495	188,639
Zinc	(tons)	29,023	2,650,370
Zinc Sulphate	(tons)	157	5,809
NON-METALLIC MINERALS—			
Dolomite	(tons)	2,585	7,437
Kaolin	(tons)	3,302	20,469
Limestone—			
Agricultural	(tons)	10,722	22,795
Chemical and Metallurgical	(tons)	23,458	30,777
Carbide	(tons)	21,104	42,237
Cement	(tons)	179,171	161,254
Other	(tons)	573	1,110
Ochre	(tons)	66	645
Pebbles	(tons)	746	5,706
Silica	(tons)	6,639	6,068
Clay—			
Brick	(cubic yds.)	96,545	67,594
Other	(cubic yds.)	24,986	6,582
FUEL MINERALS—			
Coal	(tons)	276,268	550,859
CONSTRUCTION MATERIALS—			
Crushed and Broken Stone—			
Basalt	(cubic yds.)	17,826	18,672
Dolerite	(cubic yds.)	352,847	639,200
Limestone	(cubic yds.)	26,298	35,417
Other	(cubic yds.)	38,201	53,781
Building Stone—			
Granite	(cubic yds.)	51	1,820
Freestone	(cubic yds.)	177	1,327
Gravel	(cubic yds.)	599,852	277,879
Sand	(cubic yds.)	14,271	11,137
Total Value with Australian Metal Prices			11,838,054

MANUFACTURED PRODUCTS—

Product	*Total Quantity (tons)*	*Value £A*
Carbide	10,805	Not Available
Cement	147,208	Not Available
Ammonium Sulphate	34,810	1,180,878
Acetylene Black	182	Not Available

PRODUCTION FROM OTHER THAN TASMANIA ORES—

Aluminium	10,889	Not Available
Cadmium	236	357,920
Cobalt Oxide	24	26,501
Superphosphate	83,783	1,152,016
Titanium Dioxide	7,901	1,951,938
Zinc	91,664	8,475,775
		11,964,150

Average number of men employed 8,309

DEPARTMENTAL ACTIVITIES

AID TO MINING

Financial assistance under the Aid to Mining Act, 1927, was made available to aid projects where technical officers had reported that prospects warranted the granting of assistance. Loans were advanced to purchase plant, to repair flood damage, for sinking and driving and for removal of plant to a new area. Advances totalled £729.

Tribute parties continued to be engaged in small scale operation at the old Mt. Bischoff Tin Mine, Waratah. Tributors are required to pay a royalty at the rate of 2½ per cent of the proceeds of tin sold and £150 was received.

The Aid to Mining Act, 1927, was amended during the year to enable assistance to be granted on less restrictive terms in certain cases, to extend the limit of the amount which may be advanced and to enable the Department to purchase mining equipment for hire to persons engaged in testing mineral deposits. The amendments are referred to in more detail under the heading of Legislation.

Plans are proceeding for the purchase of a portable compressor, rock drills, air winch and a pump and the complete unit will be available for hiring during 1959.

STATEMENT OF RECEIPTS AND PAYMENTS OF THE MINING TRUST FUND FOR THE YEAR ENDED 31ST DECEMBER, 1958

Receipts	£	s.	d.
Balance at 31st December, 1957	8,506	16	6
Repayment of loans	911	14	6
Interest on loans	47	18	3
Tribute royalty	150	6	6
Transfer of balance of the Drilling Trust Fund as provided by the Mining Act, 1958	6,008	4	10
	£15,625	0	7

Payments	£	s.	d.
Assistance	728	18	0
Insurance	0	8	11
Total payments	729	6	11
Balance to next Account	14,895	13	8
	£15,625	0	7

DRILLING

During the year seven drilling plants were in operation, consisting of four diamond, and three percussion drills. Boring was carried out for alluvial and reef tin, lead and zinc, iron ore, limestone, bridge foundations, supplies of underground water and building foundations.

DIAMOND DRILLING

The main undertaking in diamond drilling for the year was the testing of the Savage River Iron Ore deposits by Associated Diamond Drillers operating under contract to the Department. Exceptionally rugged nature of the country made it expedient to transport the drilling equipment to the site by helicopter. This was accomplished in the space of four days and at the end of operations the equipment was freighted out in two days.

Two bores were completed, the details of which are as follows:—

	Dip.	Direction	Depth	Ore intersected
1	41°	103°	668 ft.	from 325 ft. to 630 ft.
2	45°	303°	863 ft.	from 313 ft. to 718 ft.

At Tenth Legion iron ore deposits near Zeehan bore number two was continued from 140 feet to 309 feet. Drilling then commenced at Kapi lead and zinc deposits. Bore number one was drilled to a depth of 275 feet. Bore number two was completed at 227 feet. Drilling then started on the Melba tin lease in an adjacent area and a bore completed at 327 feet.

Drilling on the East Bank of the Tamar River at Whirlpool Reach concluded the testing for bridge foundations.

Hole No. 5 was completed at 140 feet.
Hole No. 6 was completed at 52 feet.
Hole No. 7 was completed at 50 feet.

Drilling was undertaken at Railton seeking limestone deposits.

Hole No. 1 was completed at 201 feet.
Hole No. 2 was completed at 202 feet.
Hole No. 3 was completed at 115 feet.

Drilling from a barge on the river Derwent at Hobart on behalf of the Public Works Department, 15 bores were completed with combined use of percussion and diamond drill. Bores ranged in depth (from surface of water) from 33 feet to 232 feet.

Total of actual footage percussion drilling—857 feet.

Total of actual footage diamond drilling—180 feet 4 inches.

Foundation tests were bored at Talbot Road, Launceston. Hole No. 1 was drilled to depth of 115 feet.

PERCUSSION DRILLING IN OTHER AREAS

The percussion drills were in constant use. Three bores totalling 87 feet were completed for the Tasmanian Government Railways bridge foundation testing at Penguin. Seven bores totalling 348 feet were completed for the Tasmanian Government Railways bridge foundation testing at Avoca.

Boring for alluvial tin at South Mount Cameron resulted in completion of six bores totalling 895 feet 6 inches. Also in the Gladstone District 18 bores were completed totalling 1,606 feet.

Boring for Underground Water Supplies was carried out at Smithton, Irishtown, Montumana, Forest, Trowutta, Mella, Triabunna and Spring Bay.

Sixteen bores were completed in the Smithton area varying in depths from 26 feet to 124 feet of which 12 bores were wet with output ranging from 20 to 400 gallons per hour. The total footage bored was 1,416 feet.

In the Triabunna district five bores were completed, all producing water with output ranging from 120 gallons to 200 gallons per hour. The depths of bores ranged from 62 feet to 141 feet. Total footage drilled was 434 feet.

Details of Expenditure on Drilling During the Year ended 31st December, 1957.

Plant and Location	Amount
G 33 Percussion Drills—	£
Mount Cameron	760
Smithton district	1,461
Gladstone	1,270
Avoca	620
Triabunna district	670
E-1000 Diamond Drill—	
Mount Nicholas	644
Junior Straitline Diamond Drill—	
Whirlpool Reach	410
Launceston	269
Goldfields No. 10 Diamond Drill—	
Zeehan district	2,934
Percussion and diamond drilling—	
Hobart Bridge	1,871
Total	£10,909

GEOLOGICAL

The geological section of the Department has continued to provide services for those engaged in the mining industry and in engineering projects where advice on rock structures was required. Examination of possible sources of underground water was continued for the benefit of primary producers and geological information was made available to the general public as required.

The work of the Department in producing geological maps was advanced by the publication of Buckland and Middlesex sheets and the Regional Establishments at Sheffield and Port Davey undertook full programmes of field work to advance mapping from those centres.

Activities in the Port Davey area have been limited by staff shortages, but the services of another geologist have become available temporarily and it is proposed to have two parties engaged in full time field work for from three to four months under favourable weather conditions. This approach to the mapping of the remote south-western area of the State is expected to result in large areas being geologically mapped over the next few years.

It is pleasing to report that after a lapse of some four years it has been possible to re-open the Zeehan Establishment which serves the important mineral fields of the West Coast. A Regional Geologist and a Geologist have been stationed there and a vigorous programme of field work has commenced. The use of a helicopter is expected to accelerate work in this area where previously much field time has had to be spent in foot travel through difficult terrain.

The percussion drilling plants operated by the Department were maintained in water boring in the Smithton and Triabunna districts and diamond drills were engaged in testing tin, iron and lead-zinc deposits near Zeehan, and limestone deposits on the North-West Coast. The Department has also co-operated with the Public Works Department in test boring at Whirlpool Reach on the Tamar and at the site of the new Hobart Bridge. Testing by diamond drilling has also been undertaken as part of the investigation of the unstable housing area at Lawrence Vale Road, Launceston.

PUBLICATIONS

Publications printed for issue in the year 1958 included:—

1. Geological Survey Bulletin No. 45, "The Round Mount District", by I. B. Jennings, B.Sc.
2. Technical Reports No. 2, covering geological and ore-dressing investigations made in 1957.
3. Middlesex Sheet No. 45 of Geological Atlas, one mile series.
4. Buckland Sheet No. 76 of Geological Atlas, one mile series.

Institutions on the publications exchange list now number over 200, of which approximately one third are Australian.

CHEMICAL AND METALLURGICAL

A total of 3,693 analyses was carried out on ores, minerals, rocks, alloys, clays, coal, water and mill and research products associated with ore dressing investigations.

