1913.

WESTERN AUSTRALIA.

REPORT

OF THE

DEPARTMENT OF MINES

FOR THE YEAR

1912.

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

PERTH:
BY AUTHORITY: A. CURTIS, ACTING GOVERNMENT PRINTER.
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The Hon. P. Collier M.L.A.
Minister for Mines.

1912

MAP OF
WESTERN AUSTRALIA

Showing the Goldfields and other Mining Districts
also the distribution of useful Minerals

Prepared in the Geological Survey Office.

Scale of English statute miles.

50 40 30 20 10 0 50 100 150 200

REFERENCE

Towns ... shown thus .... ◉ EUCLA
Railways
Rabbit Proof Fences
Goldfields
Telegraph Lines & Stations
Agricultural Areas
Stock Routes
Heights in feet
Steamer Routes

115° 117° 119° 121° 123° 125° 127°

14 16 18 20 22 24 26 28 30 32 34

From Singapore — Cable — From

Seringapatam Reef
Scott Reef
Browse I.
Lynher Rf.
Bedout I.
Lacepede Is
Beagle I.
Expedition I.
Champagny Is
Coronation Is
Augustus I.
Montalivet Is
Maret I.
Bigge I.
Lomarck I.
Boogie Bk.

BUCCANEER ARCHIPELAGO
DAMPIER ARCHIPELAGO
GEOGRAPHE SHOALS
AMPHINOME SHOALS
NINETY MILE BEACH
SHELLBOROUGH
PORT WELLINGTON
OYSTER H.
WOODHOUSE
COOKES H.
BERCHAUS
MOUNT CECILIA
TAMBOOD
MARBLE
DARDEVER
MUNGAROONA RA.
MT. FLORANCE
MT. PYTON
MT. MARGARET
HAMERSLEY RIVER RANGE
MT. BROCKMAN
MT. BRUCE
MT. LEWIN
MT. MARSH
MT. ROY HILL STN.
MT. KEY
MT. LYNN
MT. HODGSON
MT. MACPHERSON
MT. ISDELL
MT. CONNAUGHTON
MT. CROFTON
MT. JAMES
MT. HARMAN
MT. MARMION
MT. HORTHO
MT. CLARKSON
MT. JOWLAENGA
MT. BARNETT
MT. HARRIS
MT. PAGE
MT. HUMBERT
MT. MAY
MT. ELIZABETH
MT. CASUARINA
MT. CONNELLY
MT. CONNECTION
MT. HANN
MT. JETHRIEN
MT. GIBSON
MT. BROOKING
MT. CLOSE
MT. JARRAD
MT. TURKEY CK.
MT. BUCHANAN
MT. HANFORD
MT. FORSTER
MT. DOCKRELL
MT. HAWICH
MT. BRADLEY
MT. WELLS
MT. LUKE
MT. TUSH
MT. WARTON
MT. NARSBRIDGE
MT. WEEKES
MT. BANNERMAN
MT. ERSKINE
MT. MULLER
MT. CORNISH
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MT. STEWART
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MT. WILSON
MT. ELPHINSTONE
MT. RUSSELL
MT. WEBB
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MT. MEIN
MT. FREDERICK
MT. DESTRUCTION
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MT. COX
MT. GORDON
MT. DAVIS
MT. MOORE
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MT. BATES
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MT. LEAKE
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MT. ESSENDON
MT. METHWIN
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MT. GASCOYNE
MT. STEERE
MT. AGAR
MT. THOMSON
MT. BRESNAHAN
MT. PADBURY
MT. FORREST
MT. ANDERSON
MT. CLOATES
MT. CURIOUS
MT. ELVINE
MT. PYTON
MT. MARGARET
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MT. STEERE
MT. AGAR
MT. THOMSON
MT. BRESNAHAN
MT. PADBURY
MT. FORREST
MT. ANDERSON
MT. CLOATES
MT. CURIOUS

KIMBERLEY
HALLS CK.
WALLABERI
BABRONGAN TOWER
ROEBUCK DOWNS STN.
ROEBUCK BAY
BROOME
Entrance Pt.
C. Villaret
C. Lacouche Treville
PORT SMITH
SADDLE HILL
LAGRANGE
C. Bossut
GEOFFROY B.
C. Jaubert
CHURCH H.
Coroanning W.
Nardie W.
Noorean W.
Nombeet W.
Wallal
RED H.
Solitary I.
Turple I.
Larrey
Poissonnier Pt.
Condon R.
Oyster H.
Port Weld Hurst
Double Hummock
Double I.
Thevenard I.
Long I.
Mary Anne Pt.
Fortescue R.
Beagle Is
Mary Anne
Port Well
Cornic
Barrow I.
C. Dupuy
C. Poiere
Monte Bello Is
Rivoli Reef
Serpentine I.
Hermite I.
Legendre I.
Forrester Is
Enderby I.
Regnard I.
Hampton Har.
Preston
St. James
Scholl I.
Double I.
Lowendal
Gidley I.
Rosemary I.
Dolphin
Lambert
Bessel I. (L.H.)
Round I.
Cossack
Roebourne
Ashburton R.
Fortescue R.
Robe R.
Mt. Herbert
Mt. Stuart
Mt. Anderson
Mt. Cloates
Mt. Florance
Mt. Pyton
Mt. Elvine
Mt. Stuart
Mt. Murray
Mt. Samson
Mt. Brockman
Mt. Bruce
Mt. Lewin
Mt. Marsh
Mt. Roy Hill Stn.
Mt. Key
Mt. Lynn
Mt. Hodgson
Mt. Macpherson
Mt. Isdell
Mt. Connaughton
Mt. Crofton
Mt. James
Mt. Harman
Mt. Marmion
Mt. Horthо
Mt. Clarkson
Mt. Jowlaenga
Mt. Barnett
Mt. Harris
Mt. Page
Mt. Humbert
Mt. May
Mt. Elizabeth
Mt. Casuarina
Mt. Connelly
Mt. Connection
Mt. Hann
Mt. Jethrien
Mt. Gibson
Mt. Brooking
Mt. Close
Mt. Jarrad
Mt. Turkey Ck.
Mt. Buchanan
Mt. Hanford
Mt. Forster
Mt. Dockrell
Mt. Hawich
Mt. Bradley
Mt. Wells
Mt. Luke
Mt. Tush
Mt. Warton
Mt. Narsbridge
Mt. Weekes
Mt. Bannerman
Mt. Erskine
Mt. Muller
Mt. Cornish
Mt. Ernest
Mt. Elvin
Mt. Romilly
Mt. Stewart
Mt. Massie
Mt. Wilson
Mt. Elphinstone
Mt. Russell
Mt. Webb
Mt. Greene
Mt. Mein
Mt. Frederick
Mt. Destruction
Mt. Barlee
Mt. Christopher
Mt. Cox
Mt. Gordon
Mt. Davis
Mt. Moore
Mt. Marchie
Mt. Bates
Mt. Clarence
Mt. Leake
Mt. Nairn
Mt. Essendon
Mt. Methwin
Mt. Clere
Mt. Egerton
Mt. Vernon
Mt. Isabella
Mt. Phillips
Mt. Candolle
Mt. Gascoyne
Mt. Steere
Mt. Agar
Mt. Thomson
Mt. Bresnahan
Mt. Padbury
Mt. Forrest
Mt. Anderson
Mt. Cloates
Mt. Curious

Tropic of Capricorn

Cable from Cocos Is. & S. Africa
Mail Steamers from London

AUSTRALIA
INDIAN OCEAN
SOUTH

Longitude 121° East of Greenwich.

REFERENCE TO MINERAL SIGNS.

GOLD (other than Goldfields)	Au	LEAD	Pb
DIAMONDS	CD	TIN	Sn
COPPER	Cu	ANTIMONY	Sb
IRON	Fe	ASBESTOS	Ab
MICA	M	GUANO AND ROCK PHOSPHATE	
COAL	CC	GRAPHITE	CG
SILVER	Ag	COBALT	Co
ALUMINIUM	Al	BISMUTH	Bi
MANGANESE	Mn	DIATOM-EARTH	Si
OTHER GEMSTONES	Gm	TANTALUM	Ta
ZINC	Z	TUNGSTEN	W
SALT	Na	NICKEL & COBALT	Ni Co

H. J. Pether, Government Lithographer, Perth, W.A.
1913

ANNUAL REPORT OF THE DEPARTMENT OF MINES, WESTERN AUSTRALIA, 1912.

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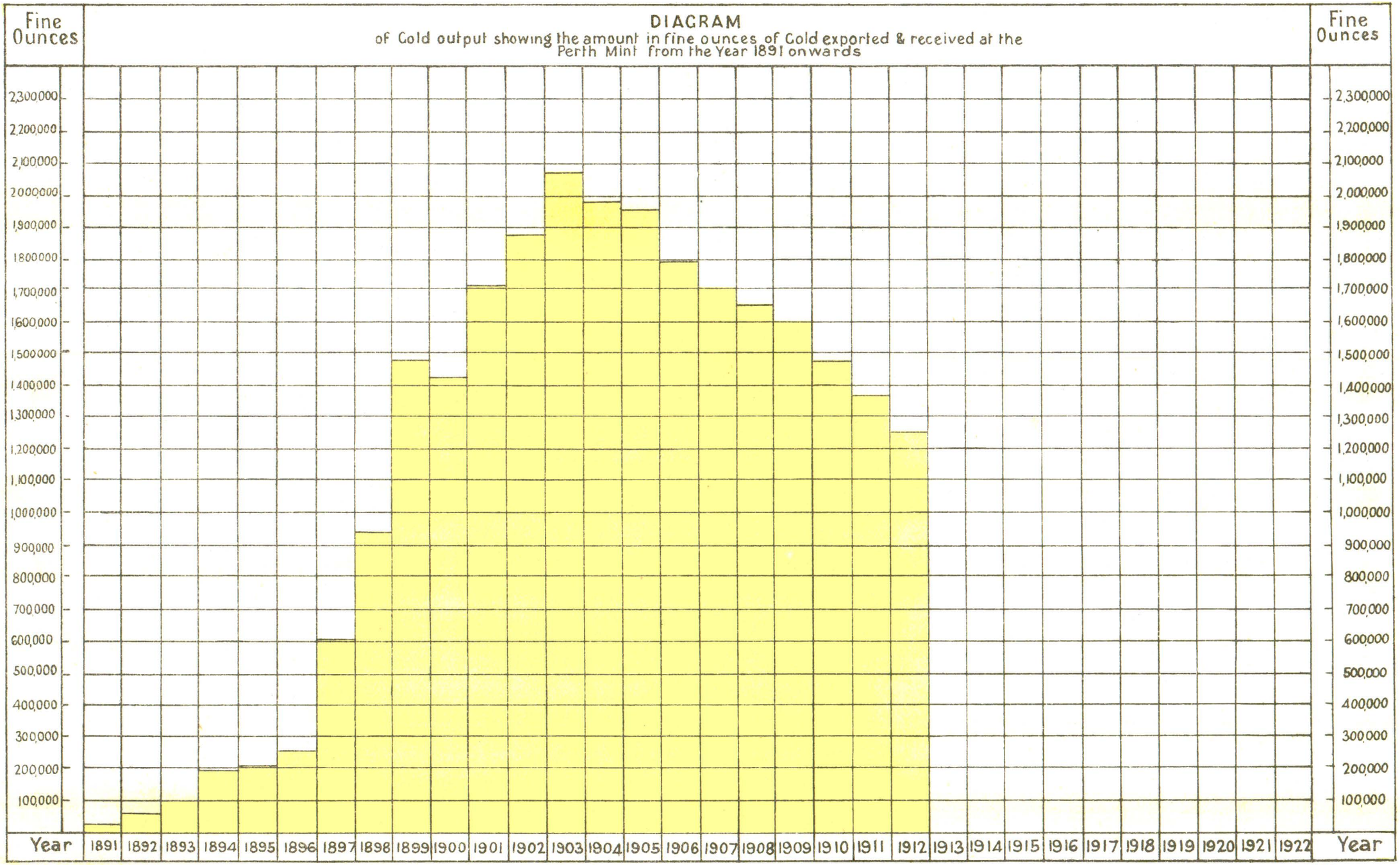
DIAGRAM

of Gold output showing the amount in fine ounces of Gold exported & received at the Perth Mint from the Year 1891 onwards



1913

STATE OF WESTERN AUSTRALIA.

Report of the Department of Mines for the State of Western Australia for the Year 1912.

To the Hon. the Minister for Mines.

SIR,

I have the honour to submit the Annual Report of the Department for the year 1912, with summaries of reports from the Wardens and other officers, together with various comparative tables furnishing statistics relating to the Mining industry of the State.

Reports from the officers controlling the various Sub-Departments are also submitted.

I have, etc.,

H. S. KING,

Under Secretary for Mines.

Department of Mines, Perth, 31st March, 1913.

DIVISION I.

Summary by the Under Secretary for Mines.

PART I.—GENERAL REMARKS.

The value of the mineral output of the State for the year 1912 was £5,760,207, being £345,646 less than that for the previous year.

This decrease is more than accounted for by the falling off in gold, viz., £374,690. Copper also showed a decrease to the extent of £7,581.

The principal increases were in coal £24,703, tin £15,358, and lead ore £7,563.

The value of the gold yield was £5,448,385, being 94.58 per cent. of the total output. The value of the copper output was £60,537 and of tin £70,578. The price of the latter was good throughout the year.

The dividends paid by mining companies amounted to £814,256, a decrease of £12,720 as compared with the preceding year. The figures for 1911 and the total to the end of that year were understated to the extent of £600 in the last Report (see the explanation given on Table 9 herein). To the end of the year the value of the total mineral production was £113,326,510, and the total gold production £109,298,872.

GOLD.

The gold yield, as in the previous year, shows a decrease, the output being 88,209 fine ounces less than that for 1911, while the output for that year was 99,764 fine ounces less than that for 1910.

The average value per ton of ore treated in the State as a whole has fallen from 41.19 shillings in 1911 to 39.64 shillings in 1912, and in the East Coolgardie Goldfield, from which comes over 50 per cent. of the State's yield, from 38.14 shillings to 36.37 shillings.

Comparing the tonnages of ore treated in 1911 and 1912, there is a decrease of 47,075 tons in the latter year, during which 2,688,868 tons were treated.

The largest decreases were in Mount Margaret, Murchison, North Coolgardie, North-East Coolgardie, and East Murchison fields, the tonnages being 96,301, 38,863, 17,910, 16,250, and 12,205 tons respectively less than in the preceding year. Larger tonnages were treated in Yilgarn, Broad Arrow, Dundas, Yalgoo, East Coolgardie, Phillips River, Peak Hill, and Pilbara, the increases being 54,302, 18,312, 15,747, 9,277, 6,267, 1,206, 567, and 139 tons respectively.

Working costs again show a slight reduction, and this is satisfactory, as rendering possible the working at a profit of lower grade ore. The average working costs per ton of 2,000lbs., as published by the Chamber of Mines, were:—In 1908, 19s. 3d.; in 1909, 19s. 11.5d.; in 1910, 20s. 1d.; in 1911, 20s.; and in 1912, 19s. 3d.

More than half of the fall in the gold production is attributable to the Mount Margaret Goldfield, and this is in a large measure owing to the closing down of the Lancefield mine at Laverton and the South Gwalia at Leonora. In the East Coolgardie, Murchison, North Coolgardie, North-East Coolgardie, Dundas, East Murchison, Phillips River, and Ashburton fields there were also decreases, but the remainder showed an improvement, the most notable being Yilgarn, its yield being better than it has been for many years.

The area held under mining lease for all minerals is 56,602 acres, being a decrease of 8,666 acres when compared with 1911. The area leased for gold mining is less by 9,976 acres, and for minerals greater by 1,310 acres. The area held under Prospecting Areas is 39,064 acres, including 29,420 acres for coal and oil. This is a decrease on the area held in 1911 of 9,444 acres.

The number of men engaged in all classes of mining is 14,961, a decrease of 1,635 as compared with the previous year. The number of men engaged in mining for minerals other than gold increased by 93. There were increased numbers mining for tin and coal, but less for copper. In mining for pyritic ore and lead there were small increases. In gold mining there was a decrease of 1,728.

The average value of gold produced per man employed on gold mines has increased from £380.77 in 1911 to £403.57 in 1912. The average tonnage raised per man was 203.64 tons, and in the preceding year 184.94 tons.

In the East Murchison field there has been a falling off.

In the Lawlers district the output shows a decrease consequent on the absence of any return from the Northern mines, but other leases throughout the centre show an improvement.

In the Wiluna district matters have remained quiet, but at Mt. Keith, where in the previous year some promising discoveries were made, a State plant is in course of erection, and its completion will, it is hoped, mean the commencement of a prosperous era for the locality.

In the Black Range district, the output showed an improvement largely attributable to the Yuanmi Gold Mines, Ld., which it is expected will now be a steady producer. The district has been opening up well.

In the Murchison Goldfield the Cue district shows a decrease, due to a falling off in the output from the Hidden Treasure leases which last year gave good returns. None of the other properties in the district had any development of note. At Poonah a discovery of emeralds was made, which caused a good deal of activity, but it is yet too early to express an opinion as to its ultimate value.

In the Day Dawn district the output was less, due to the decreased output from the Great Fingall, the prospects of which, however, are brighter. The remainder of the district has not improved.

In the Nannine district the output was less, owing to diminished returns from all centres excepting Meekatharra, which gave an increase. This centre is looking exceptionally well, the mines continuing to open up splendidly. At Garden Gully the Kyarra mine is looking well, but in the other centres there has been little to report.

In the Mount Magnet district there was a slight increase, due to several rich crushings from small properties. Two of the principal mines, the Morning Star and St. George, closed down but the finding of numerous rich patches at various centres has resulted in a renewed interest in prospecting, which may lead to the discovery of other big mines.

The production of the Mount Margaret field shows a decrease, and in the Mount Morgans district matters have remained quiet excepting for a slight revival at the old abandoned locality of Mount Margaret, where a good deal of prospecting is being pursued with encouraging results.

The Mount Margaret district shows a falling off, due principally to the closing down of the Lancefield mine, which, however, is expected to re-open early in the new year. The Ida H. has been crushing continuously and its output shows an increase.

The Augusta is being equipped with new plant and an early start in crushing is expected. The outlying centres have been quiet.

The Mount Malcolm district also shows a decrease, principally due to a lessened output from the Sons of Gwalia and the closing down of the Sons of Gwalia South. In the outlying centres a good deal of prospecting has been going on.

The Coolgardie field shows an increase, the output being the highest since 1907. The Burbanks centre continues to be the main producing one, and several of the mines there are looking well.

In the Kunanalling centre there has been an improvement, but in the others nothing of note transpired.

The North Coolgardie field again records a decreased output.

In the Menzies centre the principal mine, the Menzies Consolidated at Yunndaga, is opening up encouragingly and is a regular producer.

At Comet Vale several mines are opening up splendidly, and this centre will undoubtedly justify the predictions that have been made regarding its future.

In the Niagara district the Golden Butterfly at Tampa and the Lubra are opening up well. The other centres had not any developments of note.

The North-East Coolgardie Goldfield records a decreased output, but during the year a find was made at Kurnalpi which may eventually result in this district being more actively developed.