Research into or dressing problems and advising producers on milling operations were prominent amongst the activities of this section. The 26 investigations completed during the year included:—

Beneficiation of magnetite ores and coal;

Recovery of tin from a sample in which cassiterite was associated with sulphides;

Concentration of tin and wolfram from very fine slimes obtained by dewatering coarse jig tailings;

Examination of mill tailings to determine cause and remedy for losses of tin;

Flotation tests on tin-bearing samples from various localities; and

Investigations into treatment of nickel ores.

The appointment of a Ceramic Technologist was arranged during the year and his services have been of immediate value to those engaged in brickmaking and other industries using ceramics as a raw material. The Department is importing special equipment so that testing of all types of clay for industrial uses may be undertaken.

NEW LABORATORY

A further step was taken in advancing the interests of the mining and allied industries when the foundation stone of new chemical and ore dressing laboratories at Wellington Street, Launceston, was laid by the Minister for Mines (Hon. E. E. Reece) on Friday, May 23rd, 1958. The new buildings costing in excess of £50,000 are modern in design and incorporate the latest research equipment. They will enable the chemical and metallurgical sections of the laboratory which have had to function in separate parts of Launceston to operate as a single unit. This will add to the efficient services already being provided and will enable the Department to extend its assistance and advice to industry.

DECISIONS OF THE WARDEN'S COURT

APPLICATION FOR FORFEITURE OF LEASE 433P/M AT SMITHTON.

R. A. Hales v. C. B. M. & F. M. Fenton

This case was heard by the Warden of Mines for the North-Western and Western Mining Districts (Mr. L. C. P. Wilson) at Devonport. The grounds for the application were that the lessees had failed to satisfy the provisions of the Mining Act, 1929, as contained in the lease, which require the holder to expend thereon not less than £3 for every acre thereof in respect of each period of 12 months of the term granted by the lessee. After hearing both parties the Warden was satisfied that the expenditure covenant had not been complied with, but taking into account that the lessees had become the registered holder of the lease by transfer recorded about five months before the application for forfeiture was lodged and also acknowledging that the lease relates to private land the surface of which would be destroyed by mining operations the Warden was of the opinion that the lessees should have an opportunity of proving their bona fides. The Warden ordered a fine of £50 and ordered the lessees to pay the applicant's costs. In his finding the Warden pointed out that a penalty must be imposed as a matter of public policy as the covenants of a mining lease are not a mere matter of form which can be lightly disregarded.

APPLICATION FOR FORFEITURE OF LEASE 34M/53 AT JANE RIVER.

R. K. E. Schmiedecke v. B. A. A. Davie.

This case was heard by the Warden of Mines for the Central Mining Division (Mr. G. F. Sorell) at Hobart. There was no appearance by the lessee and the Warden declared the lease forfeited and awarded the applicant a preferential right to the lease.

MINE MANAGER'S CERTIFICATE

During the year the Board of Examiners granted a certificate of Competency as Mine Manager (Metalliferous Mines) to Mr. George Edwin Osborne.

Certificates were issued by the Board without examination to the following applicants who presented Mine Managers' Certificates issued by recognised authorities in other states or countries:—

Metalliferous Mine Certificate—Keron Floyd Howey Walker.

Colliery Certificate.—Albert Longworth.

STAFF

The following were the staff movements during the year:—

Officer and Position.	Remarks.
James, Miss S., Typist	Transferred to Police Department.
Middleton, H. J., Clerk	Transferred to Department of Health Services.
MacDonald, J., Clerk	Appointed.
Cumming, A. B., Registrar of Mines	Promoted.
Blissett, A. H., Regional Geologist	Promoted.
Bonham, D. R., Inspector of Explosives and Inflammable Liquids	Appointed.
Matthews, L., Geologist	Appointed.

OBITUARY

It is with regret that I must record the sudden death of Mr. C. B. Askey, Registrar of Mines. Mr. Askey was an officer of the Department for thirty years and Registrar of Mines since 1948.

MINES DRAUGHTING SECTION

Year 1958.

Number of working plans in use and kept up-to-date	238
Working plans renewed and additional plans brought into use	15
Manuscripts brought up-to-date for reproduction	4
Lithographs printed	108
Lithographs entered to date for sale	181
Miscellaneous plans and tracings prepared	40
Mineral leases applied for 4,298 acres	37
Water rights, dam site &c. applied for, 15 miles water race, 133 sluice heads water and 35 acres dam sites	13
Mineral diagrams drawn	19
Mineral plans drawn	10
Special prospectors' licences current for total of 8,288,741 acres	40
Permits to enter on leased Crown land and private property 38,300 acres	32
Mineral leases drawn	84
Mineral leases drawn and described subject to survey	32
Underground mining plans examined and checked	2
Photostats of diagrams forwarded to Launceston Office	32

GEOLOGICAL AND ENGINEERING DRAUGHTING SECTION

This section has been responsible for the preparation of geological maps for inclusion in field reports, base maps for regional geological work, maps for Departmental publication including requirements for colour separation in printing, and engineering drawing for drilling and other Departmental requirements.

EXHIBITION

A display of uranium minerals, featuring species which occur in Tasmania, was arranged by the Department for the Australian Atomic Energy Commission's Exhibition in Hobart.

APPRECIATION OF SERVICES

Appreciation is recorded of the services rendered by officers of the Department, including officers of the Mines Draughting Section, Warden of Mines and Registrar of Mines in the several mining districts.

J. G. SYMONS, Director of Mines.

APPENDIX I

ANNUAL REPORT OF THE GEOLOGICAL SURVEY OF TASMANIA, 1958.

H. G. W. KEID, M.Sc., Chief Geologist.

For the greater part of the year 1958 the work of the Geological Survey was carried out from the three centres of Hobart, Sheffield (transferred from Lorinna) and Port Davey. The Regional Establishment at Zeehan was re-opened in mid-September after the promotion of Geologist A. H. Blissett to the position of Regional Geologist.

Publications by the Department for the year 1958 are:—

(1) Geological Survey Bulletin No. 45, "The Round Mount District" by I. B. Jennings, B.Sc.

(2) Technical Reports No. 2, 1957.

Two sheets of the Geological Atlas, one-mile series, were printed for issue:—

(1) Middlesex Sheet No. 45.
(2) Buckland Sheet No. 76.

The following subjects have been investigated and reports written by the various officers of the Department:—

Iron

The Senior Geologist, T. D. Hughes, has visited the iron deposits of the Savage River and of the Tenth Legion.

Tin

The Chief Geologist, accompanied by the Drilling Superintendent, K. L. Evans, visited the Endurance Mine during a drilling campaign to test extensions of their known lead.

The Senior Geologist visited alluvial tin deposits at Upper Natone and at Schouten Island.

Geologists A. H. Blissett and A. B. Gulline completed their investigation of the Rossarden-Storeys Creek area prior to the preparation of a Bulletin for publication.

Nickel

Further investigation of the Beaconsfield nickel area was made by the Senior Geologist and some sampling was done by Regional Geologist M. Z. Stefanski.

Uranium

There has been little activity in the field of uranium.

The Senior Geologist visited alleged occurrences on Flinders Island and at Riana.

Geologists L. Matthews and A. B. Gulline carried out a scintillometer survey in the Storeys Creek area.

Clay and Brickmaking Materials

Clay deposits near Launceston and brickmaking materials near Granton and Mt. Rumney were examined by the Senior Geologist.

Geologist F. Blake examined brick-making materials at Berriedale, Mt. Rumney and West Hobart.

Coal.

The Senior Geologist tendered advice relative to a new heading at the Llangloh Coal Mine and further examined coal deposits at Stanhope, Barbers Coal Mine and at Schouten Island.

Geologists A. B. Gulline and K. L. Burns each examined the coal occurrences in the Mount Lloyd and Plenty districts.

Limestone

Preparatory to a drilling campaign under the supervision of the Drilling Superintendent, K. L. Evans, the Senior Geologist visited the quarry of the Australian Commonwealth Carbide Company at Ida Bay to select sites for diamond drilling.

Molybdenum

An occurrence of molybdenum in granite in the Scottsdale area was examined by the Senior Geologist.

Chromite

The alluvial chromite deposit in the Montagu Swamp area near Smithton was again visited by the Senior Geologist.

General and Regional Geology

From the Hobart centre general and regional geological investigations were carried out as follows:—

Geologists A. H. Blissett and A. B. Gulline in the Rossarden-Storeys Creek area for the preparation of Geological Survey Bulletin No. 46 (to be published).

The Senior Geologist investigated areas in the Buckland Quadrangle and on Schouten Island.

Geologist F. Blake continued investigations in the Buckland and Longford areas.

Regional geological mapping by the officers of the Regional Establishments continued and is outlined in separate reports.

Underground Water

The possibility of obtaining supplies of underground water was investigated in many parts of the State by various officers of the Department, whilst Geologist A. B. Gulline made an extensive investigation of the underground water resources of the Smithton district preparatory to the publication of Water Resources No. 5.

Mineralogy and Petrology

The Mineralogist and Petrologist, Mr. G. Everard, continued his investigations for and tendered advice to both officers of the Department of Mines and the public generally.

Drilling

During the year the Departmental drilling plants were occupied in diamond drilling for iron, limestone and clay resources and for testing of foundations, whilst the percussion drills continued operations for underground water and for foundations.

Engineering Geology

The Senior Geologist has tendered advice relative to bridge foundations at Penguin and at Whirlpool Reach in the Tamar River and has investigated the cause and means of arresting landslides at Glenora and near Burnie.

A new heading of the Llangloh Coal Mine was laid out.

Geologist F. Blake advised the Railway Engineers during tests for foundations at the site of the new railway bridge at Avoca.

Reports of the individual officers are appended.

HOBART CENTRE

The Chief Geologist, H. G. W. KEID, M.Sc., M. Aus. I.M.M. reports:—

Apart from work of a supervisory nature about two months were spent in the Gladstone district where boring was carried out to test the extension of the alluvial lead on which the Endurance Tin Mining Company is operating. Visits were paid to Triabunna, Forest, and Smithton in connection with underground water resources; and to Gladston to examine an alleged uranium deposit, and tin deposits prior to the granting of Aid to Mining. Smithton was also visited to inspect hot springs and iron deposits resulting from their action.

Senior Geologist T. D. HUGHES, B.Sc., reports:—

Interest continued in the testing of iron ore resources in the western region. Two bores were concluded at the Tenth Legion Area near Zeehan. The information gained from these and from previous adit development indicates that the ore becomes more sporadic at depth and that these deposits, though small and of low grade, can be easily concentrated and may yet be used as an adjunct to the larger Savage River deposits. A commencement was made on the construction of a road to the southern portion of the Savage River deposits preparatory to a drilling programme in this area.

A report was prepared on a molybdenite prospect near Scottsdale and further investigations were made on the nickeliferous clays near Beaconsfield. Further visits were paid to alluvial tin workings at Upper Natone and to alluvial chromite deposits at Montagu Swamp.

Investigations of alleged uranium discoveries, that had received wide publicity by press and radio, at Flinders Island and Riana, revealed that no recognisable uranium minerals existed in either place, nor was there any greater radio-activity than could be expected in a 'hot' granite.

Advice was given on the siting of a new heading at Llangloh Colliery; sampling and calculation of reserves undertaken at Stanhope Colliery and a report prepared on a new coal mine, (Barbers) near Fingal.

Other non-metallics investigated were brick-making materials at Granton and Mt. Rumney, a clay deposit near Launceston and a deposit of fine silica near Burnie. A survey was made and bore holes sited at the Australian Commonwealth Carbide Company's Quarry at Ida Bay.

Underground water supplies were investigated at Orford, Roches Beach, West Tamar, Westbury, Symons Plains, Forest and Flinders Island.

Sites were selected and later several visits paid to the departmental drills at Kapi Creek and Melba at North Dundas and the Razorback at Dundas. The first two prospects revealed sulphide minerals at depth but nothing of economic importance. At the Razorback, three bore holes revealed interesting tin mineralization in the sulphide zone.

Departmental drills testing bridge foundations at Whirlpool Reach and limestone deposits at Railton were also visited.

Advice was given on geological factors influencing various engineering prospects. These included a railway bridge site at Penguin, a new siding at Fingal and earth and rock slips at Glenora and Burnie.

In February a helicopter was chartered and a landing made on the summit of Iron Bound Range in South-Western Tasmania. A journey on foot was made from there to Bathurst Harbour, the object of which was to observe a cross section of the rocks in this area.

Late in the year a geological survey was made of Schouten Island. Besides an assessment of tin and coal prospects a geological map of the Island was prepared.

Advice was given at various times to the tributors of Waratah.

General geological mapping was continued towards the compilation of the Buckland Sheet and the projected 8 inch Geological Map of Tasmania.

A meeting of the Committee of the Tectonic Map of Australia was attended in Melbourne.

Geologist F. BLAKE, A.M. Aus. I.M.M., reports:—

Regional geological mapping relating to the Buckland National Map was completed in the first five months of the year. Mapping of the Longford sheet commenced in June and was continued until December.

The possibilities of obtaining supplies of underground water were investigated at Berriedale, Montumana, Waterhouse, Cambridge, Orford and Oyster Bay and, in the last four localities, boring for water was recommended.

Examinations connected with the use of brick-making materials were undertaken at Berriedale, Mt. Rumney and West Hobart, and the required reports submitted.

Visits were made to drilling operations at Avoca and advice tendered to engineers regarding railway bridge foundations.

Bauxite areas near Ouse were examined in relation to an application for removal of road gravel.

As the Department of Mines representative on the Nomenclature Board of Tasmania, the meetings of the board were attended throughout the year and, in addition, details of numerous place names were investigated.

Geologist K. L. BURNS, B.Sc., reports:—

January was spent in regional mapping in the Mole Creek area, investigating an iron ore deposit on Mt. Claude, and in logging coal bores from Mt. Lloyd.

In February, a report on the geology of Mt. Lloyd area was prepared to include the results of drilling and detailed surveying. The central highlands were crossed from Lake St. Clair to Mole Creek, a week being spent in the Pine and Narcissus valleys to prepare reconnaissance maps of the southern half of the scenic reserve. A fortnight was spent encamped near Lake Ayr, supplied by air drop, and from this base camp a preliminary survey of the Pelion Copper Mines, stratigraphy of Douglas Creek, and mapping of the northern flanks of the Pelion Range were completed. Coal samples were collected throughout the area for pollen analysis. An examination was made of the charts of Preston and Lonah, in connection with the stratigraphy of Sheffield Quadrangle.

In March the coal outcrops at Plenty were relocated, and samples collected for pollen analysis. A regional plan of the Mt. Lloyd area and a report on the results of new coal analyses were prepared.

In April the bismuth deposits at Mt. Stormont, Moina, were investigated.

May was spent in mapping the Forthside area in connection with the new Devonport water scheme, and in regional mapping of the Devonport Sheet between the Don and Forth Rivers. In July this mapping was extended east to Latrobe, i.e. to cover the Mersey Coal Basin. Periods not spent in field work have been occupied, under a special leave of absence, with studies in structural geology at the University of Tasmania.

September was spent in mapping Precambrian strata between the Forth and Gawler Rivers, and mapping in October was on the Cambrian sequence west of the Gawler. In December the country was mapped to the Leven, part of the eastern side of the Dial Range, and north and west of the Dial Range.

Mineralogist and Petrologist G. EVERARD, B.A., A.M. Aus. I.M.M., reports:—

A decrease was observed in the number of specimens received for identification this year from the general public; but this was offset by a considerable increase in the amount of material sent in by Departmental officers. The assistance required in dealing with the greater volume of material was obtained from various officers of the Department.

Approximately sixty specimens and samples of rocks and minerals including sands, clays and concentrates were received from the general public for identification.

Reports made on material collected by Departmental officers included the following:—

Polished specimens of core from D.D.H. M23, the Five Mile, Zeehan.

Polished sections of manganese ore, Olivers Hill.

Rock specimens from Ironbound Range.

Core from D.D.H's. 1 and 2, Tenth Legion Mine.

Rock and mineral specimens, Stormont Bismuth Mine, Moina.

Molybdenite-bearing granites, Mt. Stronach.

Tertiary limestones and lava, Whitemark, Flinders Island.

Rock specimens from Beulah.

Core from D.D.H. No. 1, Razorback Mine.

Rock specimens from Rossarden.

Rock specimens from Louisa Bay.

Beach sands, Schouten Island.

Rock specimens, Trial Harbour.

Rock specimens from Castra-Nietta area.

During May an investigation of the porphyroids of the Middlesex quadrangle was carried on, and specimens were collected over a wide area.

Attention was also given to the provision of rock and mineral collections for scientific and educational purposes.

SHEFFIELD CENTRE

Regional Geologist I. B. JENNINGS, B.Sc., reports:—

Staff—

Regional Geologist: I. B. Jennings.
Geologist: R. G. Robinson.
Senior Field Assistant: A. V. Jackson.
Field Assistants: B. E. Cox, 28.1.58-31.12.58; B. Kingshott, 24.2.58-21.11.58.

In summary the year's work consisted of the following:—

(1) Bringing the regional geological mapping of the Sheffield area to an advanced state.

(2) Commencing field work and air photo interpretation of the Du Cane sheet.

(3) Detailed mapping of the following areas:—
(*a*) Oliver's Hill;
(*b*) Tin Spur; and
(*c*) Minnow Goldfield.

(4) Surveys and sampling of clay deposits in the Kentish Municipality.

(5) Checking drafting and proofs for the Round Hill Bulletin and the Middlesex Geological sheet.

(6) Numerous examinations of small mineral deposits in the Sheffield and Middlesex areas, identification of mineral specimens, advice to prospectors and arranging a display of geological items in the Kentish Municipality.

Thus a rather greater proportion of the year was spent upon detailed surveying than usual. The Oliver's Hill and Minnow Goldfield areas both entailed detailed plane table mapping and locating, clearing out and mapping old workings. Contoured maps of both areas were produced and although in neither instance were economically important deposits located, the surveys have been of tremendous value in solving basic geological problems of the respective areas and in providing useful knowledge of the mineralisation of these districts.

Regional mapping in the Du Cane Quadrangle consisted of:—

(1) A helicopter survey of the entire eastern portion of the sheet.
(2) Field surveys of a larger portion of the Pelion Range and Mt. Oakleigh area.
(3) Air photo interpretation of most of the eastern half of the quadrangle.

This work has provided a useful basis upon which to base the field work for next summer.

The regional geological survey of the Sheffield Quadrangle has been advanced considerably and the work remaining in this area is very largely that of correlation of the various stratigraphic units in the Cambrian sequences and solving various structural problems in connection with these rocks.

All the accessible areas of clay likely to be of economic value in the Kentish Municipality were examined and sampled. A report embodying the findings in this work was submitted to the Kentish Council.