At Binti-Binti there was also increased activity and several new leases were taken up; although in the other centres there was nothing of note, the prospects of the field are brighter than at the commencement of the year.

The Broad Arrow Goldfield shows an increase which is entirely attributable to the Ora Banda centre, which is opening up splendidly and has a most promising future. The erection of a State plant there has been promised and will be in hand early in the new year. An ample water supply has also been provided by the State. The other centres have remained quiet.

In the East Coolgardie Goldfield the number of men engaged in mining was 5,518, and in 1911 5,836, a decrease of 318. This goldfield gave employment to about 40 per cent. of the number of men employed in gold-mining, and produced during the year 756,795 fine ounces of gold, about 59 per cent. of the total gold yield. The tonnage treated during the year was 1,763,265 tons, being greater than in 1911 by 36,267 tons. The average grade of the ore fell from 38.14 shillings in 1911 to 36.37 shillings in 1912. The output shows a decrease, but development work has been continued on most of the large mines with promising occurrences in the Hannans Reward, Golden Horseshoe, and Great Boulder mines. Apart from these the field has altered but little.

The Yilgarn Goldfield shows a substantial increase, the output being the highest for many years. The plant on the Bullfinch mine was completed and it is expected that it will now be a regular producer. The Marvel Loch centre continues to be the largest contributer and the mines there are looking well. At Weston's some good developments have occurred and the Edna May mine is coming into prominence as a large producer. In the Marda centre there have been some rich crushings and generally the prospects of this field are most promising.

The Dundas field shows a small decrease but steady development work has been pursued, and on the Lady Miller leases good progress made. The plant has been reorganised and additional erected.

On the Princess Royal mine a winze is being put down to test the property at a depth. In this work the Government is assisting. The prospects of the field are encouraging.

The Phillips River Goldfield shows a decrease consequent on the closing down of the mines owned by the Phillips River Gold and Copper Company, which, excepting for a few tributers, were closed down during the year.

At Kundip some good returns were obtained, but otherwise there was little improvement.

In the Northern Goldfields, Kimberley, Pilbara, West Pilbara, and Gascoyne, there has not been much change. During the year one of the professional staff visited them for the purpose of recommending what assistance, if any, should be rendered. As a result State plants are to be established at Wodgina and Bamboo Creek in the Pilbara field to give every possible help to the prospectors, and in the West Pilbara field the Department is helping by making advances against ore, and shipping it for treatment, the balance, less charges, etc., being paid over on receipt of the results. It is hoped that this will materially help the industry.

TIN.

The quantity of tin exported was greater than in 1911 by 80 tons, and in value by £15,350. The Green-

bushes tinfield produced 430.45 tons, valued at £50,166, being an increase on the previous year, and the Pilbara field 123.38 tons valued at £14,993, being a decrease on the previous year.

The former field continues to show all-round activity and improvement, but the latter is still unfortunately stagnating in the matter of tin mining, which is difficult to understand in view of the good prices ruling for the metal.

TANTALITE.

None of this metal was reported or exported, consequent, as in the preceding year, on the absence of any market.

COPPER.

The value of copper exported was £60,537, being £17,581 less than in 1911. The quantity raised in the West Pilbara field was 12,284.02 tons, valued at £104,289, an increase in tonnage of 3,202 tons, and in value of £35,149.

In the Pilbara field there was not any production, but in the preceding year the output was 30.10 tons, valued at £316.

In the Phillips River Field the production was 1,318.38 tons, valued at £15,815, a decrease, as compared with 1911, in tonnage of 12,245.30 tons, and in value of £31,047. This is owing to the continued closing down of the mines of the Phillips River Gold and Copper Co., which has been endeavouring to raise further capital for the purpose of re-opening.

The Murchison Goldfield produced 4.80 tons, valued at £54, but none in the preceding year.

The average number of men engaged in copper mining was 223 and in 1911, 317.

COAL.

Six coal mines are working on the Collie field, and the output for the year was 295.079 tons, being 45,180 tons more than in 1911.

This improvement is due to the more general use of improved machinery, and is most satisfactory, particularly as there has been a falling off in the bunkering trade. The field is looking extremely well.

The number of men employed, 542, is greater by 79 than in 1911, and the output per man was in 1911, 539 tons, and in 1912, 544 tons.

OTHER MINERALS.

The quantity of silver obtained as a by-product and exported was 138,039ozs., valued at £16,353, and for the preceding year 169,043ozs., valued at £18,333. Lead ore to the extent of 1,868 tons, valued at £22,565, was exported, and 7,625.80 tons of pyritic ore, valued at £2,543, were reported to the Department. No wolfram, asbestos, or mica was reported or exported.

MINING GENERALLY.

Again, as in the previous year, Western Australia is not singular in its decreased output, the other States, with the exception of South Australia and Tasmania, showing lessened outputs. New Zealand and the Northern Territory also record a falling off, but the territory of Papua has a substantial increase. Notwithstanding the falling off, the work of the year has been, on the whole, encouraging, the continued improvement in the mines at Meekatharra, the steady advance at Westons, the general improvement throughout the Yilgarn field, the improved output from Coolgardie, the discovery at Ruby Well, and the splendid opening up of the Victorious and other mines at Ora Banda are factors which go to show that there are still great possibilities ahead. The continued drought on most of the goldfields has also militated considerably against the pursuance of vigorous prospecting, especially in new and remote localities. The Government continues to render assistance to *bona fide* prospectors by the loans of equipment and means of transport, and the whole of the outfit is in constant use. The area held as prospecting areas for gold and minerals, viz., 9,644 acres, although slightly less than in the preceding year, is an indication that a good deal of prospecting is still going on.

The assistance rendered under the provisions of the Mining Development Act, details of which are given in the report of the State Mining Engineer, published as Division II. of this report, and which is intended to aid in the development of partly opened up mines, principally by their equipment with machinery, is evidence of the determination of the Government to foster the industry.

A good deal of systematic searching, by means of diamond drilling, was also undertaken, and this it is intended to continue whenever there is a reasonable prospect of success.

COMPARATIVE STATISTICAL DIAGRAMS

RELATING TO

OUTPUT AND VALUE OF GOLD AND OTHER MINERALS, LANDS LEASED FOR GOLD MINING

IN WESTERN AUSTRALIA

AND THE GOLD PRODUCTION OF AUSTRALASIA FOR THE YEAR 1912.

Fig. 1.

Output of Gold from various Goldfields as reported to Mines Dept.

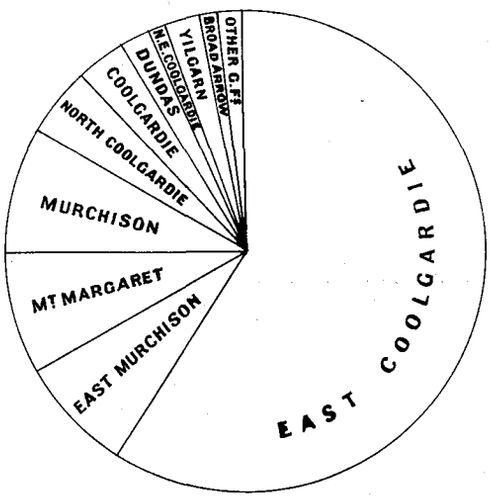


Fig. 2.

Gold produced from various Goldfields as given by the Export and Mint Returns.

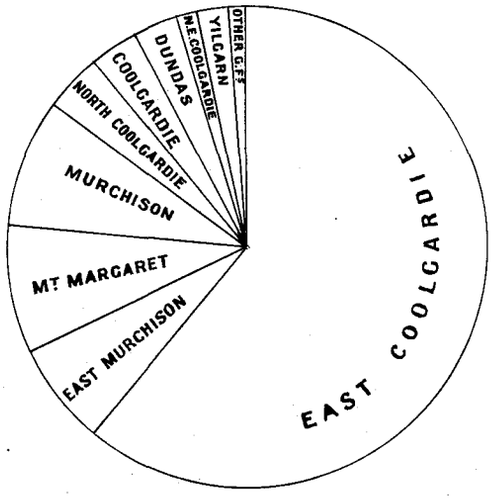


Fig. 3

Value of Gold and other Minerals.

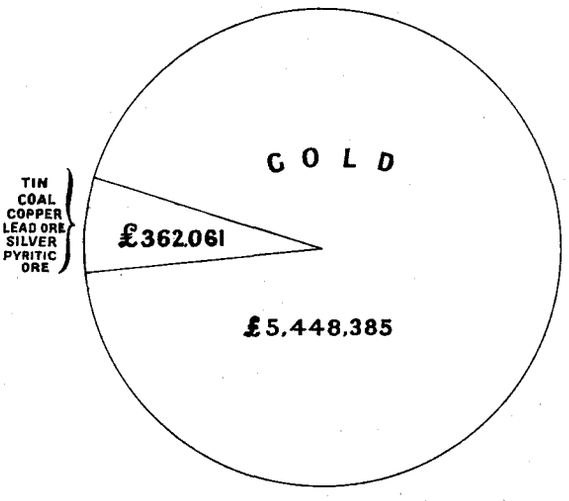


Fig. 4

Value of Minerals other than Gold.

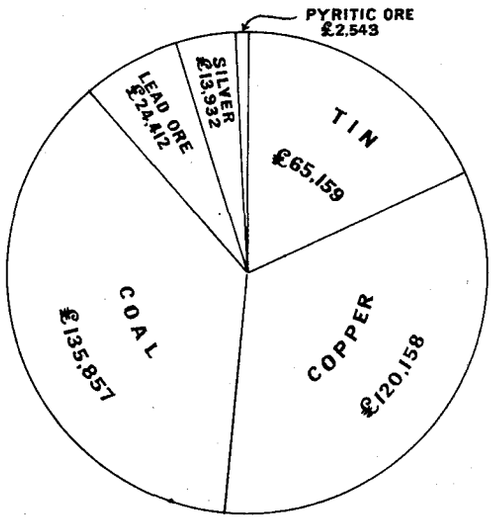


Fig. 5

Areas of Land leased for Goldmining on various Goldfields.

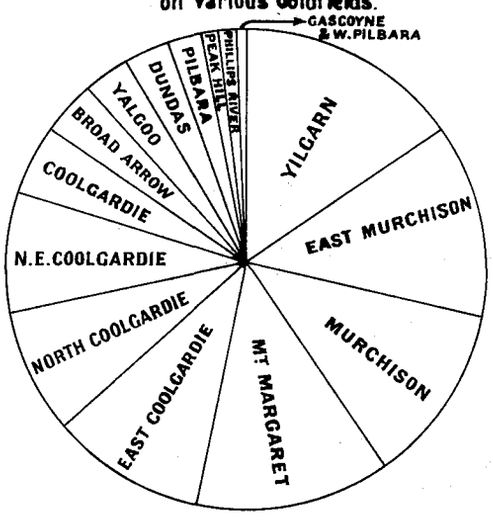
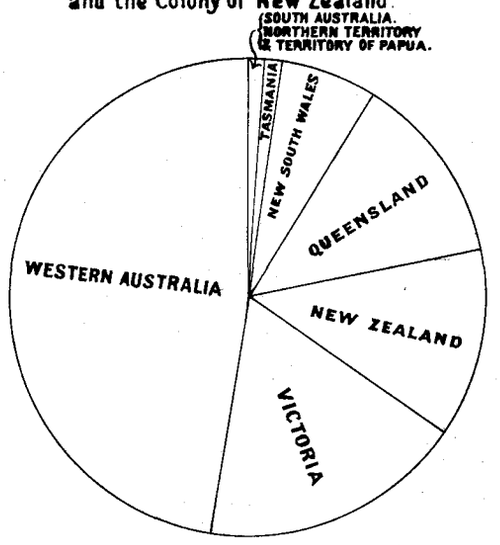


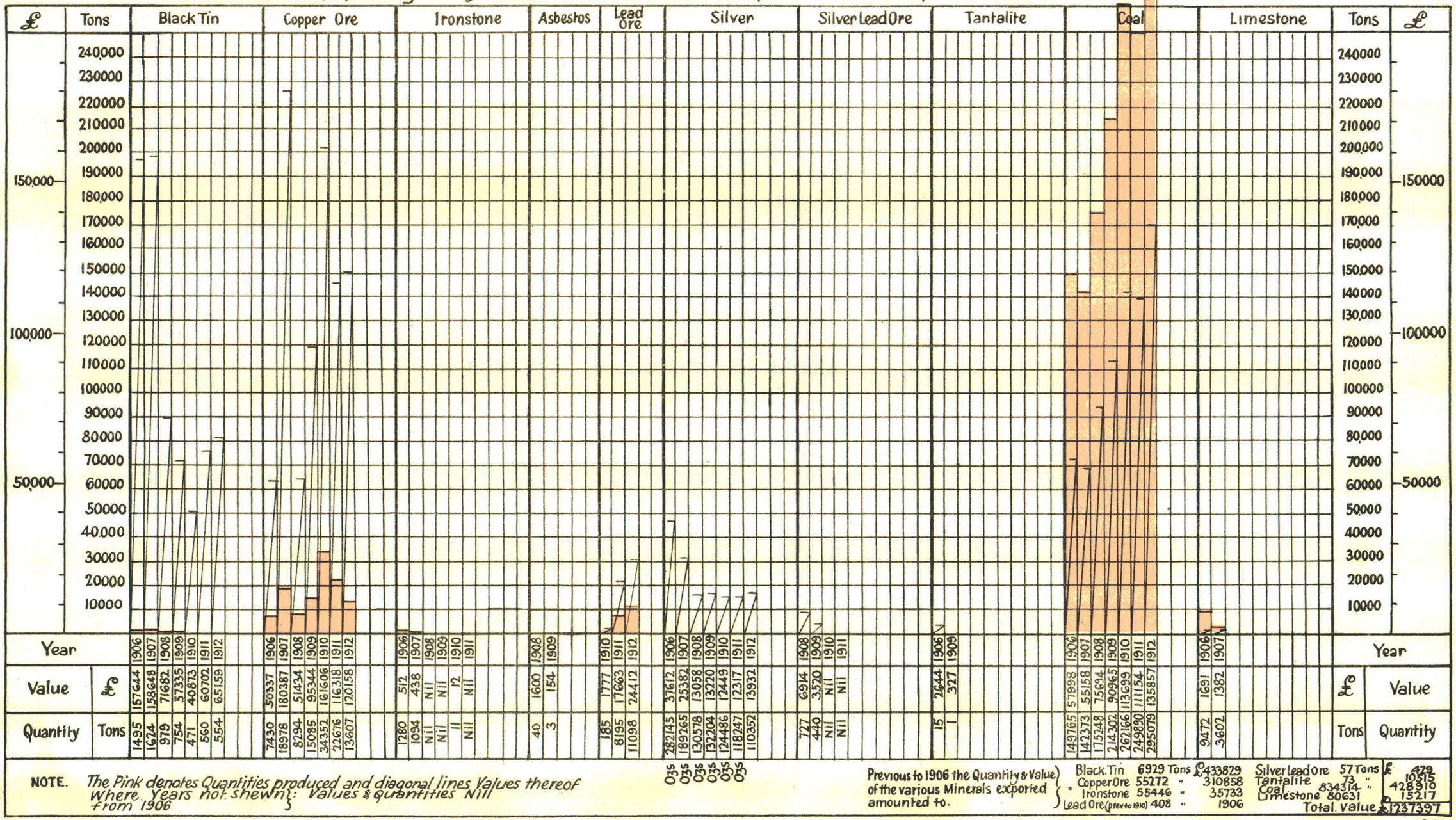
Fig. 6

Output of Gold in the States of Australia and the Colony of New Zealand.



DIAGRAM

of the Mineral Output, showing Quantity & Value of Minerals other than Gold reported to the Mines Department from the Year - 1906 onwards



NOTE. The Pink denotes Quantities produced and diagonal lines Values thereof Where Years not shewn: Values & Quantities Nill from 1906

Previous to 1906 the Quantity & Value of the various Minerals exported amounted to.

Black Tin	6929 Tons	£433829	Silver Lead Ore	57 Tons	£ 479
Copper Ore	55272 "	310858	Tantalite	73 "	10515
Ironstone	55446 "	35733	Coal	834314 "	428910
Lead Ore (prev to 1910)	408 "	1906	Limestone	80631	15217
			Total Value		£1237397

1913.

PART II.—MINERALS RAISED.

TABLE 1.

Quantity and Value of all the Minerals produced during 1911 and 1912.

Description of Minerals.	1911.		1912.		Increase or Decrease for Year compared with 1911.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
		£		£		£
1. Coal (raised), statute tons	249,899	111,154	295,079	135,857	+ 45,180	+ 24,703
2. Copper { Ore (exported), statute tons ...	9,825	33,709	9,556	59,388	− 269	+ 25,679
2. Copper { Ingot, Matte, etc. (exported), statute tons	828	44,409	8	1,149	− 820	− 43,260
3. Gold (exported and minted), fine ounces...	1,370,867	5,823,075	1,282,658	5,448,385	− 88,209	− 374,690
4. Lead Ore (exported), statute tons ...	1,549	15,002	1,868	22,565	+ 319	+ 7,563
5. Pyritic Ore (reported), statute tons ...	9,939	3,529	7,626	2,543	− 2,313	− 986
6. Silver (exported), fine ounces	169,043	18,333	138,039	16,353	− 31,004	− 1,980
7. Tin, Ore and Ingot (exported), statute tons	495	55,220	575	70,578	+ 80	+ 15,358
8. Wolfram (exported), statute tons ...	9	826	...	...	− 9	− 826
9. Zinc, Spelter, etc. (exported), statute tons	12	189	14	217	+ 2	+ 28
Unenumerated (exported)	...	407	...	3,172	...	+ 2,765
Total Values ... £	...	6,105,853	...	5,760,207	...	− 345,646

TABLE 2.

Value and Percentage of Mineral Exports in relation to the value of Total Exports from Western Australia.

Year.	Total Exports.	Mineral Exports (exclusive of Coal).	Percentage.
	£	£	
1901	8,515,623	6,920,118	81·27
1902	9,051,358	7,530,319	83·20
1903	10,324,732	8,727,060	84·53
1904	10,271,489	8,625,676	83·98
1905	9,871,019	7,731,954	78·33
1906	9,832,679	7,570,305	76·99
1907	9,904,860	7,544,992	76·17
1908	9,518,020	7,151,317	75·13
1909	8,860,494	5,906,673	66·66
1910	8,299,781	4,795,654	57·78
1911	10,606,863	7,171,638	67·61
1912	8,941,008	5,462,499	61·09
12 Years Total	113,997,926	85,138,205	74·68

TABLE 3.