Early in May the Kentish Council arranged a celebration in conjunction with the completion of 50 years of local government. In connection with this an exhibition of rocks and minerals in the Municipality was arranged, together with geological maps and equipment. The exhibition was well attended and arrangements were made for school children from Sheffield, Wilmot and Devonport to visit the display.

ZEEHAN CENTRE

Regional Geologist A. H. BLISSETT, B.Sc., F.G.S., A.M.I.M.M., reports:—

Regional mapping of the Rossarden-Storeys Creek district was continued until 2nd April, much of the time from 31st January being spent in the examination of the Storeys Creek mine, and the Lower Palaeozoic rocks within which mineralisation occurs.

From 10th April to 12th September, the main task was the preparation of Bulletin No. 46 (The Geology of the Rossarden-Storeys Creek District). Visits were made to Zeehan (15th to 24th April) and the Regional base at Sheffield (2nd to 5th September). Annual leave was taken from 7th to 20th July.

The Zeehan office was re-opened on 15th September after a lapse of four years, and the regional mapping of the Zeehan Quadrangle (1 inch Geological Sheet No. 50) was started, in addition to routine examination of mineral prospects and advice to prospectors. Until early December, mapping was carried out between Zeehan and Trial Harbour, and north-west of Zeehan.

With the co-operation of Rio Tinto Australian Exploration Pty. Ltd., a camp was installed by helicopter at White Spur Creek, east of Mt. Dundas on 15th December, to begin the summer programme of mapping the more inaccessible portions of the Zeehan Sheet.

At the end of the year, the Zeehan base included the following personnel:—

A. H. Blissett, Regional Geologist.
A. B. Gulline, Geologist.
T. W. Johnstone, Field Assistant.
R. Pitt (Geology Student, University of Tasmania) Field Assistant.

Geologist A. B. GULLINE, B.Sc., reports:—

January was spent in continuing the geological mapping of the Rossarden district. During March, April and May further investigation was made of the Mt. Lloyd coal area, and the coal measures of the Gretna-Plenty area were examined to determine their coal bearing prospects.

Other duties included commencement of a ground scintillometer survey of the area from Gipps Creek to east of Storeys Creek in the Avoca district; geological mapping of portion of the Longford quadrangle; and selection and advising on water boring sites in the vicinity of Smithton.

On 15th September residence was taken up at Zeehan and from this time on mapping of the Zeehan Quadrangle has been carried out under the direction of the Regional Geologist, Mr. A. H. Blissett.

PORT DAVEY CENTRE

Regional Geologist M. Z. STEFANSKI, M.Sc., A.M. Aus. I.M.M., reports:—

Regional and some detailed mapping were carried out during the year in an area extending from the Red Pt. dividing hills to the Iron Bound Range and eastwards and northwards as far as the Louisa-Ray River dividing ranges. Some mapping was completed in the Ray River valley.

In addition, mapping was undertaken in the vicinity of Bramble Cove, Spring River and the lower reaches of Old River; and preliminary geological surveys were carried out in the Old River-Solley River area.

MAPPING AND ENGINEERING DRAUGHTING SECTION, HOBART

Mapping and Engineering Draughtsman-in-Charge, K. T. KENDALL, reports:—

Staff—No staff changes occurred during the year. Transfer of the Drawing Office to new quarters was effected during late October.

Operations—A feature of this year's activity was the preparation and printing of two sheets of the Geological Atlas one-mile series, the Middlesex Sheet No. 45 and the Buckland Sheet No. 76.

Preparation of the Longford Sheet No. 45 for the Geological Atlas began towards the end of 1958. Further progress is reported on the new eight mile Geological Map of the State.

One coloured and fourteen black and white geological maps and diagrams were prepared and printed in the Geological Survey Bulletin No. 45 "The Round Mount District".

Thirty-four black and white geological maps, diagrams and graphs were prepared as line blocks for inclusion in the publication "Technical Reports No. 2 (1957)," which was printed during the year. Preparation began on one coloured and twenty black and white geological maps, sections and diagrams for inclusion in the *Geological Survey Bulletin No.* 46 "The Geology of the Rossarden-Storeys Creek District".

One coloured and eleven black and white geological maps and diagrams were prepared for inclusion in the publication *Underground Water Resources No.* 5 "The Underground Water Resources of the Smithton Area". In addition cartographic work was undertaken on behalf of the regional establishments at Sheffield, Zeehan and Port Davey. The balance of time was used in preparing topographical, geological and engineering plans related to normal field services. The Mines Department's exhibit at the Australian Atomic Energy Commission's Exhibition in Hobart was also arranged by this section.

APPENDIX II

ANNUAL REPORT FOR 1958—CHIEF CHEMIST AND METALLURGIST

The Chief Chemist and Metallurgist, Mr. W. St. C. Manson, M. Aus. I.M.M., reports:—

Analyses were made of ores, minerals, rocks, ferrous and non-ferrous alloys, clays, coal, water and mill and research products associated with ore dressing investigations. Ore dressing research and associated mill operations and advice thereon continued to be a major activity.

Number of determinations made during 1958:—

Types	Number
Aluminium	85
Antimony	13
Arsenic	5
Bismuth	9
Calcium	51
Cadmium	8
Carbon	85
Chlorine	5
Chromium	103
Coal Analyses	197
Copper	64
Clay examinations	20
Cobalt	67
Gold	107
Iron	680
Lead	145
Magnesium	37
Manganese	166
Molybdenum	23
Monazite	5
Nickel	238
Phosphorus	100
Potassium	16
Qualitative Tests	97
Radio-Activity Tests	14
Silicon	114
Silver	115
Sulphur	249
Sodium	16
Tin	492
Titanium	103
Tungsten	39
Water Analyses	13
Zinc	30
Oxygen	42
Carbon Dioxide	42
Miscellaneous	98
Total	3,693

ORE DRESSING INVESTIGATIONS

Ore dressing investigations completed during the year were as follows:—

Types	Number
Coal	13
Tin	6
Iron	4
Nickel	3
Total	26

Cornwall Coal Mining Co.

R.325, R.327, R.328 and R.329

Four samples of coal were received from the company for sink-float tests from Corwall No. 1 and No. 2 seams, No. 2 seam top section only and Duncan colliery. Separations were made at specific gravities ranging from 1.4 to 1.8 . The most useful separation at 1.8 specific gravity resulted in ash contents ranging from 17.8 to 20% from samples containing 22 to 29% of ash. Heating values were increased from 9,500-11,000 to 10,400-11,600 range. Reject waste contained 66 to 81% of ash.

R.335 and R.336

Samples of minus $\frac{1}{4}$ inch plus 10 mesh coal from Cornwall and Duncan collieries were submitted to sink-float tests. Float products ranged from 8 to 10% of ash at a density of 1.4 to 17.7 and 20% at 1.8. Reject wastes contained 70% of ash. The minus 10 mesh fractions were treated by froth flotation to separate coal and waste rock using kerosene and cresylic acid. The sample from the Cornwall colliery contained 34% of minus 10 mesh material with an ash content of 25.5%. Flotation resulted in 26.4% of floated product containing 16.6% of ash, and 7% of flotation tailing containing 56.6% of ash. The sample from the Duncan colliery contained 45% of minus 10 mesh material, and flotation resulted in the production of 35.7% of floated coal with an ash content of 18.3, and a flotation tailing amounting to 9.3% with an ash content of 44.5%.

R.346 and R.347

These samples were obtained from the Cornwall and Duncan collieries, and were stated to be reasonably representative of production from these collieries over a one week period. Each sample weighed approximately 1,000 lbs. Examination of these samples was required in connection with the proposed installation of a coal washing plant. The sample from Cornwall colliery contained 23.5% of ash and had a heating value of 10,600 B.Th.U's. Beneficiation by sink-float at a density of 1.8 resulted in a coal containing 20.2% of ash, with a heating value of 11,070 B.Th.U's, and at a density of 1.6 the floated coal contained 18.1% of ash with a heating value of 11,460 B.Th.U's. Rejects at 1.6 and 1.8 densities contained 57 and 73% of ash. The sample from Duncan colliery (R.347) contained 23.3% of ash and had a heating value of 10,740 B.Th.U's. Floated coal at 1.6 and 1.8 densities contained 20 and 21.3% of ash, and 11,000 and 11,220 B.Th.U's. Rejects contained 60 and 75% of ash.

Stanhope Coal Mining Co.

R.342 and R.343

Two seam samples were obtained from the colliery several hundred feet apart for use in sink-float tests to determine the amenability of the coal to cleaning by washing. The samples were taken in accordance with Australian Standards A.S. No. CK parts 2 and 3, 1949, and each sample weighed approximately 500 lbs. The samples were broken to provide sizing comparable with mining, and oversize was reduced to minus three inch size. The samples contained 22.6 and 22.7% of ash.

R.342 from No. 4 drive left of the main heading yielded 83.4 and 86.5% of coal at densities of 1.6 and 1.8 with ash contents of 13.5 and 14.7% and with calorific values of 12,770 and 12,540 B.Th.U's respectively. Sample R.343 was obtained from right of the main heading, and at densities of 1.6 and 1.8 the floated coal contained 14.0 and 14.9% of ash, with calorific values of 12,720 and 12,530 B.Th.U's. The minus 30 mesh coal was not treated and amounted to 13%, with ash contents of 24.8 and 32.3%. Rejects at 1.8 contained 73.4 and 77.7% of ash.

Jubilee Coal Mining Co.

R.344, R. 345 and R.348

Two seam samples of coal, and a sample of minus 1¼ inch "slack" coal, were obtained and submitted to sink-float tests from densities of 1.4 to 1.8 in 0.1 steps to determine the amenability of the coal to upgrading by washing.

R.344 was obtained from the top section of the seam which is currently mined. The sample contained 23.5% of ash, and at a density of 1.6 showed a useful beneficiation to produce a coal containing 20% of ash with a yield 87.7% by weight. Calorific value of the floated coal was 11,120 B.Th.U's.

R.345 is the bottom section of the seam which is not mined and contained 25.2% of ash. The bottom section consists of 4 feet 3 inches of coal with 22% of ash, and a 12 inch band with 40% of ash. Floated coal from the coal plus band contained 20.2% of ash, with a calorific value of 11,290 B.Th.U's. Coal yield amounted to 89% by weight.

The slack coal (R.348) contained 27.9% of ash and coal floated at 1.6 amounted to 76.6% by weight with an ash content of 20.1% and a calorific value of 11,130 B.Th.U's.

Tin Ore-Pig Flat, Waratah

R.330 and R.331

The two samples of ore, submitted by D. Kenworthy containing 0.3% of tin with some sulphides, were crushed to minus 12 mesh size by jaw crusher and rolls, classified and concentrated on tables to low grade pyritic concentrates with recoveries of 68 and 42%. Secondary crushing of the tailings of R.330 to minus 60 mesh and reconcentration increased the recovery from 68 to 84%.

Aberfoyle Tin Mining Co.

R.333

A sample of very fine slimes recovered from dewatering of coarse jig tailings contained 0.57% of tin, and 0.49% of tungstic oxide. The fineness of the tin is indicated by the fact that the vanning assay for tin amounted to only 0.12%. Eighty-seven per cent of the sample was minus 200 mesh size. Treatment consisted of classification, table concentration, sulphuric acid digestion to remove siderite, and magnetic separation of the washed and dried concentrate to produce separate tin and wolfram concentrates. The tin concentrates contained 35% of tin and 10% of tungstic oxide, with recoveries of 24 and 8%. The wolfram concentrate contained 57% of tungstic oxide and 1.3% of tin, with a recovery of only 6% of the tungstic oxide.

Renison Asociated Tin Mines

R.337, R.338 and R.340

R.337, a mill tailing sample obtained during a period of poor mill recovery was submitted to examinations to determine the causes of high loss and correction of same. The sample contained 1.1% of tin of which 0.44% was recovered by vanning assay. Eighty two per cent of the sample was plus 200 mesh size, and the majority of the tin was present as composites in this fraction and required finer grinding for concentration. Values in the minus 200 mesh were substantially free and readily recovered by vanning.

R.338 was a sample of mill pulp feed with a sizing of 9% plus 85 mesh, and 57% minus 200 mesh. Tin content was 1.45%. The sample was submitted to check on flotation properties of the contained pyrrhotite. Using the same reagents as used in the company's mill, copper sulphate, mixed xanthates and cresylic acid, over 90% of the sulphides were readily floated.

Report 340 deals with flotation tests on three ore samples. Two of the samples showed slow response to the reagents quoted after grinding to minus 85 mesh size. The coarsest material was slow to float, and as recent mill samples showed 10% plus 85 mesh size it is indicated that the flotation problem relates to the coarser sizings.

Magnetite-Savage River

R.326

Surplus ground assay samples were utilized for a preliminary investigation to assess the prospects of beneficiation of this magnetic ore by wet magnetic separation. The sample sizing showed 9.5% plus 100 mesh, and 65.8% minus 200 mesh size and assayed 40.9% of iron, 0.7% of sulphur, and 0.07% of phosphorus. The magnetic product from a Dings wet belt separator showed high elimination of impurities. Analysis of the cleaned magnetic product was: iron 65.0%, sulphur 0.06%, phosphorus 0.01%, silica 3.6%, alumina 0.01%, manganese 0.1% and titanium oxide 1.63%.

R.334.

Drill core samples from No. 2 bore from 313 feet to 718 feet were submitted for analyses, and surplus portions of the split core were utilized for beneficiation tests. Magnetic separation was favoured for this treatment, and the process has proved so successful in separation of the magnetite from impurities that no other methods were tested.

The sample contained 46.2% of iron, 0.44% of sulphur, 0.05% of phosphorus pentoxide, 13.6% of silica, 2.3% of alumina, 1.8% of titanium oxide, and 0.11% of manganese.

Beneficiation was tested in several sizes ranging from minus ½ inch to minus 200 mesh, and moderately fine grinding was necessary for best rejection of impurities. Sizes from ½ inch to plus 44 mesh B.S. were separated with permanent magnets, and sizes minus 44 mesh were separated in a Dings wet belt separator. Magnetic products were retreated twice. The following summary shows the yield and quality of the magnetite at the sizings indicated.

Sizing	Wght.	Fe	Fe Dist.	S	P_2O_5	SiO_2	Al_2O_3	TiO_2	Mn
			Per Cent						
$-\frac{1}{2}$ inch	81.1	55.3	97.1	0.33	0.03	8.3	0.91	1.99	0.13
$-\frac{1}{4}$ inch	81.0	56.1	98.3	0.29	0.03	7.9	0.85	2.0	0.13
$-\frac{1}{8}$ inch	80.7	56.4	98.5	0.27	0.02	7.7	0.83	2.0	0.13
– 18 mesh	74.6	61.2	97.7	0.14	0.02	4.9	0.71	1.92	0.13
– 60 mesh	70.7	64.9	97.6	0.06	0.01	3.0	0.38	1.78	0.10
–100 mesh	67.9	66.4	98.1	0.04	0.01	2.3	0.35	1.51	0.11
–200 mesh	67.4	68.4	98.1	0.02	0.01	1.5	0.3	1.51	0.10
No beneficiation	100.0	46.2	100.0	0.44	0.05	13.6	2.3	1.8	0.11

Magnetite-10th Legion Mine

R.341

A sample of diamond drill core was submitted by the Director of Mines for beneficiation tests.

The sample contained 36.9% of iron, 0.14% of sulphur and 11.8% of acid insoluble material.

Investigations were confined to magnetic separation. Mineragraphic examinations showed some intimate association of magnetite and silicate gangue minerals. The following tabulation show the results obtained of magnetic products at various sizings.

Sizing	Wght.	Iron	Sulphur	Insoluble
		Per Cent		
Minus 5 mesh	73.7	47.7	0.1	7.9
Minus 30 mesh	65.4	54.0	0.12	6.0

Analyses of the minus 100 plus 200 and minus 200 mesh fractions of the minus 30 mesh grind show improved quality, and acid insoluble figures were as low as 2.2% in the minus 200 mesh fraction. No sensible variation of the low suphur content was obtained in the tests.

Nickel Ore, Lady Brassey Mine, Heazlewood District

R.332

The sample submitted by Mr. A. McCormick contained 12.7% of nickel and 0.24% of cobalt. The major nickel mineral is the sulphide heazlewoodite with a reported composition of Ni_3S_2. Zaratite was present in small amount. The heazlewoodite was intimately associated with magnetite, and examinations of specimens are reported in C.S.I.R.O. Mineragraphic Investigation No. 711. The ore occurs in serpentine.

After crushing to minus $\frac{3}{16}$ inch size concentration was attempted by low power magnetic separation. The concentrate contained 23.2% of nickel with a recovery of 79%.

Rougher flotation using copper sulphate, amyl xanthate and frother M200 and cresylic acid resulted in a recovery of 87% in a concentrate containing 22.4% of nickel. The talcose nature of the gangue resulted in this medium grade product, and a talc float ahead of sulphide flotation using aerosol O.T. and M200 as a frother allowed a higher grade concentrate to be obtained by cleaner flotation. The concentrate contained 44.3% of nickel with a recovery of 61%.

Nickel Ore-Beaconsfield

R.350

A sample of nickeliferous clay obtained from leases of the Ben Lomond Mining Co. and containing 1.12% of nickel and 0.07% of cobalt and about 40% of iron oxides was subjected to extraction tests with various reagents, predominantly sulphuric acid. Little selectivity was noted between the solution of the nickel and gangue. With additions of 150 lbs. of acid per ton of ore, the nickel extracted was 15%; with 600 lbs. and 1,200 lbs. of acid, extractions were of the order of 50% and 85% respectively.

APPENDIX III

REPORT OF THE CHIEF INSPECTOR OF MINES

(Compiled by the Assistant Chief Inspector of Mines, Mr. P. M. Johnstone, B.E., M.I.M.M., M. Aus. I.M.M.)

The Chief Inspector of Mines, Mr. J. G. SYMONS, B.E., M. Aus. I.M.M. reports:—

THE MINES AND WORKS REGULATION ACT, 1915

EMPLOYMENT

The avearage number of persons employed in the mining, metallurgical and quarrying industry during the year was 8,309. The number started to increase during 1956 and continued to do so in spite of the closure of one large and one small mine. The increase during the year was 172 as compared with 445 in 1957, and again occurred mainly in the metallurgical works.

ACCIDENTS

The number of accidents to persons registered under the Act was 103, compared with 80 last year, and these are dissected in the appended tables. There were three fatalities. In calculating the rates per thousand, 792 employees of concerns which do not report accidents were discarded.