Summary of Gold exported and received at the Perth Branch of the Royal Mint during 1911 *and* 1912 *compared with the yields reported to the Mines Department; also the percentage of the latter for the several Goldfields, and the average value of Gold per ton of ore treated.*

Goldfield.	Export and Mint.		Reported Yield.					
					Percentage for each Goldfield.		Average Value of Gold per ton of Ore treated.	
	1911.	1912.	1911.	1912.	1911.	1912.	1911.	1912.
	fine ozs.	fine ozs.	fine ozs.	fine ozs.			shillings.	shillings.
1. Kimberley	149	**295**	171	**272**	·01	**·02**	...	...
2. Pilbara	4,874	**6,274**	4,608	**5,999**	·34	**·47**	94·33	**123·25**
3. West Pilbara	877	**747**	983	**1,118**	·07	**·09**	165·58	**723·25**
4. Ashburton	271	**39**	256	**39**	·02	...	...	...
5. Gascoyne	8	**7**	8	**7**	...	...	...	...
6. Peak Hill	134	**196**	1,747	**1,862**	·13	**·15**	...	**216·76**
7. East Murchison	96,455	**90,398**	102,391	**99,131**	7·65	**7·82**	86·30	**44·54**
8. Murchison	123,365	**111,622**	119,653	**105,373**	8·94	**8·31**	42·49	**49·90**
9. Yalgoo	295	**1,169**	1,162	**6,166**	·09	**·49**	101·65	**51·19**
10. Mt. Margaret	152,583	**106,190**	152,474	**102,970**	11·39	**8·12**	41·25	**40·00**
11. North Coolgardie	60,480	**50,000**	64,760	**58,270**	4·84	**4·60**	56·08	**61·88**
12. Broad Arrow	457	**4**	7,153	**13,375**	·53	**1·05**	64·11	**40·23**
13. North-East Coolgardie ...	18,529	**14,670**	19,555	**13,856**	1·46	**1·09**	31·19	**31·83**
14. East Coolgardie	809,547	**788,785**	776,494	**756,795**	57·99	**59·69**	38·14	**36·37**
15. Coolgardie	33,841	**42,328**	33,754	**42,182**	2·52	**3·33**	45·19	**58·05**
16. Yilgarn	14,688	**27,439**	18,811	**30,675**	1·40	**2·42**	82·96	**35·55**
17. Dundas	48,361	**38,373**	28,990	**25,314**	2·17	**2·00**	64·01	**39·45**
18. Phillips River	5,616	**3,292**	5,657	**4,201**	·42	**·33**	67·84	**42·53**
State generally	338	**830**	360	**240**	·03	**·02**	...	...
Totals and averages ...	1,370,868	**1,282,658**	1,338,987	**1,267,845**	100·00	**100·00**	41·19	**39·64**

Throughout this report, when dealing with the total gold yield of the State, the total compiled from the export and Royal Mint figures is used, as alluvial and other gold not reported to the Department is embraced in this return.

When comparisons are made as to the yield from any particular field with the preceding year the figures reported to the department are used. The Broad Arrow, Coolgardie, Kimberley, Peak Hill, Pilbara, West Pilbara, Yalgoo and Yilgarn fields each show increases.

TABLE 4.

Number of Gold-producing Mines in the several Goldfields and Districts during 1911 and 1912

Goldfield.	District.	1911.		1912.		Increase or Decrease.
		District.	Goldfield.	District.	Goldfield.	
Kimberley	... ...	...	...	...	...	...
Pilbara	Marble Bar ...	18	28	**17**	**30**	+ **2**
	Nullagine	10		**13**		
West Pilbara	... ...	...	5	...	**3**	− **2**
Ashburton	... ...	...	...	...	...	...
Gascoyne	... ...	...	...	...	...	...
Peak Hill	... ...	...	5	...	**5**	=
East Murchison ...	Lawlers	27	94	**23**	**75**	− **19**
	Wiluna	25		**22**		
	Black Range ...	42		**30**		
Murchison	Cue	37	152	**17**	**115**	− **37**
	Nannine	71		**52**		
	Day Dawn ...	14		**10**		
	Mt. Magnet ...	30		**36**		
Yalgoo	... ...	...	8	...	**26**	+ **18**
Mt. Margaret ...	Mt. Morgans ...	11	85	**7**	**68**	− **17**
	Mt. Malcolm ...	42		**34**		
	Mt. Margaret ...	32		**27**		
North Coolgardie ...	Menzies	43	129	**31**	**101**	− **28**
	Ularring	29		**23**		
	Niagara	20		**17**		
	Yerilla	37		**30**		
Broad Arrow	... ...	...	42	...	**28**	− **14**
North-East Coolgardie	Kanowna	35	39	**30**	**38**	− **1**
	Kurnalpi	4		**8**		
East Coolgardie ...	East Coolgardie ...	62	68	**60**	**64**	− **4**
	Bulong	6		**4**		
Coolgardie	Coolgardie	44	66	**36**	**56**	− **10**
	Kunanalling ...	22		**20**		
Yilgarn	... ...	...	98	...	**101**	+ **3**
Dundas	... ...	...	41	...	**22**	− **19**
Phillips River	... ...	...	24	...	**19**	− **5**
Totals		...	884	...	**751**	− **133**

TABLE 5.

Gold Yield from Registered Gold Mining Companies and Gold Mining Leases for the Years 1909, 1910, 1911, *and* 1912.

Goldfield.	REGISTERED COMPANIES PRODUCING OVER 12,000ozs.								REGISTERED COMPANIES PRODUCING UNDER 12,000ozs.								LEASES, EXCLUSIVE OF SUNDRY CLAIMS AND TREATMENTS.							
	1909.		1910.		1911.		1912.		1909.		1910.		1911.		1912.		1909.		1910.		1911.		1912.	
	No.	Fine ozs.	No.	Fine ozs.	No.	Fine ozs.	No.	Fine ozs.	No.	Fine ozs.	No.	Fine ozs.	No.	Fine ozs.	No.	Fine ozs.	No.	Fine ozs.	No.	Fine ozs.	No.	Fine ozs.	No.	Fine ozs.
Kimberley	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pilbara	...	...	...	...	...	...	...	...	4	128	2	133	...	...	...	...	26	3,095	25	3,209	28	2,796	30	4,358
West Pilbara ...	...	...	...	...	...	...	...	...	1	29	...	...	...	...	...	...	4	1,109	5	1,269	5	820	3	1,020
Peak Hill	...	...	...	...	...	...	...	...	2	7,136	2	3,189	1	1,134	1	1,047	6	664	6	883	4	330	4	339
East Murchison ...	4	97,632	3	70,628	3	69,573	3	68,908	8	33,986	9	35,717	12	15,319	11	12,063	109	19,670	110	16,397	79	11,406	61	10,873
Murchison	1	41,269	1	44,895	1	36,767	1	27,199	12	21,834	11	24,433	10	20,476	8	17,681	184	64,924	174	49,420	141	57,459	106	47,979
Yalgoo	...	...	...	...	...	...	...	...	2	629	3	808	2	39	5	2,174	12	1,175	9	403	...	547	21	3,481
Mt. Margaret ...	4	107,252	2	102,400	2	107,918	1	60,893	11	16,876	9	27,484	16	24,982	13	30,286	66	28,193	80	23,966	67	15,571	54	8,818
N. Coolgardie ...	...	...	...	...	...	...	...	...	18	35,657	19	26,083	20	22,803	17	24,031	149	37,592	121	31,524	109	32,258	84	26,838
Broad Arrow	..	...	...	...	...	...	...	...	3	2,352	2	1,078	...	...	2	5,266	45	14,770	46	9,307	42	5,205	26	3,297
N.E. Coolgardie ...	...	...	..	...	...	...	...	...	9	14,781	6	11,517	7	9,710	7	5,597	44	7,803	32	5,119	32	4,771	31	6,139
E. Coolgardie ...	13	811,789	15	703,705	11	678,903	12	684,853	31	31,120	18	25,180	17	49,994	15	23,060	69	36,673	52	33,163	40	27,909	37	27,381
Coolgardie	...	...	...	...	...	...	...	...	14	15,966	11	19,310	17	20,591	10	24,761	72	15,723	72	13,796	49	9,502	46	12,766
Yilgarn	...	...	...	...	...	...	...	...	5	10,526	5	9,782	15	10,679	14	6,166	40	8,312	53	16,449	83	6,472	87	12,006
Dundas	1	12,750	1	13,626	1	16,521	1	14,902	7	6,017	7	9,011	5	2,947	4	4,247	36	7,577	31	4,537	35	8,260	17	4,996
Phillips River ...	...	...	...	...	...	...	...	...	4	3,266	6	4,695	5	1,324	3	151	19	3,445	18	3,018	19	3,886	16	3,850
Total	23	1,070,692	22	935,254	18	909,682	18	856,755	131	200,303	110	198,420	127	179,998	110	156,530	881	250,725	834	212,460	739	187,192	623	174,141

TABLE 6.

Increase or Decrease in Output of certain producing Gold Mines in 1912, as compared with 1911.

Goldfield.	District.	Name of Mine.	Gold Production.		Increase or Decrease for Year, compared with 1911.
			1911.	1912.	
			Fine ozs.	Fine ozs.	Fine ozs.
Peak Hill		1. Peak Hill Goldfield, Ltd.	1,134·33	1,046·69	— 87·64
East Murchison	Lawlers	2. Northern Mines, Ltd.	21,014·20	2,491·98	— 18,522·22
Do.	Wiluna	3. Gwalia Consolidated, Ltd.	1,513·10	540·28	— 972·82
Do.	do.	4. Wiluna G.Ms., Ltd.	3,010·93	1,872·02	— 1,138·91
Do.	Black Range	5. Havilah G.M. Co., N.L.	4,042·89	2,965·90	— 1,076·99
Do.	do.	6. Black Range Mining Co., N.L.	23,048·13	21,821·47	— 1,226·66
Do.	do.	7. Oroya Black Range, Ltd.	25,510·44	24,623·27	— 887·17
Do.	do.	8. Sandstone G.M. Co., N.L.	3,483·48	3,064·95	— 418·53
Do.	do.	9. Yuanmi G.Ms., Ltd.	..	22,463·02	+ 22,463·02
Murchison	Cue	10. Hidden Treasure	6,158·67	2,477·84	— 3,680·83
Do.	Nannine	11. Commodore G.M. Co., N.L.	..	2,543·64	+ 2,543·64
Do.	do.	12. Fenian leases	15,945·59	21,837·81	+ 5,892·22
Do.	do.	13. Ingliston Consols Extended leases	10,314·26	8,335·27	— 1,978·99
Do.	do.	14. Ingliston Extended G.Ms., Ltd.	6,546·98	4,687·16	— 1,859·82
Do.	do.	15. Marmont	5,551·65	2,509·12	— 3,042·53
Do.	Day Dawn	16. Great Fingall Consolidated, Ltd.	36,767·41	27,199·21	— 9,568·20
Do.	Mt. Magnet	17. Great Boulder No. 1, Ltd.	6,766·20	4,979·18	— 1,787·02
Do.	do.	18. Morning Star G.Ms., Ltd.	4,767·17	2,929·86	— 1,837·31
Yalgoo		19. Royal Standard leases	294·63	2,179·84	+ 1,885·21
Mt. Margaret	Mt. Morgans	20. Westralia Mt. Morgans G.Ms., Co., Ltd.	1,269·72	18·96	— 1,250·76
Do.	do.	21. Hills Proprietary, Ltd.	3,552·94	2,078·83	— 1,474·11
Do.	Mt. Malcolm	22. Sons of Gwalia, Ltd.	70,412·34	60,893·32	— 9,519·02
Do.	do.	23. Sons of Gwalia South, G.Ms., Ltd.	9,806·79	3,169·89	— 6,636·90
Do.	do.	24. North Star: Malcolm Prospecting Co., N.L.	1,335·84	2,047·91	+ 712·07
Do.	Mt. Margaret	25. Ida H. G.M. Co., Ltd.	8,711·09	9,058·61	+ 347·52
Do.	do.	26. Lancefield G.M. Co., Ltd.	37,505·50	11,272·33	— 26,233·17
North Coolgardie	Menzies	27. Gladsome leases	4,802·03	3,335·62	— 1,466·41
Do.	do.	28. Sand Queen G.Ms., Ltd.	5,455·10	8,851·14	+ 3,396·04
Do.	do.	29. Menzies Consolidated G.Ms., Ltd.	10,458·94	10,169·49	— 289·45
Do.	do.	30. Menzies G.M. leases	2,539·80	4,365·72	+ 1,825·92
Do.	Ularring	31. Riverina South leases	362·44	1,446·49	+ 1,084·05
Do.	Niagara	32. Champion	2,292·22	640·58	— 1,651·64
Do.	do.	33. Orion Mines, Ltd.	2,043·50	1,090·87	— 952·63
Do.	do.	34. Golden Butterfly G.M. Co., N.L.	..	1,384·66	+ 1,384·66
Broad Arrow		35. Associated Northern Blocks (W.A.), Ltd.	143·56	5,256·19	+ 5,112·63
Do.		36. Siberia Consols	1,238·17	571·58	— 666·59
N.E. Coolgardie	Kanowna	37. Sirdar G.M. Co., Ltd.	1,472·09	359·06	— 1,113·03
Do.	do.	38. North White Feather G.Ms., Ltd.	5,425·14	5,091·19	— 333·95
East Coolgardie	East Coolgardie	39. Golden Ridge G.M. Co., Ltd.	17,496·80	14,718·50	— 2,778·30
Do.	do.	40. Associated G.Ms. of W. A., Ltd.	32,838·72	38,810·09	+ 5,971·37
Do.	do.	41. Associated Northern Blocks (W.A.), Ltd.	11,406·49	19,119·01	+ 7,712·52
Do.	do.	42. Golden Horseshoe Estates Co., Ltd.	95,079·80	91,342·51	— 3,737·29
Do.	do.	43. Great Boulder Perseverance G.M. Co., Ltd.	72,120·88	62,932·23	— 9,188·65
Do.	do.	44. Great Boulder Proprietary G.Ms., Ltd.	133,776·44	134,678·93	+ 902·49
Do.	do.	45. Hainault G.Ms., Ltd.	18,578·07	16,745·77	— 1,832·30
Do.	do.	46. Idaho leases	2,027·49	4,213·46	+ 2,185·97
Do.	do.	47. Ironsides North leases	3,656·89	6,126·81	+ 2,469·92
Do.	do.	48. Ivanhoe Gold Corporation, Ltd.	113,742·34	110,452·47	— 3,289·87
Do.	do.	49. Kalgurli G.Ms., Ltd.	63,306·75	58,444·63	— 4,862·12
Do.	do.	50. Lake View and Star, Ltd.	57,361·92	63,980·06	+ 6,618·14
Do.	do.	51. North Kalgurli Co., Ltd.	7,994·89	4,702·04	— 3,292·85
Do.	do.	52. Oroya Links, Ltd.	40,827·71	40,953·10	+ 125·39
Do.	do.	53. Paringa Mines (1909), Ltd.	3,908·21	5,446·63	+ 1,538·42
Do.	do.	54. South Kalgurli G.Ms., Ltd.	33,773·41	32,676·07	— 1,097·34
Do.	do.	55. Golden Zone leases	10,814·20	7,398·68	— 3,415·52
Do.	do.	56. Hannan's Reward, Ltd.	3,555·83	3,879·56	+ 323·73
Do.	Bulong	57. Southern Cross leases	1,077·24	758·75	— 318·49
Coolgardie	Coolgardie	58. Burbanks Birthday G.Ms., Ltd.	1,477·69	10,409·71	+ 8,932·02
Do.	do.	59. Burbanks Main Lode (1904), Ltd.	10,834·51	11,558·34	+ 723·83
Do.	do.	60. Bayley's leases	667·09	2,114·76	+ 1,447·67
Do.	do.	61. Tindalls Coolgardie G.M. Co., N.L.	5,151·73	1,575·74	— 3,575·99
Do.	do.	62. Hidden Secret North leases	2,108·60	2,825·50	+ 716·90
Do.	Kunanalling	63. Carbine leases	1,448·37	1,597·92	+ 149·55
Yilgarn		64. Comet	567·55	1,253·84	+ 686·29
Do.		65. Marvel Loch G.M. Co., N.L.	277·80	2,266·37	+ 1,988·57
Do.		66. Mountain Queen, Ltd.	..	9,589·25	+ 9,589·25
Do.		67. Great Unknown	304·31	1,374·63	+ 1,070·32
Do.		68. British and Foreign Development Synd., Ltd.	2,413·05	1,660·47	— 752·58
Do.		69. Greenfinch Proprietary G.M., N.L.	478·93	1,547·93	+ 1,069·00
Dundas		70. Cumberland G.M. Co., N.L.	2,698·41	924·45	— 1,773·96
Do.		71. Hampton Uruguay, Ltd.	..	3,273·07	+ 3,273·07
Do.		72. Mararoa G.M. Co., N.L.	16,520·73	14,901·68	— 1,619·05
Do.		73. Viking No. 1 leases	5,941·64	3,314·77	— 2,626·87
		Totals	1,118,931·76	1,079,238·68	— 39,693·08

Of the above 73 gold mines, 31 produced 104,141·40 fine ounces more, and 42 produced 143,834·48 fine ounces less than in 1911, being a net decrease of 39,693·08 fine ounces.

TABLE 7.

Averages of Gold Ore raised and treated, and Gold produced therefrom, per man employed on the several Goldfields of the State, during 1911 and 1912.

Goldfield.	1911.				1912.			
	Tons of Gold Ore raised and treated.		Fine Ounces of Gold produced therefrom.		Tons of Gold Ore raised and treated.		Fine Ounces of Gold produced therefrom.	
	Per man employed under ground.	Per man employed above and under ground.	Per man employed under ground.	Per man employed above and under ground.	Per man employed under ground.	Per man employed above and under ground.	Per man employed under ground.	Per man employed above and under ground.
	tons.	tons.	fine ozs.	fine ozs.	tons.	tons.	fine ozs.	fine ozs.
1. Kimberley	..	...	...	...	...	...	...	...
2. Pilbara	60·68	29·56	67·38	32·83	**89·94**	**43·87**	**130·48**	**63·64**
3. West Pilbara	59·21	24·38	115·41	47·52	**39·95**	**9·99**	**340·14**	**85·03**
4. Ashburton	...	...	...	...	...	...	...	...
5. Gascoyne	...	...	...	...	...	...	...	...
6. Peak Hill	...	...	...	...	**44·23**	**25·00**	**112·85**	**63·79**
7. East Murchison	254·25	142·99	129·23	72·68	**304·50**	**168·18**	**159·65**	**88·18**
8. Murchison	163·73	78·28	89·33	42·81	**173·70**	**75·40**	**102·03**	**44·29**
9. Yalgoo	27·62	12·80	33·05	15·32	**171·95**	**85·98**	**103·62**	**51·81**
10. Mt. Margaret	367·58	220·29	178·46	106·95	**319·59**	**194·41**	**150·48**	**91·54**
11. North Coolgardie	141·52	83·68	93·42	55·24	**147·67**	**84·03**	**107·55**	**61·20**
12. Broad Arrow	47·61	30·03	35·93	22·66	**241·26**	**131·70**	**114·24**	**62·36**
13. North-East Coolgardie ...	295·45	171·49	108·25	62·83	**226·17**	**121·92**	**84·76**	**45·69**
14. East Coolgardie	519·87	299·57	233·46	134·53	**533·84**	**321·18**	**228·52**	**137·48**
15. Coolgardie	156·98	94·48	83·53	50·27	**162·98**	**100·05**	**111·37**	**68·37**
16. Yilgarn	83·25	41·26	82·29	40·78	**306·27**	**146·99**	**128·17**	**61·51**
17. Dundas	218·60	129·38	164·74	97·50	**332·00**	**199·20**	**154·17**	**92·50**
18. Phillips River	110·08	60·21	87·92	38·09	**126·94**	**72·38**	**63·55**	**36·23**
Total Averages ...	331·16	184·94	160·50	89·64	**365·14**	**203·64**	**170·37**	**95·01**

The average value of gold produced per man employed above and below ground was £380·77 in 1911 and £403·58 in 1912. The average tonnage of ore raised shows an increase from 184·94 tons to 203·64 tons. The average tonnage raised per man is again highest in the East Coolgardie Field, viz., 321·18 tons, average value £583·98, the next being the Dundas Field, with 199·20 tons, average value £392·92.

TABLE 8.

Output of Gold from the several States of Australia, the Northern Territory, the Territory of Papua, and the Dominion of New Zealand during 1912.

State.	Output of Gold.	Value.	Percentage of total Output of Australasia.
	Fine ozs.	£	
1. Western Australia	**1,282,658**	**5,448,385**	48·36
2. Victoria	**480,131**	**2,039,464**	18·10
3. Queensland	**347,946**	**1,477,979**	13·12
4. New South Wales	**165,295**	**702,129**	6·23
5. Tasmania	**37,973**	**161,300**	1·43
6. South Australia	**6,592**	**28,000**	·25
7. Northern Territory	**5,337**	**22,671**	·20
8. Territory of Papua (estimated)	**15,233**	**64,705**	·58
9. New Zealand	**310,962**	**1,320,884**	11·73
Total	**2,652,127**	**11,265,517**	100·00

TABLE 9.

Dividends paid by Western Australian Gold Mining Companies during 1912 and Total to date.

(Compiled from information supplied by the Government Statistician's Office and the Chamber of Mines of W.A., Kalgoorlie.)

Goldfield.	Name of Company.	Capital.				Dividends.		
		Authorised.	No. of Shares issued.	Par Value of Shares.	Paid up to.	Paid in 1912. No.	Paid in 1912. Total Amount.	Grand Total paid to end of 1912.
		£		£ s. d.	£ s. d.		£	£
Peak Hill	Various Companies	...	...	...	...	...	...	160,666
East Murchison	Black Range G.M. Co., N.L.	80,000	72,500	1 0 0	1 0 0	12	29,001	232,843
Do.	Youanmi Gold Mines, Ltd.	350,000	350,000	1 0 0	1 0 0	1	17,500	17,500
Do.	Other Companies	...	...	...	...	...	...	133,000
Murchison	Various Companies	...	...	...	...	...	...	1,814,670
Mt. Margaret	Sons of Gwalia, Ltd.	350,000	325,000	1 0 0	1 0 0	4	69,062	827,863
Do.	Other Companies	...	...	...	...	...	...	362,095
North Coolgardie	Sand Queen G.Ms., Ltd.	15,000	60,000	0 5 0	0 5 0	6	9,000	12,000
Do.	Other Companies	...	...	...	...	...	...	440,131
North-East Coolgardie ...	Various Companies	...	...	...	...	...	...	82,971
East Coolgardie	Golden Ridge G.M. Co., N.L.	50,000	92,705	0 10 0	0 10 0	4	20,858	137,891
Do.	Great Boulder Proprietary G.Ms., Ltd.	175,000	1,750,000	0 2 0	0 2 0	4	262,500	3,956,800
Do.	Ivanhoe Gold Corporation, Ltd.	1,000,000	200,000	5 0 0	5 0 0	4	210,000	3,018,750
Do.	Kalgurli G.Ms., Ltd.	120,000	120,000	1 0 0	1 0 0	4	96,000	1,276,500
Do.	Lake View and Star, Ltd.	200,000	1,000,000	0 4 0	0 4 0	3	32,000	32,000
Do.	Oroya Links, Ltd.	312,500	1,150,000	0 5 0	0 5 0	2	28,750	43,125
Do.	South Kalgurli G.Ms., Ltd.	200,000	200,000	1 0 0	1 0 0	2	15,000	140,000
Do.	Other Companies	...	...	...	...	...	...	9,687,740
Coolgardie	Burbanks Main Lode (1904), Ltd.	40,000	176,335	0 4 0	0 4 0	2	4,585	14,891
Do.	Other Companies	...	...	...	...	...	...	323,001
Yilgarn	Various Companies...	...	...	...	...	...	...	51,078
Dundas	Mararoa G.M. Co., N.L.	40,000	100,000	0 8 0	0 3 0	4	20,000	80,000
Do.	Other Companies	...	...	...	...	...	...	147,000
	Total Dividends paid during 1912	...	...	...	...	...	£814,256	...
	Total Dividends paid to end of 1912	...	...	...	...	...	...	£22,992,515

NOTE: In this Table in the Report for last year (1911) the dividends from the Golden Dream G.M. Co., N.L., should have been given as £900 instead of £300. The total for that year should therefore have read £826,976, and the total to the end of that year £22,178,259.

Table 10.

Value of Gold Production and Percentage of Dividends paid.

Year.	Value of Gold Production.	Dividends paid by Gold Mining Companies.	Dividends % of Total Production.	Value of Gold Production by Gold Mining Companies only.	Dividends % upon Production by Gold Mining Companies.
	£	£	%	£	%
Prior to 1902 ...	29,722,650	6,076,857	20·5		
1902	7,947,661	1,424,272	18·0		
1903	8,770,719	2,024,152	23·1		
1904	8,424,226	*2,051,798	24·3		
1905	8,305,654	*2,167,640	26·1		
1906	7,622,749	*1,993,657	26·1		
1907	7,210,749	*1,738,123	24·1	5,722,273	30·4
1908	6,999,882	*1,487,303	21·2	5,503,784	27·0
1909	6,776,274	*1,359,088	20·0	5,398,725	25·2
1910	6,246,848	1,028,393	16·5	4,815,541	21·4
1911	5,823,075	*826,976	14·2	4,628,666	17·9
1912	5,448,385	814,256	14·9	4,304,161	18·9
Total ...	109,298,872	22,992,515	21·0	†30,373,150	†23·9

* Corrected from previous report. † Six last years only.

Table 11.

Quantity and Value of Minerals, other than Gold and Coal, reported to the Mines Department during 1912.

Goldfield, District, or Mineral Field.	1912.		Increase or Decrease for Year compared with 1911.	
	Quantity.	Value.	Quantity.	Value.
	tons.	£	tons.	£
BLACK TIN.				
Pilbara Goldfield (Marble Bar District) ...	123·38	14,993	− 25·27	− 1,071
Greenbushes Mineral Field	430·45	50,166	+ 19·33	+ 5,528
Total	553·83	65,159	− 5·94	+ 4,457
PYRITIC ORE.				
Mt. Margaret Goldfield (Mt. Morgans District)	7,625·80	2,543	− 2,313·12	− 1,016
COPPER ORE.				
Pilbara Goldfield (Marble Bar District) ...	...	...	− 25·10	− 196
Pilbara Goldfield (Nullagine District)	...	...	− 5·00	− 120
West Pilbara Goldfield	12,284·02	104,289	+ 3,202·00	+ 35,149
Phillips River Goldfield	1,318·38	15,815	− 12,245·30	− 31,047
Murchison Goldfield (Day Dawn District) ...	4·80	54	+ 4·80	+ 54
Total	13,607·20	120,158	− 9,068·60	+ 3,840
LEAD ORE.				
Northampton Mineral Field	11,098·50	24,412	+ 2,903·74	+ 6,749
WOLFRAM ORE.				
State generally	...	...	− 194·00	− 877

The output of black tin shows a decrease in tonnage of 5.94 tons, but an increase in value of £4,457; and pyritic ore, a decrease in tonnage of 2313.12 tons, and in value of £1,016. Lead ore shows an increase in tonnage of 2,903.74 tons and in value of £6,749. No wolfram was raised. Copper shows a decrease in tonnage of 9,068.60 and an increase in value of £3,840.

The production of tin was confined to the Greenbushes and Pilbara fields, and of copper to the Murchison, West Pilbara, and Phillips River fields, the cessation of operations in the latter accounting for the deecreased output. £24,412 worth of lead ore was raised in the Northampton field. It will be noted that the figures in this table differ from those in Table 1. The figures above are those reported to the Department, and the table is published as an index to the amount of mining in each field named.

TABLE 12.

Quantity of Coal raised during 1911 and 1912, and estimated Value thereof, with Number of Men employed, and Output per Man.

Coalfield.	Year.	Quantity Raised.	Estimated Value.	Men Employed.		Quantity Raised.	
				Above ground.	Under ground.	Per Man employed under ground.	Per Man employed above and under ground.
		tons.	£			tons.	tons.
Collie	1911	249,899	111,154	123	340	735	539
	1912	**295,079**	**135,857**	**126**	**416**	**709**	**544**

The number of men employed at Collieries has increased by 79, and the output by 45,180 tons.

PART III.—LEASES AND OTHER HOLDINGS UNDER THE VARIOUS ACTS RELATING TO MINING.

TABLE 13.

Total Number and Acreage of Leases held for Mining on 31st December, 1911 and 1912.

Description of Leases.	1911.		1912.	
	No.	Acreage.	No.	Acreage.
Gold mining leases on Crown land	2,198	34,213	**1,635**	**24,237**
„ „ „ private property ...	1	6	**1**	**6**
Mineral leases on Crown land	252	31,029	**300**	**32,339**
„ „ private property	1	20	**1**	**20**
	2,452	65,268	**1,937**	**56,602**

The total number of leases held for mining has decreased by 515 as compared with 1911, and the acreage by 8,666 acres. Leases for gold mining have decreased in number by 563 and in area by 9,976 acres.

The acreage held under mineral leases has increased by 1,310 acres, and the number of leases by 48.

TABLE 14.

Number and Acreage of Gold Mining Leases in force each year for the Five Years ending the 31st December, 1912.

GOLDFIELDS.		DISTRICTS.		1908.		1909.		1910.		1911.		1912.		Percentage of Total Acreage.		Increase or Decrease for 1912 compared with 1911.		GOLDFIELDS.
Name.	Proclaimed.	Name.	Proclaimed.	Leases.	Acreage.	Leases.	Acreage.	Leases.	Acreage.	Leases.	Acreage.	Leases.	Acreage.	1911.	1912.	Increase.	Decrease.	
																acres.	acres.	
Kimberley ...	20-5-86	... ...	...	2	13	...	...	...	...	...	...	...	...	...	...	...	...	Kimberley
Yilgarn	1-10-08	... ...	...	60	1,011	101	1,562	472	9,118	509	10,136	196	3,659	29·62	15·09	...	6,477	Yilgarn
Pilbara	1-10-88	Marble Bar ...	6-11-96	14	180	35	426	21	260	26	277	34	425	1·16	2·31	161	...	Pilbara
		Nullagine ...	6-11-96	24	265	22	252	16	140	14	122	14	135					
Ashburton ...	11-12-90	... ...	...	1	6	3	48	3	48	2	30	...	...	·09	...	...	30	Ashburton
Murchison ...	24-9-91	Cue	10-1-96	99	1,152	99	1,089	71	756	56	605	48	629	11·35	12·54	...	845	Murchison
		Nannine ...	7-12-94	126	1,491	177	2,288	205	2,670	177	2,350	117	1,497					
		Day Dawn ...	10-1-96	65	639	58	541	49	474	49	445	48	453					
		Mount Magnet ...	7-12-94	47	444	59	622	51	618	42	485	44	461					
Dundas	31-8-93	... ...	...	78	1,038	74	997	71	872	70	862	56	674	2·52	2·78	...	188	Dundas
Coolgardie ...	6-4-94	Coolgardie ...	1-9-97	136	1,760	115	1,525	100	1,372	68	889	57	733	3·95	4·52	...	254	Coolgardie
		Kunanalling ...	1-9-97	42	521	35	436	37	488	31	462	26	364					
East Coolgardie ...	21-9-94	East Coolgardie	21-9-94	208	2,994	209	2,948	200	2,868	179	2,596	171	2,417	8·01	10·42	...	215	East Coolgardie
		Bulong	13-11-96	23	287	19	245	11	45	10	145	7	109					
Yalgoo	23-1-95	... ...	...	39	467	44	494	38	425	39	500	60	803	1·46	3·31	303	...	Yalgoo
North Coolgardie	28-6-95	Menzies	20-3-96	79	1,055	78	1,115	76	1,053	64	897	54	759	7·57	8·23	...	598	North Coolgardie
		Ularring ...	23-9-96	58	759	65	815	55	720	42	562	33	412					
		Yerilla	20-3-96	62	965	55	784	46	669	40	573	34	489					
		Niagara	12-3-97	55	721	70	960	46	580	47	560	24	334					
East Murchison ...	28-6-95	Lawlers	1-7-04	137	2,085	183	2,756	86	1,107	61	914	32	433	11·29	12·97	...	720	East Murchison
		Black Range ...	1-7-04	151	2,152	157	2,397	151	2,282	127	1,923	109	1,598					
		Wiluna	1-3-10	...	...	...	...	70	1,181	61	1,027	67	1,113					
North-East Coolgardie	20-3-96	Kanowna ...	13-11-96	77	885	74	908	58	682	44	555	57	908	1·70	8·14	1,391	...	N.E. Coolgardie
		Kurnalpi ...	13-11-96	6	60	5	48	2	18	4	27	62	1,065					
Broad Arrow ...	17-11-96	... ...	...	57	683	71	939	63	803	117	1,912	57	904	5·59	3·73	...	1,008	Broad Arrow
Peak Hill ...	19-3-97	... ...	...	42	352	46	402	52	552	50	559	20	279	1·63	1·15	...	280	Peak Hill
Mount Margaret...	12-3-97	Mount Margaret	12-3-97	85	1,407	75	1,307	72	1,197	71	1,248	70	1,170	12·61	13·13	...	1,130	Mount Margaret
		Mount Malcolm	12-3-97	113	2,036	113	2,030	126	2,314	131	2,415	89	1,657					
		Mount Morgans	2-4-02	49	754	35	593	47	815	34	650	21	356					
West Pilbara ...	20-9-95	Crown Lands ...	...	12	156	10	128	7	72	7	78	9	108	·23	·45	30	...	West Pilbara
Do.	...	Private Property	...	1	24	...	...	1	6	1	6	1	6	·02	·02	...	...	Do.
Phillips River ...	21-9-00	... ...	...	24	303	17	240	15	237	26	409	17	257	1·20	1·06	...	152	Phillips River
Other Localities ...	...	... ...	...	1	24	1	24	...	...	...	...	...	...	...	...	...	...	Other Localities
Murray	...	Private Property	...	6	118	...	...	...	...	...	...	...	...	...	...	...	...	
Gascoyne	...	... .	...	...	...	...	...	...	...	...	...	2	36	...	·15	36	...	
		Totals ...	...	1,979	26,807	2,105	28,919	2,318	34,544	2,199	34,219	1,636	24,243	100·00	100·00	...	9,976	

Decrease for 1912: 563 leases, 9,976 acres.

Taking all the goldfields, the largest percentage of the area leased for gold mining is in the Yilgarn Goldfield, viz., 15·09; then Mt. Margaret, East Murchison, Murchison, East Coolgardie, and North Coolgardie, with percentages of 13·13, 12·97, 12·54, 10·42, and 8·23 respectively.

TABLE 15.

Number and Acreage of Mineral Leases in force 31st December each year, for the Five Years ending 31st December, 1912.

MINING DISTRICTS.		SUB-DISTRICTS.		1908.		1909.		1910.		1911.		1912.		Increase or Decrease for 1912, compared with 1911.		DISTRICTS.
Name.	Proclaimed.	Name.	Proclaimed.	Leases.	Acreage.	Leases.	Acreage.	Leases.	Acreage.	Leases.	Acreage.	Leases.	Acreage.	Increase.	Decrease.	
														acres.	acres.	
Ashburton ...	11-12-90	...	...	12	383	5	131	5	131	4	83	**4**	**83**	...	...	Ashburton
Murchison ...	24-9-91	Cue ...	7-12-94	...	...	1	3	...	...	...	...	**21**	**615**	615	...	Cue
		Nannine ...	7-12-94	4	126	2	30	1	12	...	...	**1**	**12**	12	...	Nannine
		Day Dawn ...	10-1-96	1	6	1	6	1	6	1	6	**1**	**6**	...	...	Day Dawn
		Mt. Magnet ...	7-12-94	...	...	1	5	...	...	...	...	...	...	...	...	Mt. Magnet
Greenbushes ...	7-4-92	...	...	60	989	47	727	49	753	51	751	**58**	**859**	108	...	Greenbushes
Pilbara	16-6-92	Marble Bar ...	16-6-92	34	1,114	36	1,142	16	567	31	868	**37**	**1,033**	165	...	Marble Bar
		Nullagine ...	6-11-96	1	48	1	48	1	48	1	18	**1**	**3**	...	15	Nullagine
Yalgoo	23-1-95	...	...	3	96	2	72	1	48	1	48	**1**	**24**	...	24	Yalgoo
Yilgarn	22-3-95	...	...	...	...	2	96	2	96	...	...	**2**	**23**	23	...	Yilgarn
Coolgardie ...	22-3-95	Coolgardie ...	22-3-95	2	21	2	21	2	21	...	...	...	...	...	...	Coolgardie
		Kunanalling ...	1-9-97	...	...	...	...	...	...	...	...	...	...	...	...	Kunanalling
East Coolgardie ...	22-3-95	East Coolgardie	22-3-95	7	49	6	50	7	33	9	45	**8**	**40**	...	5	East Coolgardie
		Bulong ...	15-4-96	...	...	...	...	...	...	...	...	...	...	...	...	Bulong
East Murchison ...	28-6-95	Lawlers ...	1-7-04	5	132	10	260	5	104	4	96	**4**	**96**	...	...	East Murchison
		Black Range ...	1-7-04	2	4	2	4	2	6	2	6	**4**	**24**	18	...	Black Range
		Wiluna ...	1-3-10	...	...	...	...	1	10	...	...	...	...	...	...	Wiluna
North Coolgardie	16-8-95	Menzies ...	15-4-96	1	48	1	48	...	...	...	...	...	...	...	...	Menzies
		Ularring ...	15-4-96	...	...	...	...	...	...	...	...	...	...	...	...	Ularring
		Yerilla ...	15-4-96	...	...	...	...	...	...	...	...	...	...	...	...	Yerilla
		Niagara ...	1-3-97	...	...	...	...	...	...	...	...	...	...	...	...	Niagara
West Pilbara ...	1-11-95	...	...	22	683	17	666	20	668	14	537	**16**	**552**	15	...	West Pilbara
Dundas	27-12-95	...	...	1	6	1	6	1	6	...	...	**1**	**48**	48	...	Dundas
Collie	21-2-96	...	...	80	24,815	79	24,495	88	27,255	88	27,125	**88**	**27,126**	...	...	Collie
North-East Coolgardie	15-4-96	Kanowna ...	15-4-96	...	...	...	...	...	...	...	...	...	...	...	...	Kanowna
		Kurnalpi ...	15-4-96	...	...	...	...	...	...	...	...	...	...	...	...	Kurnalpi
Broad Arrow ...	20-11-96	...	...	1	20	1	20	1	20	...	...	**1**	**20**	20	...	Broad Arrow
Northampton ...	1-1-97	Crown Lands...	...	11	247	4	60	1	10	1	10	**1**	**10**	...	...	Northampton
		Private Property	...	1	20	1	20	...	...	1	20	**1**	**20**	...	...	
Peak Hill ...	1-4-97	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Peak Hill
Mt. Margaret ...	1-4-97	Mt. Margaret...	1-4-97	1	48	1	48	...	...	...	...	...	...	...	...	Mt. Margaret
		Mt. Malcolm ...	1-4-97	3	12	1	6	...	...	...	...	...	...	...	...	Mt. Malcolm
		Mt. Morgans ...	2-4-02	6	139	5	129	5	129	6	134	**6**	**134**	...	...	Mt. Morgans
Gascoyne	15-4-97	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Gascoyne
Yandanooka ...	1-12-97	Crown Lands...	...	...	...	2	40	2	40	2	40	**2**	**40**	...	...	Yandanooka
		Private Property	...	2	50	2	50	2	50	...	...	...	...	...	...	
Phillips River ...	1-7-99	...	...	42	1,047	46	1,283	30	782	22	613	**21**	**607**	...	6	Phillips River
Other localities ...	...	Crown Lands ...	...	27	1,230	21	860	18	772	15	648	**22**	**984**	336	...	Other Localities
		Private Property	...	...	...	...	...	...	...	...	...	...	...	...	...	
Totals ...	...	...	...	329	31,333	300	30,326	261	31,567	253	31,049	**301**	**32,359**	1310	...	