Generally speaking the incidence of accidents was characterized by considerable variations according to location. Underground the average rate was set high by the two larger mines, which have more than half the total employees. Whilst the rate for all other mines together was 28 per thousand, their rates were 48 and 78 respectively, and more attention to safety appears to be needed. The record of two mines was nil accidents underground. On the surface the two larger mines had rates of 20 and 35 respectively, which do not compare favourably with the remarkable achievement of the two largest works where the rates were three and nil. Geographically the total incidence underground and surface was highest in the west but this only applies to the larger establishments.

INSPECTION

Inspections were made to promote safe practice and good housekeeping, with particular regard to the safety and hygiene of personnel, to give operators technical advice upon request, to report on applications for financial assistance, and to assemble statistical and general knowledge of the industry. The inspectors' reports on generalities are given in Appendix V, and their notes on production and development of various mines are quoted in the main report.

DESCRIPTION OF FATAL AND SERIOUS ACCIDENTS

Fatal

I. Schinogl, E. Z. Co., Rosebery: Struck by fall of ground.
J. M. McLaughlin, Goliath Portland Cement, Railton: Struck by travelling crane.
H. E. Bennett, Mt. Lyell Co., Regatta Point: Caught in belt conveyor.

Serious

K. J. Hill, Barber's Colliery, Fingal: Struck by fall of ground; broken leg.
H. S. Bushing, Cornwall Colliery, St. Marys: Jammed between loader and prop; broken pelvis.
L. R. Hall, Duncan Colliery, Fingal: Struck by fall of ground; broken leg.
T. Hinds, Duncan Colliery, Fingal: Whilst travelling on set knocked off by bar; injured backbone.
W. Jones, E.Z. Co., Risdon: Struck by falling pipe; both legs injured.
T. C. Purcell, E.Z. Co., Rosebery: Slipped on rail and fell under truck wheels.
A. A. Worsley, E.Z. Co., Rosebery: Fell on moving rope and struck head on rails.
E. Parker, E.Z. Co., Rosebery: Spalling stone, struck in eye by scat.
J. Wuchterle, E.Z. Co., Rosebery: Struck by drum of balls; Broken leg.
A. E. Thompson, Mt. Lyell Co., Queenstown: Clearing mill intake; broken arm.
C. G. Pennicott, Mt. Lyell Co., Queenstown: Operating circular saw; loss of five digits from left hand.
R. H. Dowsett, Mt. Lyell Co., Queenstown: Fell from top of grab after receiving electric shock.
C. G. Lindsey, Mt. Lyell Co., Queenstown: Struck head by falling from trolley.
D. L. D. Coppleman, Mt. Lyell Co., Queenstown: Drove lorry over bank; broken head.
J. Boyle, Mt. Lyell Co., Queenstown: Exploded gelignite by boring into butt; left arm and eye injured.
C. J. Maggs, Tullah Ore Treament Ltd.: Pushing ore down feed chute with foot; foot crushed in rolls, amputated.

INCIDENCE OF ACCIDENTS

Place and Cause of Accident	Number of Persons Killed	Number of Persons Injured (incapacitated for over 14 days).
Section A.—Metalliferous Mines—		
1. Below Ground:		
(*a*) Explosions	....	....
(*b*) Falls of Ground	1	3
(*c*) Falling down Shafts, &c.	....	....
(*d*) Other Causes	....	25
2. Above Ground:		
(*a*) Machinery in Motion	2	12
(*b*) Other Causes	....	37
3. Accidents in Batteries, Ore-dressing, Smelting and other Metallurgical Works, &c.	....	14
Total Metalliferous Mines (A)	3	91
Section B—Coal Mines—		
4. Below Ground:		
(*a*) Mine Explosions (fire, damp, &c.)	....	....
(*b*) Explosives (dynamite, &c.)	....	....
(*c*) Falls of Earth	....	2
(*d*) Other Causes	....	4
5. Above Ground:		
(*a*) Machinery in Motion	....	....
(*b*) Other Causes	....	3
Total Coal Mines (B)	....	9
Total All Mines (A and B)	3	100

COMPARATIVE TABLE SHOWING RATES PER THOUSAND KILLED OR INJURED

Period	Number of Persons Employed	Number of Accidents	Number of Persons			Number per Thousand		
			Killed	Injured	Total	Killed	Injured	Total
1892 - 1930*.								
1931 - 1940†								
1941	5856	85	5	85	90	0.853	14.515	15.368
1942	5572	89	4	86	90	0.718	15.434	16.152
1943	5535	73	6	67	73	1.084	12.104	13.188
1944	5439	73	4	71	75	0.735	13.054	13.789
1945	5178	46	2	44	46	0.386	8.497	8.883
1946	5255	63	1	62	63	0.19	11.798	11.989
1947	5316	74	....	74	74	....	13.920	13.920
1948	5399	67	3	64	67	0.555	11.854	12.409
1949	5659	65	1	64	65	0.176	11.308	11.484
1950	5892	62	2	62	64	0.339	10.524	10.862
1951	5928	49	2	50	52	0.337	8.335	8.772
1952	6820	62	1	61	62	0.147	8.944	9.091
1953	7370	73	6	67	73	0.801	0.091	9.892
1954	7289	75	3	72	75	0.411	9.877	10.289
1955	7095	98	4	96	100	0.563	13.531	14.094
1956	7692	130	4	126	130	0.520	16.381	16.901
1957	8137	79	....	80	80	....	10.786	10.786
1958	8309	103	3	100	103	0.399	13.303	13.702

* See Report of Director of Mines—1954. † See Report of Director of Mines—1956.

APPENDIX IV

REPORT OF THE CHIEF INSPECTOR OF EXPLOSIVES

(Compiled by the Assistant Chief Inspector of Explosives, Mr. P. M. Johnstone, B.E., M.I.M.M., M. Aus. I.M.M.)

The Chief Inspector of Explosives, Mr. J. G. SYMONS, B.E., M. Aus. I.M.M. reports:—

EXPLOSIVES ACT, 1916

The following quantities of explosives were imported during the year at the ports shown:—

Explosive	Hobart	Launceston	Burnie	Strahan	Devonport	Total
Ajax (lb.)	....	195,150	....	....	....	195,150
Gelignite (lb.)	519,950	428,750	205,350	117,300	....	1,271,350
Ligdyn (lb.)	9,400	....	....	....	....	9,400
Plastergel (lb.)	550	2,250	400	....	....	3,200
Quarrigel (lb.)	....	....	....	1,002,350	....	1,002,350
Quarry Monobel (lb.)	9,000	12,850	....	....	....	21,850
Blasting powder (lb.)	2,500	5,000	....	....	....	7,500
Cordtex (ft.)	90,000	....	....	228,000	....	318,000
Detonators	....	600,000	....	....	200,000	800,000
Detonators (electric)	....	119,600	....	....	32,000	151,600
Detonating Relays	....	13,000	....	....	475	13,475

In subtraction 5,600 lb. of Gelignite, 20,950 lb. of Quarrigel and 21,000 ft. of Cordtex were exported from Currie.

All nitro-compounds were of Polar manufacture. There were 31 shipments in all and each was inspected and found to be in good condition.

Examination of the Australian, British, Chinese and Japanese fireworks landed during the year was made to appraise the safety of both design and construction. An application for permission to import from Japan two types known as " Jets " was refused on the grounds that burns to the face or hands could occur in normal usage. One was a cardboard plane and squib suspended by a length of cotton, the other a plane attached to a length of wire for holding in the hand.

ACCIDENTS

Two accidents occurred with explosives. One man was killed whilst engaged in preparing electric primers, but the cause of the explosion was not determined. Another inadvertently bored into a butt in a large stone in an open cut. The hole contained gelignite which exploded and caused him serious injury.

An unusual occurrence was the wreck of the explosives vessel *Merilyn* on Goose Island in Bass Strait whilst carrying 43 tons of explosives. It was found necessary to destroy the cargo, and consequently the ship, to prevent explosives in a highly dangerous state being scattered far and wide. The Inspector of Explosives, Hobart (Mr. K. D. Sear) proceeded to the wreck, and assisted by the manufacturer's technical representative succeeded in detonating the explosive on 4th December, 1958. On this day, 10 days after immersion, the Ajax was showing signs of deterioration, but A. N. Gelignite '60' was in good order although showing some exudation of nitroglycerin. With 50 lb. of fresh gelignite as a primer, and using Cordtex below water and 60 ft. of safety fuse for initiation, a 100% blast was obtained. Of the 1,941 cases on board only one remained unaccounted.

INSPECTION

An Inspector of Explosives was appointed and stationed at Launceston.

The number of licensed magazines increased from 90 to 97 during the year, and all were

inspected to ensure that safe conditions were being maintained. Minor faults only were discovered, and these quickly rectified. No prosecutions were made.

An amendment to the Act made during the year is described on page 5 under Legislation.

INFLAMMABLE LIQUIDS ACT, 1929

The following quantities in tons of inflammable liquids were imported in bulk during the year through the ports shown:—

Liquid	Hobart	D'port	Bell Bay	Total
Aviation Gasoline ..	2,584	....	2,062	4,646
Benzol	500	....	....	500
Jet Fuel	2,848	....	1,427	4,275
Kerosene, Lighting	1,845	150	....	1,995
Kerosene, Power ..	1,835	3,272	....	5,107
Motor Spirit, Premium	23,089	11,035	12,294	46,418
Motor Spirit, Regular	36,218	14,890	18,901	70,007
Total	68,919	29,347	34,684	132,950
Tank Ships (No.) ..	20	8	11	39

There were nine more ships than in the previous year and the quantity landed was 39% greater. An additional oil company's marine terminal was removed from Macquarie Point to Self's Point.

ACCIDENTS

One accident was reported wherein a lorry carrying drums of petrol &c. caught fire and was destroyed. The ignition was attributed to a petrol drum leaking onto the hot exhaust pipe.

INSPECTION

At 30th June the number of licensed premises was 1,557, an increase of 71 in 12 months. In addition exemptions were granted for private storage in country areas. Notable features from the safety point of view were the rapid installation of lighting kerosene tanks and pumps at service stations and the growth of farm storages using special tanks instead of drums, as was the former practice.

With the establishment of refineries on the mainland came a vastly enhanced supply of liquefied petroleum gas (L.P.G.) and the problems of safe transport, storage and usage associated with the marketing of this product received a deal of attention. Through co-operation between the industry and State authorities satisfactory rules were formulated, uniformly based on long experience in the U.S.A.

In the course of supervision tank ship unloading two highly dangerous incidents occurred. In one case a leak developed in a petrol line from wharf to shore installation and in the other petrol escaped through a ship's side. In both instances measures were taken to break up the film of petrol on the waters of the harbour, and the perimeter of the wharves was patrolled to guard against ignition, with success.

Three prosecutions were made for illegal storage of inflammable liquid and fines were imposed in each case.

The effects of amendments to the Act made during the year are set out under Legislation (see p. 5).

APPENDIX V

REPORTS OF THE INSPECTORS OF MINES AND EXPLOSIVES

Inspector L. W. MORRIS, A.W.A.S.M., M. Aus. I.M.M., Queenstown, reports:—

EMPLOYMENT

The average number of persons employed in the industry was 2,407 of whom 368 were underground. In addition 28 men centred on Zeehan were engaged in exploration work on special prospecting licences.

ACCIDENTS

There were 61 accidents registered as having caused 14 days' or longer lost time, and of these 49 were minor and two fatal.

One fatality occurred when a miner was struck by a fall of hanging wall, and the other when a conveyor attendant was caught between the belt and the head pulley. Of the ten serious accidents two were underground, one man falling off a trolley and another being struck in the eye by a scat whilst spalling. On the surface three men fell, one slipping on rails, another after receiving an electric shock, and the third onto a moving rope. In an open cut a miner bored into a butt in a boulder, exploding gelignite therein, and another drove a lorry off the road. A rolling drum of balls broke a man's leg and a circular saw cut off all the digits of another's hand. An operator suffered a broken arm in attempting to clean a mill intake.

HEALTH AND SANITATION

Inspections have shown that mine ventilation, working conditions and amenities are satisfactory.

AID TO MINING

Applications for assistance have been investigated and reports prepared. There were two parties operating, and in addition some diamond drilling has been done with assistance under the Act.

EXPLOSIVES AND INFLAMMABLE LIQUIDS

Storage of explosives and inflammable liquids have been inspected and kept up to the required standards. New installations have been examined and, when complying with approved plans, approved for licensing. Eight shipments of explosives were landed at Regatta Point, Strahan, in good condition.

Inspector L. F. EGAN, A.M. Aus. I.M.M., Burnie, reports:—

EMPLOYMENT

The average number of persons employed was 837 as compared with 1041 last year. The cessation of scheelite mining due to uneconomic markets was the main cause of the decrease.

ACCIDENTS

Accidents registered during the year totalled four, of which one was fatal. In this instance a fitter stepped into the path of a moving overhead crane when about to mount a ladder, apparently without looking and without having notified his presence near the crane path to the driver. He suffered a broken spine and internal damage. As a result of the one serious accident a mill operator lost his right foot by amputation. He stood on a suspended chute feeding a crushing rolls and in attempting to depress the discharge end of the chute with his foot to obtain a more even feed, his foot slipped into the rolls and was crushed.

SAFETY

On three larger works safety committees were formed and regular monthly meetings held, a copy of the minutes being forwarded to the Inspector. In this way very close contact was possible with the management in relation to specific requests made during routine inspections. It is noteworthy that personnel are becoming more and more safety conscious.

Adequate ventilation of underground workings was insisted upon, in certain instances additional raises, fans and air ducts being required. Dust suppression in surface plants required constant attention, but in general crushing plant owners made satisfactory provision.

EXPLOSIVES AND INFLAMMABLE LIQUIDS

Landing of explosives at Burnie and Devonport was supervised to ensure safe handling and compliance with the regulations. A special visit was made to King Island to inspect the shipment of explosives to the mainland consequent upon the cessation of mining at Grassy. One lot of 25 lb. of old nitro-compound in a state of semi-decomposition was destroyed by burning.

Checking new inflammable liquid installations for conformity with the approved plans, ensuring the licensing of the premises, advising on package storage areas and liquefied petroleum gas storage, were all features of inspections made throughout the year.

PROSECUTIONS

On one mine during a weekend task, winding signals were mistakenly interpreted and wrongly executed. As a result a man in one cage was lowered instead of hoisted and the other cage was overwound into the headframe. There it was detached and hung by the safety gear. Subsequently it was established that the driver and another man had been consuming liquor in the winder house, and they were prosecuted under the Mines and Works Regulation Act and fined £35 and £7 10s. respectively. The driver's certificate was cancelled.

AID TO MINING

Two applications for assistance under the Act were received and examined. A quantity of 18″ pipes and valves was made available to an alluvial miner. Departmental plant at Waratah was maintained.

Inspector R. J. MUIR, A.S.T.C., A.M. Aus. I.M.M., Launceston, reports:—

EMPLOYMENT

The average number of persons employed in mining and allied industries, other than coal mining, was 1371, a increase of 78.

ACCIDENTS

It is pleasing to note that no fatal or serious accidents occurred during the year, but nineteen accidents were registered involving the loss of fourteen days' or more time. Six of the accidents occurred on the surface, and thirteen were underground.

Of the underground accidents three were caused by lifting weighty objects and resulted in strain to the muscles of the back. Four were caused by falling stones, two when barring down, the stones falling on the foot. Another man was lifting stones and allowed one to drop on his foot, and the last one whilst bending over shovelling was struck on the back and severely bruised. Two accidents occurred during trucking, in one case a fractured thumb was the result of placing it between two trucks, and in the other the thumb was bruised when struck by a truck. In two other accidents the man slipped, one whilst pushing a truck, and the other off a stone whilst barring down. Of the remaining two a lacerated thumb was caused by a stone coming down a chute and in the other the man was spalling stones when he miss-hit and struck his foot.

Of the surface accidents each was of a different nature. One was due to an electric shock throwing a man from a machine and severely bruising him. In the second, injuries to the head were caused by a stone falling from the face of an alluvial mine. The third was due to a rail truck running over and mutilating three fingers whilst the man attempted to chock the wheel. The fourth man was tipping a truck in a tumbler, when the tumbler came back and cut off his big toe. The fifth man was carrying a pipe when he tripped and fell, and the last man fell off a ladder and broke his hand.

HEALTH AND SAFETY

Attention was continually given to these matters with regular visits to mines and works and endeavours to encourage employees to work safely.

At the request of the Hydro-Electric Commission, in accordance with the Federal Construction and Maintenance Award 1958, I inspected the shaft at Poatina and gave an opinion and advice on safe sinking practice.

Due to excessive rains the wall of the Saxelby Dam of Goshen Tin Mines was breached. The water flowed away without damage to life and with little damage to property, one small road bridge being dislodged.

At one large quarry water was laid on from a considerable distance to improve conditions. Konimeter samples were taken in underground workings and the quantity of ventilating air was checked.

A reasonable standard of cleanliness was maintained in crib rooms, change houses, latrines, &c., where provided.

The Workers' (Occupational Diseases) Relief Fund Board was assisted by arranging and following up the medical examinations of employees.

EXPLOSIVES

Importation of explosives continued at Launceston, and the unloading of all shipments was supervised. The explosives were found to be in good condition, but a few cases had been slightly

damaged during shipment. Inspection of private magazine storages was carried out, and samples of fireworks were obtained and inspected and generally found satisfactory.

INFLAMMABLE LIQUIDS

Considerable work was entailed in the administration of the Inflammable Liquids Act. The appointment of Mr. D. R. Bonham as Inspector of Explosives, considerably eased the burden, and by the close of the year it was considered a reasonable standard of compliance with requirements was being obtained. Unloading of bulk shipments was supervised at Bell Bay and Devonport, and the main incident of note was at Bell Bay when a small leak developed in a by-pass pipe on the tanker *Stanvac Singapore*. Pumping was stopped and repairs effected without any escape of gasoline.

The introduction of farm tank storage took place during the year, and is considered an improvement, as it does away with large numbers of 44 gallon drums being distributed about the country-side. The importation of liquefied petroleum gas on a larger scale increased duties in the supervision of satisfactory storage sites.

A fire occurred at a service station after the station had been closed down for the night. There was no evidence that the inflammable liquid storage had any connection with the cause of the fire. There was also a fire at a private petrol pump after a truck had been filled, and it is thought that the cause was the truck back firing and igniting petrol spilt over the exhaust pipe. Considerable damage was done to the truck and pump-head before it was extinguished.

Two prosecutions were carried out for unlicensed storage, and convictions obtained and fines of £15 and £3 10s. imposed.

AID TO MINING

Reports were compiled in connection with applications for assistance under the Aid to Mining Act, and verbal advice was given at various mines and to interested parties to increase the efficiency of their operations.