Increase for 1912: 48 leases, 1,310 acres.

In the Collie field the largest area is held, viz., 27,126 acres occupied entirely for coal mining, then follow: Pilbara with 1,033 acres, principally for tin and copper, then outside localities 984 acres, Greenbushes 859 acres, Cue 615 acres, and Phillips River 607 acres.

TABLE 16.

Number and Acreage of Mineral Leases in force on 31st December, 1912, showing Minerals for which they are worked.

Goldfield or Mineral Field.	District.	Minerals.																	
		Coal.		Tin.		Copper.		Iron.		Clay.		Limestone.		Asbestos.		Silver and Lead.		Scheelite.	
		Leases.	Acres.	Leases.	Acres.	Leases.	Acres.	Leases.	Acres.	Leases.	Acres.	Leases.	Acres.	Leases.	Acres.	Leases.	Acres.	Leases.	Acres.
Pilbara	Marble Bar	..	..	25	621	6	256	..	..	..	..	..	..	2	96	..	..	2	40
	Nullagine	..	..	..	..	1	3	..	..	..	..	..	..	..	..	..	..	..	..
West Pilbara	..	..	..	..	..	16	552	..	..	..	..	..	..	..	..	..	..	..	..
Ashburton	..	..	..	..	..	1	48	..	..	..	..	..	..	..	..	3	35	..	..
East Murchison	Lawlers	..	..	..	..	4	96	..	..	..	..	..	..	..	..	..	..	..	..
	Black Range	..	..	..	..	..	..	..	..	2	6	2	18	..	..	..	..	..	..
Murchison	Cue	..	..	20	591	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Nannine	..	..	..	..	1	12	..	..	..	..	..	..	..	..	..	..	..	..
	Day Dawn	..	..	..	..	..	..	..	..	1	6	..	..	..	..	..	..	..	..
Yalgoo	..	..	..	..	..	1	24	..	..	..	..	..	..	..	..	..	..	..	..
Mt. Margaret	Mt. Morgans	..	..	..	..	4	114	..	..	..	..	1	5	..	..	..	..	..	..
Broad Arrow	..	..	..	..	..	1	20	..	..	..	..	..	..	..	..	..	..	..	..
East Coolgardie	East Coolgardie	..	..	..	..	..	..	..	..	5	23	..	..	..	..	..	..	..	..
Yilgarn	..	..	..	..	..	..	..	..	..	1	11	1	12	..	..	..	..	..	..
Dundas	..	..	..	..	..	1	48	..	..	..	..	..	..	..	..	..	..	..	..
Phillips River	..	..	..	..	..	20	567	..	..	..	..	1	40	..	..	..	..	..	..
Collie	..	..	..	88	27,126	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Greenbushes	..	..	..	..	..	58	859	..	..	..	..	..	..	..	..	..	..	..	..
Northampton	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Northampton	..	(Private Property)		..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Yandanooka	..	..	..	..	..	2	40	..	..	..	..	..	..	..	..	..	..	..	..
Outside Proclaimed Fields	..	..	..	..	..	7	312	13	584	..	..	..	..	..	..	..	..	..	..
Totals	..	88	27,126	103	2,071	65	2,092	13	584	9	46	5	75	2	96	3	35	2	40

Table 16.

Number and Acreage of Mineral Leases, etc.—continued.

Goldfield or Mineral Field.	District.	Minerals.																Total No. of Leases.	Total Acreage.
		Tantalite.		Wolfram.		Graphite.		Lead.		Copper and Silver.		Opal.		Building Stone.		Gravel.			
		Leases.	Acres.	Leases.	Acres.	Leases.	Acres.	Leases.	Acres.	Leases.	Acres.	Leases.	Acres.	Leases.	Acres.	Leases.	Acres.	Leases.	
Pilbara	Marble Bar ..	2	20	..	..	..	..	..	..	..	..	..	..	..	..	..	..	37	1,033
	Nullagine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	3
West Pilbara ..	.. .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	16	552
Ashburton	.. .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	83
East Murchison ..	Lawlers	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	96
	Black Range ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	24
Murchison	Cue	..	..	..	..	..	..	..	..	..	..	1	24	..	..	..	..	21	615
	Nannine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	12
	Day Dawn ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	6
Yalgoo	.. .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	24
Mt. Margaret	Mt. Morgans ..	..	..	..	..	..	..	..	..	1	15	..	..	..	..	..	..	6	134
Broad Arrow	.. .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	20
East Coolgardie ..	East Coolgardie ..	..	..	..	..	..	..	..	..	..	..	..	..	2	11	1	6	8	40
Yilgarn	.. .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	23
Dundas	.. .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	48
Phillips River	.. .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	21	607
Collie	.. .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	88	27,126
Greenbushes	.. .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	58	859
Northampton	.. .. ..	..	..	..	..	..	..	1	10	..	..	..	..	..	..	..	..	1	10
Northampton	(Private Property)	..	..	..	..	..	..	1	20	..	..	..	..	..	..	..	..	1	20
Yandanooka	.. .. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	40
Outside Proclaimed Fields	.. ..	..	..	1	48	1	40	..	..	..	..	..	..	..	..	..	..	22	984
	Totals	2	20	1	48	1	40	2	30	1	15	1	24	2	11	1	6	301	32,359

TABLE 17.

Number and Acreage of Miscellaneous Leases in force 31st December, 1912.

Goldfield.	District.	Leases.												Total.	
		Tailings.		Tramway.		Water.		Machinery.		Residence.		Dredging.			
		No.	Acres.	No.	Acres.	No.	Acres.	No.	Acres.	No.	Acres.	No.	Acres.	No.	Acres.
West Pilbara	.. .. ..	..	..	1	24	..	..	..	..	..	..	..	..	1	24
East Murchison	Lawlers	..	..	3	21	..	..	..	..	..	..	..	..	3	21
Murchison	Day Dawn ..	..	..	..	..	..	..	..	..	1	1	..	..	1	1
Mt. Margaret	Mt. Margaret ..	1	22	..	..	..	..	..	..	..	..	..	..	1	22
North Coolgardie	Menzies	..	..	..	..	1	5	..	..	..	..	1	30	2	35
N. E. Coolgardie	Kanowna	..	..	1	2	..	..	..	..	..	..	..		1	2
East Coolgardie	East Coolgardie ..	15	310	..	..	2	47	4	51	1	2	..	..	22	410
Coolgardie	Coolgardie	..	..	..	..	1	13	..	..	..	..	..	..	1	13
Phillips River	.. .. ..	..	..	3	7	..	..	..	..	..	..	..	..	3	7
	Total ..	16	332	8	54	4	65	4	51	2	3	1	30	35	535

TABLE 18.

Claims and Authorised Holdings under "The Mining Act, 1904," and Regulations existing on 31st December, 1911, and 1912.

GOLDFIELD OR MINERAL FIELD.	DISTRICT.	Prospecting Areas.				Water Rights.				Lode Claims.		Alluvial Claims.	
		Number.		Acreage.		Number.		Acreage.					
		1911.	1912.	1911.	1912.	1911.	1912.	1911.	1912.	1911.	1912.	1911.	1912.
Northampton	..	..	3	..	18	..	..	..	..	..	..	..	..
Pilbara	Marble Bar	21	15	306	239	2	1	2	1	4	5	..	..
Do.	Nullagine	3	3	54	57	3	3	5	5	14	10	..	..
West Pilbara	..	5	7	45	84	1	1	5	5	..	..	..	..
Ashburton	..	..	1	..	18	..	..	..	..	..	..	..	..
Peak Hill	..	10	24	135	345	8	8	69	58	..	..	..	..
East Murchison	Lawlers	11	15	171	189	22	21	33	30	..	..	..	..
Do.	Wiluna	20	16	297	271	6	9	10	22	..	..	..	..
Do.	Black Range	26	19	410	293	3	4	7	8	..	..	..	..
Murchison	Cue	15	25	231	384	3	2	9	4	5	2	..	..
Do.	Nannine	33	30	490	326	1	2	1	6	..	..	..	..
Do.	Day Dawn	8	8	106	104	15	14	25	23	..	..	..	..
Do.	Mt. Magnet	20	27	264	308	2	2	2	2	8	..	..	..
Yalgoo	..	8	6	129	108	..	1	..	1	..	..	..	..
Mt. Margaret	Mt. Morgans	4	4	55	63	24	17	97	47	..	..	..	..
Do.	Mt. Malcolm	44	30	688	471	38	38	221	215	4	..	..	..
Do.	Mt. Margaret	33	24	494	324	23	22	67	59	..	..	..	4
North Coolgardie	Menzies	42	53	581	777	12	9	38	30	1	..	..	..
Do.	Ularring	16	17	202	215	7	7	18	20	..	..	..	..
Do.	Niagara	14	9	204	114	18	2	50	4	1	..	..	..
Do.	Yerilla	30	34	430	497	7	1	9	1	1	..	1	..
Broad Arrow	..	33	40	523	582	11	8	33	27	13	..	..	..
N.E. Coolgardie	Kanowna	17	12	203	170	5	5	30	11	8	7	2	4
Do.	Kurnalpi	4	21	36	582	..	..	..	..	..	1	..	..
East Coolgardie	East Coolgardie	54	33	717	459	11	11	37	37	5	3	3	4
Do.	Bulong	7	15	107	227	1	1	12	12	5	6	..	..
Coolgardie	Coolgardie	62	58	831	804	12	10	48	35	1	2	..	..
Do.	Kunanalling	25	11	389	155	8	8	46	46	1	..	..	..
Yilgarn	..	71	48	1,173	760	3	3	20	6	1	..	..	..
Dundas	..	12	17	165	231	12	11	30	29	2	..	3	..
Phillips River	..	28	14	432	249	7	4	32	9	1	..	..	..
Collie	..	2	5	4,100	10,780	..	..	..	..	..	..	..	..
Greenbushes	..	1	5	18	90	10	12	52	72	..	..	21	23
Outside Proclaimed Fields	..	18	12	34,532	18,770	..	..	..	..	..	..	..	..
Totals	..	697	661	*48,528	*39,064	275	237	1,008	825	75	36	30	35
Increase or Decrease for 1912, compared with 1911	..	−36		—9,444		—38		—183		—39		+ 5	

GOLDFIELD OR MINERAL FIELD.	DISTRICT.	Dredging Claims.		Residence Areas.		Business Areas.		Machinery Areas.		Tailings Areas.		Garden Areas.		Washing Areas.	
		1911.	1912.	1911.	1912.	1911.	1912.	1911.	1912.	1911.	1912.	1911.	1912.	1911.	1912.
Northampton	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pilbara	Marble Bar	2	..	4	4	14	13	..	1	1	1	5	5	..	..
Do.	Nullagine	1	1	5	4	5	3	3	1	2	1	5	5	..	..
West Pilbara	..	..	..	12	16	9	13	..	1	..	..	3	3	..	..
Ashburton	..	..	..	..	..	2	1	..	..	..	..	..	..	..	..
Peak Hill	..	..	..	6	18	2	6	..	3	..	1	..	1	..	..
East Murchison	Lawlers	..	..	8	2	2	2	2	3	2	..	6	3	..	..
Do.	Wiluna	..	..	..	1	1	1	1	1	..	..	5	5	..	..
Do.	Black Range	..	..	208	213	23	11	2	2	1	1	14	11	..	..
Murchison	Cue	..	..	21	9	6	4	1	1	3	3	2	2	..	..
Do.	Nannine	..	..	17	13	11	8	1	1	4	6	2	2	..	..
Do.	Day Dawn	..	..	41	32	..	..	..	..	..	..	6	5	..	..
Do.	Mt. Magnet	..	..	8	4	8	3	1	..	3	2	9	7	..	..
Yalgoo	..	..	..	11	7	27	21	2	2	3	2	4	2	..	..
Mt. Margaret	Mt. Morgans	..	..	1	1	4	2	..	..	..	..	3	2	..	..
Do.	Mt. Malcolm	..	..	2	2	6	4	1	..	3	3	16	15	..	..
Do.	Mt. Margaret	..	..	8	4	20	16	4	4	5	..	10	8	..	..
North Coolgardie	Menzies	..	..	2	2	18	20	2	1	4	4	8	7	..	..
Do.	Ularring	..	..	..	..	2	2	..	1	..	..	1	1	..	..
Do.	Niagara	..	..	2	..	2	1	2	..	..	1	7	..	..	..
Do.	Yerilla	..	..	2	..	6	..	2	..	1	..	..	..	..	..
Broad Arrow	..	..	..	..	..	18	16	5	5	4	3	..	..	..	..
N.E. Coolgardie	Kanowna	..	..	4	1	3	4	5	3	3	2	3	3	..	..
Do.	Kurnalpi	..	..	..	..	1	1	2	2	..	..	..	..	..	..
East Coolgardie	East Coolgardie	..	..	28	28	10	10	5	5	8	6	27	25	..	..
Do.	Bulong	..	..	..	..	..	..	2	2	..	..	..	..	..	..
Coolgardie	Coolgardie	..	..	2	2	5	4	3	3	2	4	5	4	..	..
Do.	Kunanalling	..	..	1	1	6	5	2	2	..	..	..	..	..	..
Yilgarn	..	..	..	64	36	38	20	2	2	4	4	3	3	..	..
Dundas	..	..	..	..	..	2	1	2	3	1	1	2	2	..	..
Phillips River	..	..	..	..	..	1	..	2	2	4	3	8	6	..	..
Collie	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Greenbushes	..	3	4	33	30	6	4	9	8	2	2	8	7	1	1
Outside Proclaimed Fields	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals	..	6	5	490	430	258	196	63	59	60	50	163	134	1	1
Increase or Decrease for 1912, compared with 1911	..	—1		— 60		—62		— 4		—10		—29		..	

* 1911 including 15 for coal and oil 38,500 acres. * 1912 including 12 for coal and oil 29,420 acres.

Last year the number of Prospecting Areas held was 697, the total acreage being 48,528 acres (which included 15 areas of an acreage of 38,500 for coal and iron). This year shows a decrease to 661, acreage 39,064 acres, including 12 areas of 29,420 acres for coal and oil.

TABLE 19.

Miners' Rights issued during 1911 and 1912.

Place of Issue.	Miners' Rights.		Place of Issue.	Miners' Rights.	
	1911.	1912.		1911.	1912.
Albany	7	9	Menzies	149	155
Ashburton	33	36	Mount Egerton	..	5
Boulder	35	29	Mount Magnet	284	202
Bridgetown	9	..	Mount Morgans	39	43
Broad Arrow	177	137	Mulline	..	20
Broome	1	8	Nannine	161	132
Bulong	10	2	Narrogin	9	7
Bullfinch	53	44	Norseman	117	92
Bunbury	13	5	Northampton	4	26
Burtville	18	11	Northam	17	1
Busselton	..	1	Nullagine	60	51
Carnarvon	17	30	Onslow	..	36
Collie	12	6	Payne's Find	..	26
Coolgardie	239	289	Peak Hill	68	105
Cue	226	200	Perth	276	151
Davyhurst	45	41	Pinjin	6	5
Derby	12	12	Port Hedland	11	10
Esperance	1	2	Ravensthorpe	162	85
Greenbushes	132	224	Roebourne	83	120
Hall's Creek	19	25	Sandstone	260	315
Kalgoorlie	497	445	Southern Cross	510	279
Kanowna	126	204	Wagin	4	1
Kookynie	103	125	Waverley	43	25
Lake Darlot	13	17	Wiluna	83	95
Laverton	142	185	Wodgina	..	19
Lawlers	80	83	Wyndham	1	1
Leonora	191	168	Yalgoo	56	68
Linden	39	36	Yarri	22	15
Marble Bar	153	166	York	73	2
Marvel Loch	..	45	Youanme	92	70
Meekatharra	163	147	Yundamindera	2	..
			Total	5,158	4,894

TABLE 20.

Number and Acreage of Miners' Homestead Leases in force on 31st December, 1911 and 1912.

Goldfield.	District.	1911.		1912.		Increase.		Decrease.	
		Leases.	Acreage.	Leases.	Acreage.	Leases.	Acreage.	Leases.	Acreage.
West Pilbara	...	1	30	1	30	...	...	...	...
Greenbushes	...	6	612	7	912	1	300	...	...
Pilbara	Marble Bar	5	67	6	77	1	10	...	...
	Nullagine	1	20	...	...	...	...	1	20
Dundas	...	25	1,318	23	1,274	...	...	2	44
Broad Arrow	...	3	280	2	30	...	...	1	250
Yilgarn	...	23	1,212	32	2,542	9	1,330	...	...
Mt. Margaret	Mt. Morgans	4	160	4	160	...	...	...	...
	Mt. Malcolm	7	1,264	7	1,264	...	...	...	...
	Mt. Margaret	13	424	15	644	2	220	...	...
Murchison	Cue	10	1,332	9	1,232	...	...	1	100
	Day Dawn	12	145	10	130	...	...	2	15
	Nannine	18	1,967	17	1,913	...	...	1	54
	Mt. Magnet	2	40	2	40	...	...	...	...
Yalgoo	...	2	220	1	200	...	...	1	20
Coolgardie	Coolgardie	44	5,135	40	3,915	...	...	4	1,220
	Kunanalling	2	520	2	520	...	...	...	...
East Coolgardie	...	118	4,365	107	4,210	...	...	11	155
Phillips River	...	140	16,526	150	21,556	10	5,030	...	...
Peak Hill	...	7	740	6	720	...	...	1	20
North-East Coolgardie	Kanowna	22	895	21	875	...	...	1	20
North Coolgardie	Menzies	9	395	10	405	1	10	...	...
	Yerilla	2	20	1	10	...	...	1	10
	Niagara	8	424	7	419	...	...	1	5
	Ularring	1	20	1	20	...	...	...	...
East Murchison	Lawlers	5	1,110	5	1,110	...	...	...	...
	Black Range	25	2,129	26	1,608	1	...	...	521
	Wiluna	5	89	5	89	...	..	...	...
	Total ...	520	41,459	517	45,905	...	4,446	3	...

As compared with the year 1911, there is a decrease in the number of leases by 3, and an increase in acreage by 4,446 acres.

Part IV.—MEN EMPLOYED.