Inspector H. L. OLDS, A.S.T.C., A.M. Aus. I.M.M., Hobart, reports:—

EMPLOYMENT

During the year quarries continued to come under the control of the Department through an amendment to the Mines and Works Regulation Act. Employees were examined for competency in handling explosives and working conditions generally were investigated. In most cases it was necessary to change radically methods of operation because of unsafe practices, and some operators are still engaged upon the elimination of high working faces.

ACCIDENTS

Ten accidents of 14 days or longer lost time were registered, a considerable reduction from the previous year's total of 23. Two of these were reported from quarries, one man suffering a severe eye injury when spalling stone and failing to wear goggles at the time and another by a stone falling from a high face. One man suffered serious injury to both legs when a pipe rolled off a lorry onto them.

EXPLOSIVES AND INFLAMMABLE LIQUIDS

Landings at Hobart were supervised and cases opened at intervals for examination. Six new magazines were constructed and installed in quarries and regular checks were made on existing ones to see they conformed with Regulations.

Little activity was experienced in this field, a very small number of applications for installations being received. Routine examinations of storage sites were made, and investigations into unauthorized storages performed.

Inspector D. BESFORD, M. Aus. I.M.M., Hobart, reports:—

EMPLOYMENT

The average number of persons employed in Mines and Works, operating under the Mines and Works Regulation Act, excluding small quarries, was 464, a decrease of one compared with the previous year.

ACCIDENTS

No fatal accidents occurred during the year, and of the nine recorded accidents three were associated with surface operations and six occurred underground. One miner received a fractured leg when a large piece of coal slipped off the face and rolled down a pile of broken coal, pinning him against the timber while he was engaged in filling out the broken coal. If proper attention had been given to barring down before commencing to load out the broken material, the accident would have been avoided. A miner received a fractured leg when a fall of roof occurred at the face where he was engaged in setting roof supports. The workmen were aware of the unstable nature of the roof but delayed the installation of the supports. The accident would not have occurred if attention had been given to the early installation of the timber. A youth received injuries to his back while he was engaged in set-riding; examination disclosing a damaged vertebra. Another miner jammed between a loader and a prop suffered a broken pelvis. All other accidents were of a minor character.

SAFETY

Attention was directed to the maintenance of safe working conditions in the mines and every working place was inspected on each of my visits.

Working places underground were regularly tested for the presence of inflammable and noxious gases. Tests were also carried out in old roads adjacent to the workings, but no inflammable gas was found. Underground electrical equipment was examined and tested to ensure safe operation. Some defects were discovered and these were remedied on the spot.

VENTILATION

Main air-currents were regularly checked and in most cases were found to be adequate. Stoppings were inspected and in some cases appreciable leakages were discovered; these leaks were sealed in order to restore suitable ventilation. Wet and dry bulb temperatures were regularly recorded in all the underground working places. The highest

recorded temperature was 69 degrees Fahrenheit saturated, and although this is below the prescribed maximum the relatively high recordings were the cause of complaints from the miners. Generally the temperatures did not exceed 65 degrees Fahrenheit on the dry bulb with a corresponding one or two degrees less on the wet bulb, while in some cases the temperature was below 60 degrees. The erection of suitable stoppings and brattice doors dispersed the small accumulations of noxious gases which were discovered at one mine.

and efforts are being made to restore the main ventilating system with the reopening of the main return airway which has become blocked with large falls.

EXPLOSIVES AND INFLAMMABLE LIQUIDS

Due attention was given to the proper storage and use of explosives and detonators. Storage magazines and installations have been found to comply with the requirements of the Acts.

REPORT OF THE RINGAROOMA AND CASCADE WATER BOARD FOR THE YEAR ENDED 31st DECEMBER, 1958

SIR,

We have the honour to submit the report of the Ringarooma and Cascade Water Board for the year ended 31st December, 1958.

The Cascade section of the race continued to be used and maintained by Briseis Tin N.L. at a rental of £211 per year. The section has been maintained in good order.

The Ringarooma section has been maintained by Briseis Tin N.L. on a cost plus supervision basis. Lade's Syphon which was replaced with pipes last year, has proved satisfactory but continued maintenance was necessary, particularly at Ruby Flat and at Ringarooma, to preserve the system. The Ringarooma dam was breached by severe floods in July but this has been repaired at a cost of £220.

As reported last year the Board is constantly concerned with the high cost of maintenance of the Ringarooma system and the fact that available sources of revenue are insufficient to meet the cost of necessary maintenance. The replacement of Lade's fluming has reduced costs from £6673 last year to £5780 for 1958 but the condition of certain sections of the system is such that substantial capital expenditure would be necessary to ensure maintenance-free operation. The Board could not recommend capital expenditure.

The revenue received has fallen by £424, the major cause being the decrease in the amount received from water used in mining operations. One small operator has ceased operations and one of the major producers is expected to go out of production shortly. The loss for the year was £5192; with continuing and rising losses which now exceed £53,000 since the race system began to function, the Board is giving serious consideration to the future operation of the Ringarooma section.

We have the honour to be, Sir,
Your obedient servants

J. G. SYMONS, Chairman.
H. K. TURNER, Member.
N. P. EDWARDS, Member.

The Hon. the Minister for Mines,
Hobart.

Statement of Receipts and Payments of the Ringarooma and Cascade (Water) Suspense Account for the Year ended 31st December, 1958.

Receipts.	£	s.	d.
Rent of Cascade Race and Dams	211	0	0
Revenue from sale of water from Ringarooma Race—			
Mining purposes £263 0 5			
Domestic 16 12 0			
Town supplies 97 10 0			
	377	2	5
Total revenue	588	2	5
Balance (Loss)	5,191	15	2
	£5,779	17	7

Payments.	£	s.	d.
Ringarooma Race—			
Wages—Caretakers	2,154	0	0
Wages—Maintenance	1,648	16	4
Holiday pay	170	8	0
Pay Roll Tax	94	2	6
Workers Compensation Insurance	74	9	2
Stores	569	15	11
Transport expenses	347	11	0
Supervision	180	0	0
Telephone	21	10	3
Compensation for damage to property and legal expenses	36	6	9
Rent of private land	80	15	6
Interest on capital cost of Ringarooma and Cascade Water System	402	2	2
	£5,779	17	7

REPORT OF THE MT. CAMERON WATER RACE BOARD FOR THE YEAR ENDED 31st DECEMBER, 1958

SIR,

We have the honour to submit the report of the Mount Cameron Water Race Board for the year ended 31st December, 1958.

Production of tin oxide from water supplied was 38.830 tons as compared with 31.784 tons for last year.

The operational loss was £304 6s. 9d. as compared with £1453 12s. for 1957. This was accounted for by an increase in revenue from sale of water from £1585 5s. to £2142 1s. 4d. and a decrease in expenditure from £3038 17s. to £2446 8s. 1d.

It is pleasing to report that operations by the Elizabeth Tin Syndicate continued and 10 sluiceheads of water were supplied weekly to this Syndicate throughout the year. This, together with the supply of four sluiceheads of water weekly to a producer on the royalty scale of charges, has resulted in increased revenue. The supply of water to the Gladstone township through the Municipality of Ringarooma was responsible for increased collections of £65.

During 1957 expenditure of £440 was incurred in widening a race to two users of water and in repairs to the Mussel Roe Syphon, but this was of a non-recurring nature and expenditure during 1958 was confined to normal operation and maintenance.

The race system has been maintained in reasonable condition. The use of weedicides in clearing the growth of weeds from the race was continued and this has effected a considerable saving in maintenance charges and has improved the flow of water.

Provided present users of water can continue to locate tin bearing gravels of an economic grade, the Board hopes to reduce further operational loss. Sources of revenue are limited and the finances of the Board are determined by the level of activities by the Star Hill Syndicate and the Elizabeth Syndicate.

It is desired to record appreciation of the services of the Manager and the channel keepers.

We have the honour to be, Sir,

Your obedient servants,

J. G. SYMONS, Chairman.
H. K. TURNER, Member.
B. DUNN, Member.

The Hon. the Minister for Mines,

Hobart.

STATISTICS FOR THE YEAR ENDED 31st DECEMBER, 1958

Registered Rainfall

Great Mussell Roe	50 inches 14 points
Little Mussell Roe	49 inches 46 points

Water Services

Average number of claims supplied per week	3
Greatest number of claims supplied in any one week	4
Total number of sluiceheads supplied	2070
Royalty Scale	224
Fixed or Cash Scale	1846

Production and Employment

Tin oxide produced—

	tons	cwt.	qrs.	lbs.
Royalty Scale	....	10	2	8
Fixed or Cash Scale	38	6	....	4
Total	38	16	2	12

Average number of men employed per week: 8.

Statement of Receipts and Payments of the Mt. Cameron Water Race Suspense Account for the year ended 31st December, 1958.,

Receipts.

		£	s.	d.
Sale of Water—				
Royalty Scale	72 10 2			
Fixed Scale	2,002 15 0			
Domestic use	65 0 0			
		2,140	5	2
Refund insurance premium		1	16	2
		2,142	1	4
Balance (Loss)		304	6	9
		£2,446	8	1

Payments.

	£	s.	d.
Salary and wages	2,226	15	0
Pay Roll Tax	55	13	7
Car allowance	42	12	2
Insurance	35	11	6
Tools and general requisites	19	1	8
Repairs and maintenance to cottages and manager's residence	7	3	11
Cleaning main race	46	9	0
Freight and cartage	5	4	3
Printing	7	17	0
	£2,446	8	1

D. E. WILKINSON, Acting Government Printer, Tasmania.