Table 21.

Average Number of Men engaged in Mining during 1911 *and* 1912.

Goldfield.	District.	Reef or Lode.		Alluvial.		Total.	
		1911.	1912.	1911.	1912.	1911.	1912.
1. Kimberley	...	...	...	14	11	14	11
2. Pilbara	Marble Bar	64	82	41	32	105	114
	Nullagine	53	32	16	18	69	50
3. West Pilbara	...	17	12	14	4	31	16
4. Ashburton	...	...	...	23	11	23	11
5. Gascoyne	...	...	...	2	2	2	2
6. Peak Hill	...	39	23	21	8	60	31
7. East Murchison	Lawlers	354	123	20	8	374	131
	Wiluna	127	192	16	1	143	193
	Black Range	897	784	12	9	909	793
8. Murchison	Cue	191	175	10	10	201	185
	Nannine	1,889	1,561	78	38	1,967	1,599
	Day Dawn	416	382	15	18	431	400
	Mt. Magnet	244	211	2	5	246	216
9. Yalgoo	...	41	114	14	9	55	123
10. Mt. Margaret	Mt. Morgans	83	63	31	29	114	92
	Mt. Malcolm	796	699	12	18	808	717
	Mt. Margaret	536	346	6	55	542	401
11. North Coolgardie	Menzies	487	446	9	10	496	456
	Ularring	155	157	15	4	170	161
	Niagara	232	140	29	24	261	164
	Yerilla	293	206	32	30	325	236
12. Broad Arrow	...	298	207	74	60	372	267
13. North-East Coolgardie	Kanowna	269	231	21	18	290	249
	Kurnalpi	17	38	11	14	28	52
14. East Coolgardie	East Coolgardie	5,716	5,445	50	25	5,766	5,470
	Bulong	49	45	21	3	70	48
15. Coolgardie	Coolgardie	506	492	15	7	521	499
	Kunanalling	147	114	4	6	151	120
16. Yilgarn	...	458	498	...	5	458	503
17. Dundas	...	294	270	6	4	300	274
18. Phillips River	...	117	114	...	...	117	114
State generally	...	9	2	...	...	9	2
Total—Gold Mining	...	14,794	13,204	634	496	15,428	13,700
MINERALS OTHER THAN GOLD.							
Tin	Greenbushes	*157	*244	*69	*50	226	294
	Cue	*1	*14	...	*3	1	17
	Marble Bar	*24	*21	*70	*77	94	98
Copper	West Pilbara	141	186	...	...	141	186
	Yalgoo	...	...	...	...	...	...
	Phillips River	173	36	...	...	173	36
	Marble Bar	3	1	...	...	3	1
Pyritic Ore	Mt. Morgans	22	27	...	...	22	27
Lead	Northampton	43	60	...	...	43	60
Coal	Collie River	463	542	...	...	463	542
Wolfram	Cue	2	...	...	...	2	...
	State generally	...	...	...	...	...	...
	Total—Other Minerals	1,029	1,131	139	130	1,168	1,261
	Grand Total	15,823	14,335	773	626	16,596	14,961

* Classified elsewhere as employed at mines.

Comparing the years 1911 and 1912 there was a decrease of 1,635. This decrease is mostly attributable to gold mining, wherein the number of men engaged is less by 1,728 than in 1911; the number of men working reefs or lodes decreased by 1,590, and alluvial by 138. In mining for minerals, there was an increase of 102, due principally to tin and coal, the number of men increasing 88 in the former and 79 in the latter. Lead and pyritic ore also show increases of 17 and 5 respectively. Copper shows a decrease of 94 and wolfram decreased from 2 to *nil.*

TABLE 22.

Average Number of Men employed at Mines during 1912.

Mineral.	Above Ground.	Under Ground.	Total.	Percentage of total men employed.	Increase or decrease compared with 1911.
Coal	126	416	542	3·75	+ 79
Copper	128	95	223	1·54	− 94
Gold	5,840	7,364	13,204	91·28	− 1,590
Lead	20	40	60	·41	+ 17
Pyritic Ore	5	22	27	·19	+ 5
Tin	*382	27	409	2·83	+ 88
Wolfram	...	...	...	...	− 2
Total	6,501	7,964	14,465	100·00	− 1,497

*As the tin obtained is principally "stream tin," the average number of alluvial workers has been, in this case, included in the heading "Above ground."

NOTE.—Figures given in 1911 for Tin, "Above 158" and "Total 182," are incorrect and should read 297 and 321 respectively, making a decrease of five for that year instead of 144.

The comparison in 1912 Table is made against the correct figures and not those published.

The above table deals with men working their own mines, or employed on wages, and is compiled from returns furnished to the Department by mine-owners. The percentage employed shows increases in coal, lead, pyritic ore, and tin, but decreases in all others.

TABLE 23.

Average Number of Men employed at Gold Mines during 1912, classified according to the several Goldfields and the proportion of Men employed in each Goldfield.

Goldfield	Above Ground.	Under Ground.	Total.	Increase or Decrease compared with 1911.	Percentage of total men employed. 1911.	1912.
1. Kimberley	...	...	...	...	...	...
2. Pilbara	54	60	114	− 3	·79	·86
3. West Pilbara	9	3	12	− 5	·12	·09
4. Ashburton	...	...	...	...	...	...
5. Gascoyne	...	...	...	...	...	...
6. Peak Hill	10	13	23	− 16	·26	·17
7. East Murchison	492	607	1,099	− 279	9·31	8·32
8. Murchison	1,318	1,011	2,329	− 411	18·52	17·64
9. Yalgoo...	57	57	114	+ 73	·28	·86
10. Mt. Margaret	434	674	1,108	− 307	9·57	8·39
11. NorthCoolgardie	409	540	949	− 218	7·89	7·19
12. Broad Arrow	94	113	207	− 91	2·01	1·57
13. North-East Coolgardie ...	124	145	269	− 17	1·93	2·04
14. East Coolgardie	2,187	3,303	5,490	− 275	38·97	41·58
15. Coolgardie	234	372	606	− 47	4·41	4·59
16. Yilgarn	259	239	498	+ 40	3·10	3·77
17. Dundas	108	162	270	− 24	1·99	2·05
18. Phillips River	49	65	114	− 3	·79	·86
State generally	2	...	2	− 7	·06	·02
Total	5,840	7,364	13,204	− 1,590	100·00	100·00

The above table shows that the number of men employed in gold mines, excluding alluvial workers, decreased to the extent of 1,590. The largest decreases were in the Murchison, Mt. Margaret, East Murchison, North Coolgardie, and East Coolgardie fields, but the Yalgoo and Yilgarn fields show increases.

TABLE 24.

Alluvial Gold Workers.

Goldfield.	1911.	1912.	Increase or decrease compared with 1911.
1. Kimberley...	14	11	− 3
2. Pilbara	57	50	− 7
3. West Pilbara	14	4	− 10
4. Ashburton...	23	11	− 12
5. Gascoyne	2	2	...
6. Peak Hill	21	8	− 13
7. East Murchison	48	18	− 30
8. Murchison	105	71	− 34
9. Yalgoo	14	9	− 5
10. Mt. Margaret	49	102	+ 53
11. North Coolgardie...	85	68	− 17
12. Broad Arrow	74	60	− 14
13. North-East Coolgardie	32	32	...
14. East Coolgardie	71	28	− 43
15. Coolgardie...	19	13	− 6
16. Yilgarn	...	5	+ 5
17. Dundas	6	4	− 2
18. Phillips River	...	...	...
Total	634	496	− 138

The number of alluvial gold workers decreased by 138, the largest decreases being in the East Coolgardie, Murchison, East Murchison, and North Coolgardie fields. Mount Margaret shows an increase of 53. Mount Morgans with 102 heads the list; followed by Murchison with 71, North Coolgardie with 68, Broad Arrow with 60, and Pilbara with 50.

Table 25.

Rates of Wages in the Gold Mining Industry.

Table showing Wages payable to Mining Employees under various Arbitration Awards and Industrial Agreements.

Locality in which Award or Agreement has effect.	Date of Award or Agreement.	Date of Expiration.	Rock-drill men in shafts.	Rock-drill men in rises.	Rock-drill men elsewhere.	Miners (Hand Labour). +	Miners (wet ground extra allowance). Per shift.	Bracemen and Platmen.	Skipmen.	Mullockers and Shovellers.	Truckers—Filling and trucking.	Men working in Cyanide Vats, and Filter-press men.	Timbermen.	Surface Labourers.	Boiler Cleaners.	Horse-drivers (including feeding and grooming).	Drill and Tool Sharpeners.	Mechanics' Labourers.	Oilers and Greasers.	Riggers.	Firemen.	Pipe Fitters (underground).	Pitmen.	Fitters, Turners, and Blacksmiths.	Patternmakers.	Engine-drivers. Surface winding Engines.	Engine-drivers. All other classes of Engines.	Engine-drivers. ¶Overtime. Up to four hours.	Engine-drivers. ¶Overtime. After four hours.	Hours of work per week. Men on Surface.	Hours of work per week. Men underground.
			s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.				
Abbotts	30th Aug., 1910 ...	30th Aug., 1911	15 0	14 6	13 10	13 0	0 10	12 6	...	11 10	11 10	12 6	13 10	11 4	13 0	12 4	14 3	12 4	...	...	...	...	...	...	...	...	...	...	...	48	47
			15 4	14 10	14 2	13 4	...	...	..	12 6	12 6	13 6	15 0	12 6	...	13 6	...	12 6	...	...	...	...	...	...	...	...	...	...	...	...	...
Black Range ...	13th July, 1905 ...	1st Feb., 1907 ...	...	...	...	15 0	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...
	17th May, 1907 ...	31st May, 1910 ...	...	...	...	14 0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13 6	14 6	...	...	...	...	48	...
	20th May, 1908 ...	31st May, 1910 ...	15 4	14 10	14 2	13 4	1 3	13 6	...	12 0	12 0	13 10	15 0	11 8	14 0	12 8	14 4	...	...	...	...	...	15 0	...	...	...	...	...	...	48	47
	14th Aug., 1908 ...	31st May, 1910 ...	...	...	...	...	1 3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	47
			...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15 8	15 0	1¼	1½	47&48	...
Broad Arrow, Paddington, & Kanowna	19th Dec., 1904 ..	19th June, 1906 ...	14 4	13 10	13 4	11 8	1 8	11 8	...	10 6	10 6	11 8	13 4	10 0	11 10	11 0	12 8	...	...	...	...	...	...	...	...	...	...	...	...	48	47
	13th July, 1905 ...	1st Feb., 1907 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13 0	14 0	...	...	...	...	48	...
Bulong	13th July, 1905 ...	31st Dec., 1905 ...	14 4	13 10	13 4	11 8	...	11 8	...	10 6	10 6	11 8	13 4	10 0	...	...	...	...	10 6	...	...	...	...	...	...	...	...	...	...	48	47
	13th July, 1905 ...	1st Feb., 1907 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13 0	14 0	...	...	...	...	48	...
Bullfinch	*28th July, 1911 ...	28th August, 1911 ...	14 4	13 10	13 4	12 8 11 8	...	11 8	...	11 0	11 0	...	13 4	10 0	...	11 8	...	...	...	...	...	...	...	...	...	...	...	...	...	48	47
Burtville	*4th Sept., 1909 ...	7th March, 1911 ...	...	...	...	13 4	1 8	13 4	...	13 4	13 4	13 4	...	13 4	...	14 4	...	...	...	...	...	...	...	...	...	...	...	...	...	47	47
Comet Vale	31st Oct., 1912 ...	14th March, 1913 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14 10	14 2	...	...	48	...
Cue-Nannine ...	*17th Oct., 1904 ...	30th Jan., 1906 ...	14 6	14 0	13 4	12 6	0 10	12 0	...	11 4	11 4	12 0	13 4	10 10	12 6	11 10	13 9	...	...	...	...	...	...	...	...	...	...	...	...	48	47
	18th Dec., 1908 ..	1st Jan., 1910 ...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	..	...	...	§15 10 and 14 10	11 2	1¼	1½	47&48	...
Dundas (Norseman)	13th July, 1905 ...	1st Feb., 1907 ...	...	...	...	13 0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13 6	14 6	...	...	...	...	48	...
	16th June, 1910 ...	15th June, 1913 ...	14 8	14 2	13 8	12 6	1 8	12 0	13 8	11 2	11 2	12 0	13 8	10 8	12 2	11 8	13 0	11 8	...	...	...	...	...	...	...	...	...	...	...	48	47
	16th June, 1910 ...	16th June, 1911 ...	...	...	...	12 0	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	. .	...	14 4	13 8	1¼	1½	47&48	...
Gindalbie	10th Nov., 1908 ...	16th Nov., 1911 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14 10	14 2	1¼	1½	47&4	...
Higginsville	5th Oct., 1906 ...	1st May, 1908 ...	15 0	14 6	14 0	13 4 12 10 12 4	1 8	12 4	...	11 4	11 4	12 4	14 0	10 10	12 6	11 10	13 4	11 10	...	...	...	...	...	...	...	...	...	...	...	48	47
Kalgoorlie ...	13th July, 1905 ...	1st Feb., 1907 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13 0	14 0	...	...	...	...	...	48
	*10th March, 1910 ...	30th Sept., 1912‖ ...	14 4	13 10	13 4	11 8	...	11 8	...	11 0	11 0	11 8	13 4	10 0	...	...	...	10 to 15s.	10 6	...	11 8	...	...	...	...	§ 15s. & 14s.	13 4	...	...	47&48	47
Do. Engineers	21st Dec, 1911 ...	30th Sept., 1912 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1¼	...	...
Kanowna (for Miners' rates *see* Broad Arrow, etc.)	10th Nov., 1908 ...	16th Nov., 1911 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14 0	13 4	1¼	1½	47&48	...
Kunanalling	*21st Feb., 1910 ...	30th Sept., 1912 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14 10	14 2	1¼	1½	47&48	...
Lawlers and Mt. Sir Samuel	10th July, 1905 ...	1st Feb., 1907 ...	13 4	12 10	12 4	12 8 12 4	1 3	12 0	12 0	11 4	11 4	11 8	13 0	10 10	12 0	11 10	13 4	11 0	11 0	11 8	11 8	11 0	12 6	...	...	...	...	...	...	48	47
	13th July, 1905 ...	1st Feb., 1907 ...	...	...	...	12 0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13 6	14 6	...	...	...	...	48	...
Leonora, Kookynie, Laverton, etc.	13th July, 1905 ...	28th February, 1906 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	11 8	...	...	...	...	...	...	...	...	48	...
	13th July, 1905 ...	1st February, 1907 ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	13 0	14 0	...	...	...	...	48	...
	19th Jan., 1909 ...	1st Jan., 1910	a15 0	14 6	14 0	12 4	1 8	12 4	14 0	11 6	11 6	12 4	14 0	11 0	12 6	12 0	13 4	12 0	...	...	...	...	...	...	...	...	...	...	...	48	47
			14 8	14 2	13 8	12 0	1 8	12 0	13 8	11 2	11 2	12 0	13 8	10 8	12 2	11 8	13 0	11 8	...	...	..	...	...	...	...	...	...	...	...	48	47
	19th Jan., 1909 ...	1st Jan., 1910	...	...	...	...	...	...	...	...	...	..	..	...	...	...	...	...	...	...	...	...	...	...	...	a14 8	14 0	1¼	1½	48 &	...
			...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	14 4	13 8	1¼	1½	47	...

Marvel Loch	21st Oct., 1912 ...	31st May, 1914 ...	14 0	13 6	13 0	a12 6 b11 6	1 8	11 6	...	11 0	11 0	11 4	13 0	10 6	...	11 10	12 6	11 0	...	...	...	...	...	...	...	...	...	...	...	48	47
Meekatharra	30th Aug., 1910 ...	30th Aug., 1911	b15 4 15 0	14 10 14 6	14 2 13 10	13 4 13 0	0 10 0 10	12 6 12 6	... ...	12 6 11 10	12 6 11 10	13 6 12 6	15 0 13 10	12 6 11 4	... 13 0	13 6 12 4	14 3 14 3	12 6 12 4	Men on ...	cracker ...	12/6. Sol ...	ution ...	hands ...	13/4. ...	... ...	... ...	... ...	... ...	... ...	47 & 48	47 47
Menzies ...	16th Dec., 1904 ...	28th Feb., 1906 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15 5	14 0	1¼	1½	47	...
	19th Dec., 1904 ...	28th Feb., 1906 ...	14 9	14 3	13 9	12 0	1 8	12 0	...	11 0	11 0	12 0	13 9	10 6	12 0	11 6	13 0	11 6	...	...	...	...	...	...	...	...	...	...	...	48	47
	13th July, 1905 ...	28th Feb., 1906 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11 8	...	...	...	...	...	...	...	...	48	...
	13th July, 1905 ...	1st Feb., 1907 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13 0	14 0	...	...	...	...	48	...
Mt. Magnet ...	18th Dec., 1908 ...	1st Jan., 1910 ..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14 0	13 4	1¼	1½	47 & 48	...
	8th Nov., 1909 ...	16th Nov., 1910 ...	14 6	14 0	13 4	12 6	0 10	12 0	...	11 4	11 4	12 0	...	10 10	12 6	11 10	13 9	...	...	...	...	...	...	...	...	...	...	...	...	48	47
Mt. Morgans ...	13th July, 1905 ...	28th Feb., 1906 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	11 8	...	...	...	...	...	...	...	...	48	...
	13th July, 1905 ...	1st Feb., 1907 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	13 0	14 0	...	...	...	...	48	...
	19th Jan., 1909 ...	1st Jan., 1910 ...	14 8	14 2	13 8	12 0	1 8	12 0	13 8	11 2	11 2	12 0	13 8	10 8	12 2	11 8	13 0	11 8	...	...	...	...	...	...	...	...	...	...	...		47
	19th Jan., 1909 ...	1st Jan., 1910 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14 4	13 8	1¼	1½	47 & 48	...
Nullagine	*16th Jan., 1905 ...	1st Feb., 1907 ...	...	...	...	14 2	1 8	14 2 and 13 4	[illegible]	...	13 4	14 2	16 8	13 4	...	...	16 8	...	...	...	...	...	...	...	...	‡16 8	‡15 0	...	...	44	44
Peak Hill	6th Dec., 1906 ...	1st Oct., 1909 ...	15 0	14 6	13 10	13 0	1 3	12 6	...	11 10	11 10	12 6	13 10	11 4	13 0	12 4	14 3	...	...	...	...	...	...	...	...	...	...	...	...	48	47
Southern Cross ...	13th July, 1905 ...	1st Feb. 1907 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	12	13 0	...	...	...	...	48	...
Wiluna	13th July, 1905 .	1st Feb., 1907 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13	14 6	...	...	...	...	48	...
	6th Dec., 1906 ...	1st Jan., 1910 ...	15 6	15 0	14 4	13 6	1 3	13 0	13 0	12 4	12 4	13 0	14 4	11 10	13 6	12 10	14 9	...	...	...	...	...	...	...	...	...	...	...	...	48	47
*Youanme	22nd July, 1912 ...	7th May, 1915 ...	15 4	†14 10	14 2	a15 0 c14 0 b13 4	1 3	13 6	...	12 8	12 8	13 10	15 0	11 8	14 0	12 8	14 4	d13 4 e12 4	...	15 0	13 4	...	...	15 0	...	...	...	...	...	48	47

Addenda; Youanme.
Rock Breakermen, 12s. 6d.
Amalgamators, 15s. 6d.
Smeltermen, 12s. 6d.
Roper (?Rigger), 15s.
Slime Charger, 15s.
Slime Chargers Assistant, 13s. 4d.

* Industrial Agreement. (NOTE—An Industrial Agreement continues in operation until 30 days after the parties or any of them give notice of retirement therefrom). ‡ Hours of Labour for engine-drivers and battery feeders agreed to at 47 per week. § Special rate for large surface winding-engines. ¶ Overtime rates do not apply to continuous process mills, to pumping and bailing, or to work necessitated by breakdown of machinery. ‖ Five Industrial Agreements registered, viz.:—Miners, Filter-pressers, Firemen, Iron and Sheet Metal Workers' Labourers, and Engine-drivers. + Where three rates are shown for Miners (Hand Labour) they refer respectively to work in (*a*) Shafts (*b*) Rises, and (*c*) other parts of the mine. (*a*) Applicable only to Sons of Gwalia, Sons of Gwalia South and Murrin Murrin Proprietary Mines. (*b*) Applicable to Fenian Mine only.

PART V.—ACCIDENTS.

TABLE No. 26.

Men employed in Mines Killed and Injured in Mining Accidents during 1911 and 1912.

A.—*According to Locality of Accident.*

Goldfield.	Killed.		Injured.		Total Killed and Injured.	
	1911.	1912.	1911.	1912.	1911.	1912.
1. Kimberley	..	..	..	..	..	..
2. Pilbara	1	1	..	..	1	1
3. West Pilbara	..	1	..	..	..	1
4. Ashburton	..	..	..	..	..	..
5. Gascoyne	..	..	..	..	..	..
6. Peak Hill	..	..	..	..	..	..
7. East Murchison	1	1	8	5	9	6
8. Murchison	1	5	22	27	23	32
9. Yalgoo	..	..	..	..	..	..
10. Mt. Margaret	10	2	53	36	63	38
11. North Coolgardie	3	..	5	4	8	4
12. North-East Coolgardie	1	1	1	4	2	5
13. Broad Arrow	..	1	2	..	2	1
14. East Coolgardie	17	23	370	329	387	352
15. Coolgardie	..	..	4	12	4	12
16. Yilgarn	2	..	7	8	9	8
17. Dundas	..	..	1	6	1	6
18. Phillips River	..	..	1	1	1	1
MINING DISTRICTS.						
Northampton	..	..	3	..	3	..
Yandanooka	..	..	..	..	..	..
Greenbushes	1	..	1	1	2	1
Collie	..	..	50	58	50	58
Total	37	35	528	491	565	526

During the year 1912, 35 fatal accidents occurred as against 37 in 1911. The number of injured shows a decrease of 37, compared with the preceding year. Full details of these accidents will be found in the Report of the State Mining Engineer, published as Division II. to this Report.

B.—*According to Causes of Accidents.*

	1911.		1912.		Comparison with 1911.	
	Fatal.	Serious.	Fatal.	Serious.	Fatal.	Serious.
1. Explosives	2	15	3	11	+ 1	— 4
2. Falls of Ground	12	42	14	62	+ 2	+ 20
3. In Shafts	12	33	8	20	— 4	— 13
4. Miscellaneous Underground	3	291	7	284	+ 4	— 7
5. Surface	8	147	3	114	— 5	— 33
Totals	37	528	35	491	— 2	— 37

Of the fatal accidents, one occurred at a Copper mine, and the remaining 34 in Gold Mines. The death rate per 1,000 men employed on Gold Mines was 2·48, as against 2·33 in 1911.

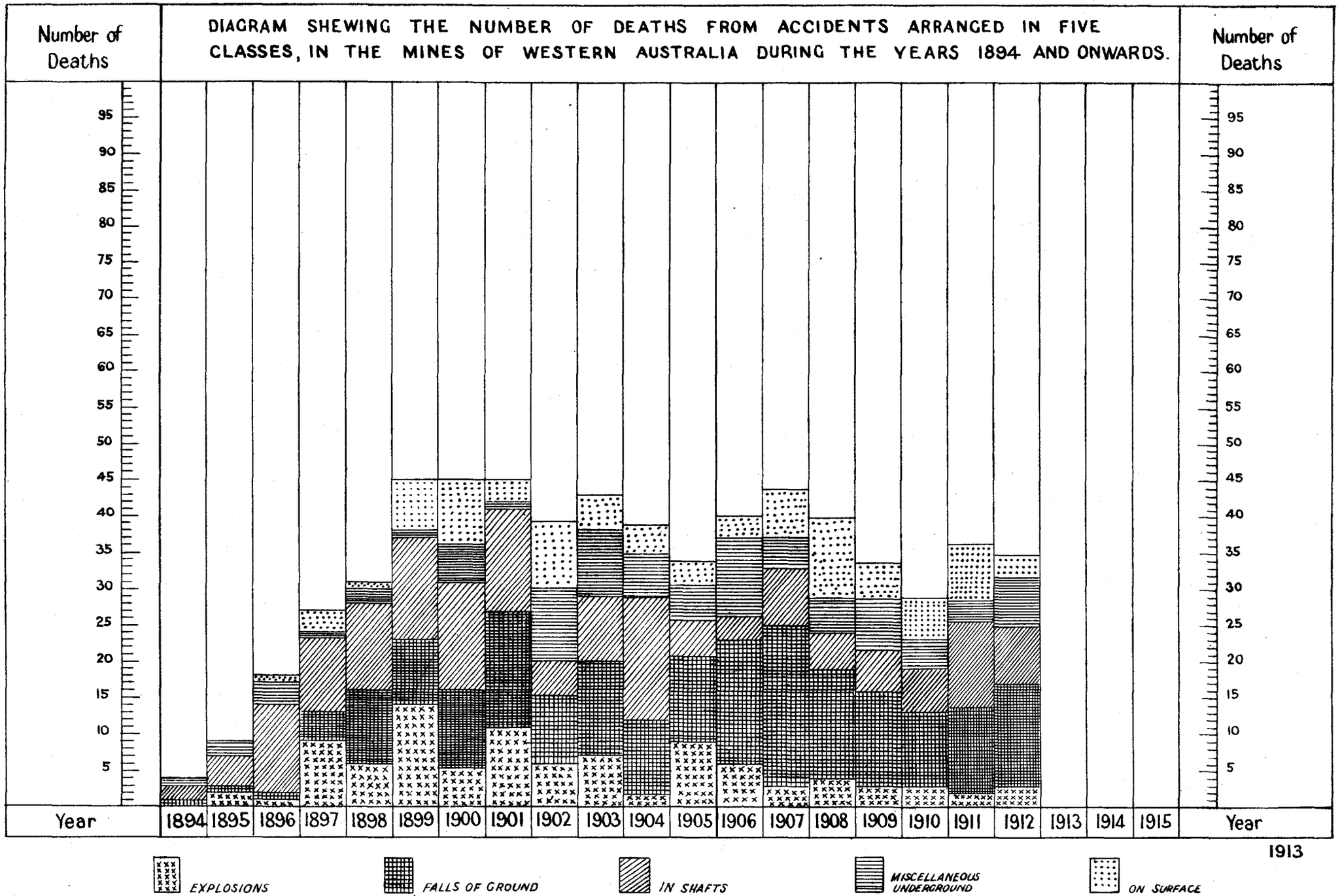

Number of Deaths
DIAGRAM SHEWING THE NUMBER OF DEATHS FROM ACCIDENTS ARRANGED IN FIVE CLASSES, IN THE MINES OF WESTERN AUSTRALIA DURING THE YEARS 1894 AND ONWARDS.
Number of Deaths
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
Year
1894
1895
1896
1897
1898
1899
1900
1901
1902
1903
1904
1905
1906
1907
1908
1909
1910
1911
1912
1913
1914
1915
Year
1913
EXPLOSIONS
FALLS OF GROUND
IN SHAFTS
MISCELLANEOUS UNDERGROUND
ON SURFACE INCLUDING MACHINERY

TABLE 27.

Deaths of Persons employed at Mines from Accidents during 1911 and 1912.

	1911.						1912.					
	Number of Persons killed.			Death Rate per 1,000 Men employed.			Number of Persons killed.			Death Rate per 1,000 Men employed.		
	Above Ground.	Under Ground.	Total.	Above Ground.	Under Ground.	Total.	Above Ground.	Under Ground.	Total.	Above Ground.	Under Ground.	Total.
Coal Mines	...	...	...	...	...	...	...	...	...	...	...	...
Men employed ...	(123)	(340)	(463)	...	...	...	(126)	(416)	(542)	...	...	...
Gold Mines	7	29	36	·98	3·51	2·33	2	32	34	·32	4·35	2·48
Men employed ...	(7,166)	(8,262)	(15,428)	...	...	...	(6,336)	(7,364)	(13,700)	...	...	...
Other Mines	1	...	1	1·85	...	1·42	1	...	1	1·87	...	1·40
Men employed ...	(541)	(164)	(705)	...	...	...	(535)	(184)	(719)	...	...	...
Total for all Mines ...	8	29	37	1·02	3·31	2·23	3	32	35	·43	4·02	2·34
Total number of men employed	(7,830)	(8,766)	(16,596)	...	...	...	(6,997)	(7,964)	(14,961)			

TABLE 28.

Deaths of persons employed from Accidents in Gold Mines during 1912, and the Death Rate per 1,000 men employed, and per 1,000 tons of Gold Ore raised during 1911 and 1912 (Number of men taken as in Table 23, not including Alluvial Gold Workers).

GOLDFIELD.	Number of Deaths.			Death rate per 1,000 Men employed.				Number of Deaths per 1,000 tons of Gold Ore raised.	
	1912.			1912.			1911.		
	Above Ground.	Under Ground.	Total.	Above Ground.	Under Ground.	Total.	Total.	1912.	1911.
1. Kimberley	..	..	..	..	..	..	..	..	..
2. Pilbara	..	1	1	..	16·67	8·77	8·55	·278	·289
3. West Pilbara	..	..	..	..	..	..	..	..	..
4. Ashburton	..	..	..	..	..	..	..	..	..
5. Gascoyne	..	..	..	..	..	..	..	..	..
6. Peak Hill	..	..	..	..	..	..	..	..	..
7. East Murchison	1	..	1	2·03	..	·91	·73	·005	·005
8. Yalgoo	..	..	..	..	..	..	..	..	..
9. Mt. Margaret	..	2	2	..	2·97	1·81	7·07	·009	·032
10. North Coolgardie	..	..	..	..	..	..	2·57	..	·031
11. North-East Coolgardie ..	..	1	1	..	6·90	3·72	3·50	·030	·020
12. Broad Arrow	..	1	1	..	8·85	4·83	..	·036	..
13. East Coolgardie	1	22	23	·46	6·66	4·19	2·95	·013	·010
14. Coolgardie	..	..	..	..	..	..	..	..	..
15. Murchison	..	5	5	..	4·90	2·15	·37	·028	·005
16. Yilgarn	..	..	..	..	..	..	4·37	..	·106
17. Dundas	..	..	..	..	..	..	..	..	..
18. Phillips River	..	..	..	..	..	..	..	..	..
Total	2	32	34	·34	4·35	2·57	2·43	·013	·013

The number of deaths per 1,000 men employed, shows an increase from 2·43 in 1911, to 2·57 in 1912, the figures for 1912 being the same as 1911, viz. :—·013 per 1,000 tons of gold ore raised.

PART VI.—STATE AID TO MINING.

The number of State Batteries existing at the close of the year was 35 as compared with 33 in 1911. New plants were erected at Payne's Find and Mount Egerton.

From inception to end of 1912 Gold and Tin to the value of £3,956,337.47 has been recovered at the State Plants.

900,416.44 tons of Gold ore were treated and produced £3,340,774.01 worth of gold by amalgamation; £447,072.56 worth by cyanidation; £95,186.43 from slime treatment, and 56,883.50 tons of Tin ore produced tin to the value of £73,304.47.

During the year the Gold ore treated was 56,636 tons for 53,828 fine ozs., and in the preceding year 59,373 tons for 56,265 fine ozs.

The working expenditure for all plants during the year totalled £49,804 18s. 10d. and the revenue £40,856 13s., which, after including £837 15s. for additions, etc., and paid from Revenue, shows a loss of £9,786 0s. 10d. on the year's operations.

The Capital Expenditure from the inception of the scheme was £309,840 7s. 8d., £91,981 1s. 8d. being paid from Revenue and £217,859 6s. from Loan.

The cost of Administration for the year was £3,627 15s. 4d. as against £3,764 3s. 10d. for 1911.

The working expenditure from inception to the 31st December, 1912, exceeds the Receipts by £38,657 9s.

GEOLOGICAL SURVEY.

The work of this Branch of the Department was carried out on much the same lines as heretofore, and was broadly subdivided into Geology in its relation to (a) Mining, (b) Water Supply, and (c) Agriculture. The work was mostly carried out by 16 officers.

The field work carried out embraced:—

- An examination of the tin-mining centres of Poonah and Coodardy.
- A flying survey of the South-Western portion of the Murchison Goldfield.
- An examination of the condition of mining in the North-West Division.
- A survey of the country to the South of Coolgardie and between there and Kalgoorlie.
- A flying survey of the Southern portion of the Yilgarn Goldfield, with a more or less detailed examination of Marvel Loch.
- Minute investigations of Ora Banda and the North End of Kalgoorlie, and
- A flying survey of the East Murchison Goldfield.

Good progress has been made with the mapping of the country in the Mining Districts, with the object of meeting the demand for geological information of outside and less known districts.

A detailed examination of lime and other allied deposits of the South-West Division has been commenced in the interests of the Agricultural Industry.

Six Bulletins were issued to the public during 1912, four are in the printer's hands and five are just approaching completion. The additions to the geological survey collections amounted to 770, bringing the total number of specimens registered up to nearly 13,000.

The Chemical and Physical examinations, etc., required for the investigations of the Survey, the public, and the State Batteries Branch have amounted to 4,394.

In addition to the ordinary work of the Geological Survey, 73 special reports, arising out of proposals for land alienation and subsidies under the Mining Development Act, were made during the year.

Full details as to the multifarious work of this Branch of the Service will be found fully set out in the report of the Government Geologist, which is attached, and to which a map showing the present state of the Field work is appended.

ASSISTANCE UNDER THE MINING DEVELOPMENT ACT, 1902.

The following statement shows the sums advanced during the year 1912 under the provisions of the Mining Development Act.—

	£	s.	d.
Advances in aid of Mining work and equipment of mines with machinery	3,772	13	2
Advances in aid of erection and equipment of crushing plants, including subsidies paid on stone crushed for the public ..	3,710	6	7
Advances in aid of boring ..	2,103	7	11
Providing means of transport ..	253	2	10
	£9,839	10	6

In addition to the above, amounts totalling £34,016 13s. 1d. were expended from the Mining Development Vote on various matters for the assistance of mining, such as water supply, roads, subsidies to assist cartage of ore long distances, and subsidies for development work done below 100ft. level in small mines.

Included in amount £34,016 13s. 1d. is the sum of £15,469 4s. 10d., being the debit balance at the 30th June, 1912, of the Timber Tramway (Cue) Suspense Account, also £16,852 19s. 10d., Account of Purchase of Tailings, both of which were charged against the Mining Development Vote.

Included in the amount set against Advances in aid of erection, etc., is the sum of £998 10s. 9d., being the subsidies paid to the owners of plants crushing for the public, the conditions being that they crush for the public at fixed rates, in most cases a further requirement being imposed as to treating or purchasing tailings. The ore crushed at such plants during the year amounted to 10,557 tons.

The Receipts under Mining Development Act, exclusive of Interest payments amounted to £4,634 11s. 1d., made up as follows:—

	£	s.	d.
Refunds of Advances ..	1,345	12	2
Sales of Securities	508	16	2
Miscellaneous	2,780	2	9

WATER SUPPLY.

The work of this Branch was, during the year, transferred to the newly formed Water Supply Department, and all water supply matters on the Goldfields are now attended to by that Department.

PART VII.—REMARKS ON THE GOLDFIELDS AND MINERAL DISTRICTS AND SUMMARIES OF THE WARDENS' AND OTHER OFFICERS' REPORTS.

ASHBURTON GOLDFIELD.

The output of gold from this field was 39 fine ounces, and for the preceding year 256 fine ounces; a decrease of 217 fine ounces.

There has not been any improvement in this field, and mining is quite at a standstill.

BROAD ARROW GOLDFIELD.

The output of gold for the year was 13,375 fine ounces, and for the preceding year 7,153 fine ounces; an increase of 6,222 fine ounces. This improvement is entirely attributable to the Ora Banda centre, where several properties are giving much promise, in particular the Victorious Mine, which is opening up splendidly and fulfilling the predictions of its present owners when it was first acquired.

The Government have rendered considerable assistance to the locality by providing an ample water supply, and the erection of a State Mill has been approved, which should be running early in the new year. No new finds or developments worthy of note have been reported from any of the old centres of Bardoc, Black Flag, Broad Arrow, and Paddington, and there are not any prospects of immediate improvement.

COLLIE COALFIELD.

The output of coal for the year was 295,079 tons, and in the preceding year 249,899 tons; an increase of 45,180 tons.

This improved output is attributable to the more general use of improved machinery. There was, fortunately, an entire absence of fires throughout the year. There was a falling-off in the bunkering trade at Bunbury, attributable, among other things, to the higher freights caused by the shipping strike in England. This port depends entirely on tramp steamers, and the higher freights induced them to take as much cargo as possible to the detriment of coal bunkering. This necessitated many of the mines working short time, thereby decreasing the earnings of the miners and affecting trade generally. The district, however, is prosperous, and the outlook good.

COOLGARDIE GOLDFIELD.

The output of gold for the year was 42,182 fine ounces, and for the preceding year 33,754 fine ounces; an increase of 8,428 fine ounces. This yield is the largest since 1907. In the Bonnievale Centre there has not been any improvement.

The Burbanks centre is still the main producing one. The Main Lode Mine continues to develop well, and good results are being got from a depth of over 900 feet. Good developments have also taken place at the Mainstay and Lady Robinson Mines. The tributers on the Birthday Mine had again a most prosperous year.

In the Coolgardie Centre matters have been rather quiet; the tributers on Bailey's mine, however, had some good crushings.

At Eundynie tributers on the Hidden Secret continued to do well, but the tribute having expired the mine was handed back to the owners as a vastly improved proposition. At Gibraltar, Higginsville, Londonderry, Red Hill, and Widgiemooltha prospecting has been pursued, but nothing of note transpired.

In the Kunanalling Centre there has been an improvement, the output from the Carbine Mine being very consistent. Various mines at Jourdie Hills gave fair average returns. At the 25 mile some promising country is being opened up, and a five head mill is in course of erection. The outlook for the field is good.

DUNDAS GOLDFIELD.

The output of gold was 25,314 fine ounces, and for the preceding year 28,990 fine ounces; a decrease of 3,676 fine ounces. Steady development work has been pursued on the various properties. On the Lady Miller leases fair progress has been made in opening up; the whole of the surface plant has been reorganised and additional plant erected. The result of the year's operations is encouraging and gives promise of a good future. On the Princess Royal the Government is assisting for the purpose of proving the mine at depth, and the result is awaited with much interest. The outlook for the field is good.

EAST COOLGARDIE GOLDFIELD.

The output of gold was 756,795 fine ounces, and for the preceding year 776,494 fine ounces; a decrease of 19,699 fine ounces.

No new finds of any importance were reported. Development work at depth was continued on most of the large mines, and in the Hannans Reward, Golden Horseshoe, and the Great Boulder mines there have been promising occurrences. Otherwise the position has not apparently altered during the year. In the outside centres there has not been any improvement.

EAST MURCHISON GOLDFIELD.

The output of gold was 99,131 fine ounces, and for the preceding year 102,391 fine ounces; a decrease of 3,260 fine ounces. This decrease is more than accounted for by the lessening in the output consequent on the closing down of the mines belonging to the Northern Mines, Ltd. and the Vivien Company, in the Lawlers District. The output from other mines in this district shows a slight improvement. In the Wiluna District the output shows a slight falling-off, but the coming year is expected to show a decided improvement.

At Mt. Keith there is a good deal of activity, and the State Mill is in course of erection. In the Black Range District the production was over 84,000 ounces, which is a record and an increase on the preceding year of more than 16,000 ounces. This improvement is largely due to the Yuanmi Gold Mines, Ltd. The outlook for this field, with the exception of the Lawlers Centre, is most promising.

GASCOYNE GOLDFIELD.

Nothing has been reported from this field, which is practically deserted as a goldfield excepting for a few dry-blowers. Seven (7) fine ounces of gold were reported, as against eight (8) in the preceding year.

GREENBUSHES MINERAL FIELD.

The output of Black tin for the year was 430.45 tons, valued at £50,166, and for the preceding year 411.12 tons valued at £44,638; an increase of 19.33 tons, and of value £5,528. This increase is attributable to the increased price of tin, which has enabled miners to take up ground formerly regarded as unpayable and work it at a profit. It has also been an incentive to the more vigorous development of existing holdings. This improvement would have been even greater but for the fact that the year was somewhat dry, the rainfall being less and the rainy season late, which delayed the commencement of operations with the dredges for about one month. Dredging is the principal form of mining. In lode mining, work has been continued on the South Cornwall Mine with promising results. The prospects for the field are excellent.

KIMBERLEY GOLDFIELD.

The output of gold was 272 fine ounces, and in the preceding year 171 fine ounces, an increase of 101 fine ounces. This is all alluvial gold won by about 25 fossickers. The year was an exceedingly dry one which militated against prospectors going far away from settlement. No reefing is done and there are no signs of any improvement.

MT. MARGARET GOLDFIELD.

The output of gold was 102,970 fine ounces, and for the preceding year 152,474 fine ounces, a decrease of 49,504 fine ounces. In addition 7,625.80 tons of pyritic ore, valued at £2,543, were raised, a decrease on the preceding year in tonnage of 2,313.12 tons and in value of £1,016.

In the Mt. Margaret district many of the mines were hung up, including the Lancefield, which closed down in May and has not yet re-opened although it is expected to do so early in the new year. The Ida H. mine has been crushing continuously and its output shows an increase. The Augusta mine is being equipped with new plant and should make an early start with the treatment of stone. At Burtville matters have been very quiet. In the Mt. Morgans district there was a slight revival at the old abandoned locality of Mt. Margaret, where a good deal of prospecting is being carried out with so far encouraging results. Apart from that the district has been very quiet.

In the Mt. Malcolm district there was a falling off in output, principally owing to a decrease in the output of the Sons of Gwalia mine and the closing down of the Sons of Gwalia South. In the various centres prospecting has been continued, and although the year was not as good as anticipated there are indications of a general improvement. The outlook for the field is promising.

MURCHISON GOLDFIELD.

The output of gold for the year was 105,373 fine ounces, and for the preceding year 119,653 fine ounces, a decrease of 14,280 fine ounces. Copper to the extent of 4.80 tons, valued at £54, was reported, but none in the preceding year.

In the Nannine district the output was less, owing to the diminished output from all the centres excepting Meekatharra, where there was an increase. The mines in this centre continue to open up well and are exceedingly promising. At Garden Gully the Kyarra mine has been equipped with a ten-head mill and cyanide plant, and crushing was commenced towards the close of the year. This mine has excellent prospects.

At Nannine things are very quiet, the Robinson being practically the only mine working. At Quinns a number of small holdings have been worked with highly payable results.

At Gabanintha a battery has been placed on the New Brew mine and payable crushings obtained.

Mining at Yaloginda has been quiet, but a Lane Mill is in course of erection on the Chunder Loo which may improve matters. At Gum Creek, Jillawarra, Chesterfield, and Burnakurra, things have been very quiet. In the Mt. Magnet district there was a slight increase due to several rich crushings from small shows. Two of the principal mines—the Morning Star and the St. George—closed down at the end of the year, but the renewed interest in prospecting consequent on numerous rich patches having been found at various centres gives hope of early discovery of other big mines.

In the Cue district there was a decrease accounted for by diminished returns from the Hidden Treasure mine. A discovery, the first in the State, was made of emeralds at Poonah and has resulted in increased interest in the locality west and north-north-west of Cuddingwarra, where already the existence of gold, silver, tin (lode and stream), asbestos, and wolfram have been proved. A large number of holdings have been taken up. The remainder of the district has been very quiet.

In the Day Dawn district there is also a decrease, due to a lessened output from the Great Fingall, in which, however, development work has revealed promising indications at depth.

The Murchison Associated mine closed down and the plant is being disposed of.

At the Creme d'Or mine, the owners of which have been financially assisted by the Government, steady progress has been made.

The outlook for this field, particularly the Meekatharra portion, is good.

NORTHAMPTON AND YANDANOOKA MINERAL FIELDS.

No minerals were reported from the Yandanooka district for the year.

In the Northampton field there has been an improvement, due in large measure to the improved price of lead.

At the Baddera and Narra Tarra mines a considerable amount of work was done, and a large number of leases and prospecting areas have been taken up, indicating an increasing interest.

The output was 11,098.50 tons of lead ore, valued at £24,412, an increase in tonnage of 2,903.74 tons and in value of £6,749.

NORTH COOLGARDIE GOLDFIELD.

The output of gold was 58,270 fine ounces, and for the preceding year 64,760 fine ounces, a decrease of 6,490 fine ounces.

In the Menzies centre the Menzies Consolidated mine at Yunndaga is the principal producer, and developments at depth in this mine are very encouraging.

At the other mines there are no developments worthy of note. At Comet Vale several properties continue to open up splendidly. At Mt. Ida things have remained very quiet. In the Ularring district there has not been any development of importance. At Mulline several leases have been worked with promising returns. At Riverina a couple of mines are working and throughout the district prospecting is being vigorously pursued. In the Niagara district the Golden Butterfly mine at Tampa has been doing good work. It is a large low-grade proposition which gives promise of a good future. The Lubra Queen is also doing good work. In the Yerilla district the various centres have remained rather quiet, but Linden gives promise of a more prosperous future. The Devon mine is putting in good work and employing a fair number of men.

The outlook for the field is hopeful.

NORTH-EAST COOLGARDIE GOLDFIELD.

The output of gold was 13,856 fine ounces and for the preceding year 19,555 fine ounces, a decrease of 5,699 fine ounces. During the year a find of good gold was made at Kurnalpi, which caused a rush and consequent pegging out of many leases. Outside the original find, however, nothing has been discovered. At Binti Binti there has been a little activity, and several leases applied for. At the other centres matters have not improved. The outlook for this field is more promising than it was at the beginning of the year.

PEAK HILL GOLDFIELD.

The output of gold was 1,862 fine ounces and for the preceding year 1,747 fine ounces, an increase of 115 fine ounces. At Mt. Egerton the State mill commenced work towards the end of the year, but operations were retarded somewhat owing to an insufficient water supply. At Ruby Well considerable work has been done, but the prospectors are handicapped for want of crushing facilities. The Department has offered to assist a private firm in the erection of a battery for public crushing. The Ravelstone State mill is being thoroughly overhauled with the object of helping the district along. The prospects for the field are encouraging.

PHILLIPS RIVER GOLDFIELD.

The output of gold for the year was 4,201 fine ounces, and for the preceding year 5,657 fine ounces, a decrease of 1,456 fine ounces. The production of copper ore was 1,318.38 tons, valued at £15,815, and for the preceding year 13,563.68 tons, valued at £46,862, a decrease in tonnage of 12,245.30 tons and in value of £31,047. The falling off is due to the closing down of the mines owned by the Phillips River Gold and Copper Co., which were under exemption excepting for tributers on some of the leases. At the end of the year there were indications that the mines would be reopened early in the coming year. At Kundip some good returns were obtained, but failing the big mines being restarted there are no prospects of any decided improvement in the immediate future.

PILBARA GOLDFIELD..

The output of gold for the year was 5,999 fine ounces, and for the preceding year 4,608 fine ounces, an increase of 1,391 fine ounces. Black tin to the extent of 123.38 tons, valued at £14,993, was raised, and in the preceding year 148.65 tons valued at £16,064, a falling off in tonnage of 25.27 tons, and in value of £1,071. There was no production of copper. There has been very little alteration in this field since the previous year. With the high price ruling for tin it was expected that more of the numerous tin lodes that exist would have been actively developed, particularly at Wodgina.

The position at this centre would have been most acute but for the assistance rendered by the Department by way of granting free crushings of 20-ton parcels to prospectors, thus enabling them to obtain means to carry on further work. The Department has also leased the Mt. Cassiterite Battery for a term and will run it as a State plant, which should prove a considerable boon to working miners.

At Marble Bar there has been steady work on various leases, and the gold output was in excess of the previous year, attributable to the facilities afforded by the State Mill.

At Bamboo Creek the erection of a State plant is in hand, and this has stimulated mining, with the result that good developments have taken place at the lower levels on several previously abandoned properties.

At Warrawoona operations were continued on the Klondyke Boulder Mine with varying results, but indications point to this property, in the development of which the Government is assisting, proving eventually a consistent gold producer.

In the latter part of the year a number of leases for copper were taken up at North Pole, and the Warrawagine District for silver and copper. No work has yet been done on these, and their value has still to be proved.

At Moolyella and Cooglegong alluvial tin has been worked, but the output was not as good as the previous year.

In the Nullagine District mining has been quiet, but there were a few good crushings from 20 Mile Sandy and Mosquito Creek. The rainfall was not up to expectation and a mild state of drought prevailed, which naturally retarded prospecting operations.

The coming year is expected to show a decided improvement.

WEST PILBARA GOLDFIELD.

The output of gold was 1,118 fine ounces, and for the preceding year 983 fine ounces; an increase of 135 fine ounces. Copper ore to the extent of 12,284.02 tons, valued at £104,289, was raised, and in the preceding year 9,082.02 tons valued at £69,140; an increase in tonnage of 3,202 tons, and in value of £35,149. In the latter part of the year the Department sent an officer to the district for the purpose of sampling the ore ready for shipment, and in connection with which advances are to be made to prospectors to ensure them an early return for their work. It is hoped by this assistance to render considerable help to the district.

The various mines have been working steadily, but nothing of note has transpired.

WEST KIMBERLEY MAGISTERIAL DISTRICT.

During the year the Department rendered assistance to a local company in the erection of plant on Wolfram Reward Lease No. 146H. This property is opening up promisingly. No work was done on the

Iron leases at Yampi Sound, and nothing of importance transpired elsewhere on the field.

YALGOO GOLDFIELD.

The output of gold was 6,166 fine ounces, and for the preceding year 1,162 fine ounces, an increase of 5,004 fine ounces, principally due to increased output from the Royal Standard mine at Yuin and the various leases at Payne's Find. The State Battery at the last-mentioned place commenced operations in June, and several properties are opening up well. At Yuin preparations are being made for the erection of a good deal of plant, and the mine is said to look well. In the other centres prospecting is going on, and the outlook for this field is good.

YILGARN GOLDFIELD.

The output of gold was 30,675 fine ounces, and for the preceding year 18,811 fine ounces, an increase of 11,864 fine ounces. This production is the highest for many years. Towards the end of the year the plant on the Bullfinch Mine commenced running, and it is expected that the mine will now become a steady producer.

The Great Victoria Mine, which contains an immense low-grade lode, is being vigorously developed under an option, and if results are favourable, a great impetus will be given to low-grade mining in the field.

The Marvel Loch District continues to be the greatest gold producer, but excellent developments have taken place at Westons, where the Edna May Mine is coming into prominence as a large producer. Other leases at this find are also developing well.

At Corinthia the North Corinthian Mine is employing a large number of men and opening up encouragingly.

From the Marda centre there have been some very rich crushings, and at Mt. Jackson the plant leased by the Government has been running during the year on public crushing.

The outlook for this field is very promising, and a steady increase in gold production is predicted.

TABLE 29.

Value of Mining Machinery and Number of Stamps and other Mills erected on the 31st December, 1912, compared with the previous Year.

Goldfield.	District.	Value of Mining Machinery.		Batteries. Number of Stamps.		Mills.																	
						1911.									1912.								
		1911.	1912.	1911.	1912.	Prospecting.	Ball.	Krupp Ball.	Griffin.	Huntington.	Tremain.	Flint.	Other Crushers.	Puddlers.	Prospecting.	Ball.	Krupp Ball.	Griffin.	Huntington.	Tremain.	Flint.	Other Crushers and Grinding Pans.	Puddlers.
		£	£																				
1. Kimberley	...	5,000	5,000	45	45	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...
2. Pilbara	Marble Bar	16,245	11,355	60	60	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Nullagine	4,600	4,507	30	30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
3. West Pilbara	...	2,600	4,850	20	30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4. Ashburton	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5. Gascoyne	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6. Peak Hill	...	74,150	9,915	50	40	1	...	...	...	...	...	...	2	2	...	...	...	...	...	...	...	4	...
7. East Murchison	Lawlers	49,097	42,474	148	148	...	...	...	...	...	...	...	1	2	1	...	...	...	...	...	...	5	2
	Wiluna	76,875	88,133	70	80	3	...	...	...	...	...	...	1	...	3	1	...	...	...	...	...	7	...
	Black Range	113,259	119,080	115	125	...	...	...	...	...	...	...	2	...	...	1	1	...	...	...	...	10	...
8. Murchison	Cue	32,708	30,135	98	93	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Nannine	101,706	99,113	222	209	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	13	1
	Day Dawn	20,800	207,400	65	60	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	21	...
	Mt. Magnet	37,565	37,401	85	55	3	...	...	...	1	2	...	...	...	3	...	...	...	...	2	...	5	1
9. Yalgoo	...	30,145	27,580	105	73	2	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	1	...
10. Mt. Margaret	Mt. Morgans	21,278	32,900	57	132	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...
	Mt. Malcolm	107,527	199,494	240	235	...	...	...	...	...	1	...	11	1	...	...	...	...	...	1	...	31	...
	Mt. Margaret	128,327	126,278	163	163	...	5	...	...	...	...	...	1	...	...	5	...	...	...	...	...	12	1
11. North Coolgardie	Menzies	69,292	68,248	140	135	...	...	...	...	1	...	...	4	...	...	...	...	...	1	...	...	8	...
	Ularring	32,750	31,277	85	85	...	...	...	...	2	...	...	2	...	...	...	...	...	2	...	...	9	...
	Niagara	28,512	24,343	112	75	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	5	...
	Yerilla	28,400	25,067	86	81	1	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	6	...
12. Broad Arrow	...	32,020	45,106	123	93	1	...	...	...	1	...	...	1	...	1	...	...	...	5	...	...	3	...
13. North-East Coolgardie	Kanowna	46,397	27,220	143	138	3	...	...	...	...	...	...	...	2	3	...	...	...	...	...	...	3	...
	Kurnalpi	180	355	5	5	1	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	1
14. East Coolgardie	East Coolgardie	1,696,631	1,700,485	640	665	2	15	35	13	8	...	33	52	3	1	21	28	13	9	...	33	215	3
	Bulong	5,187	3,000	20	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15. Coolgardie	Coolgardie	108,110	101,472	304	302	8	...	...	...	...	...	...	4	...	...	...	...	...	1	...	...	10	...
	Kunanalling	17,697	18,355	80	85	...	2	...	...	...	...	...	1	1	...	2	...	...	...	...	...	3	...
16. Yilgarn	...	47,375	84,189	125	125	...	...	...	...	...	...	...	5	...	...	...	...	...	...	...	...	4	...
17. Dundas	...	186,239	192,525	135	135	1	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	15	...
18. Phillips River	...	20,723	19,109	61	61	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...
State generally	...	58,000	58,000	...	...	...	...	1	...	...	...	...	1	...	...	...	1	...	...	...	...	1	...
Total Gold-extracting Machinery	...	3,199,395	3,444,386	3,632	3,573	27	22	36	13	15	5	33	94	12	14	30	30	13	20	3	33	396	9
Total Machinery, other than Gold-extracting	...	234,011	282,885	5	5	...	3	...	...	4	...	...	17	3	...	2	...	...	4	...	...	22	...
TOTAL MINING MACHINERY	...	3,433,406	3,727,271	3,637	3,578	27	25	36	13	19	5	33	111	15	14	32	30	13	24	3	33	418	9

PART VIII.—EXISTING LEGISLATION.

At the close of the year the Acts in force relative to mining were:—

1. "The Mining Act, 1904."
2. "Sluicing and Dredging for Gold Act, 1899."
3. "Mines Regulation Act, 1906."
4. "Coal Mines Regulation Act, 1902."
5. "Mining Development Act, 1902."
6. "Mines and Machinery Inspection Act, 1911."

There was not any legislation directly affecting the industry passed during the year, but the following amendments to Regulations were gazetted:—

Under the "Mines Regulation Act, 1906"—

New General Rules 19 (a) and 41 under Regulation 4.

Under the "Mining Development Act, 1902"—

An amendment to Regulation 7.

PART IX.—INSPECTION OF MACHINERY.

The Chief Inspector of Machinery reports that at the close of the year the number of useful boilers on the registers was 2,992, a decrease of eight on the previous year. There has been a falling-off in returns from the goldfields, but the South-Western district shows considerable improvement. Of the boilers in use registered, 1,575 have been thoroughly inspected, 205 working inspections made, and 1,595 certificates issued. Permanent condemnations totalled 44, temporary condemnations 70, conversions into tanks, air receivers, etc., six, and six have been transferred outside the State.

The total number of machinery plants in use is 3,113, as against 3,036 in the preceding year.

The total number of inspections was 1,725, and in the previous year 1,812.

Two hundred and sixty-six candidates for engine-drivers' certificates were examined, and certificates as shown hereunder were granted:—

1st Competency	10
2nd Competency	39
3rd Competency	61
Loco and Traction Competency ..	18
Traction Competency	10
Interim Certificates	26
Copies of lost and destroyed Certificates	13
	177

In carrying out inspection and other work a total distance of 44,773 miles was travelled.

PART X.—SCHOOL OF MINES.

Steady progress has been maintained at the School during the year, the ninth of its existence.

Class work in all subjects has been maintained up to the standard of previous years, and although the attendance during the first term showed an appreciable decrease, the falling-off in numbers during the year was smaller than usual, and at the end of the year there were as many individual students as at the end of the previous year. A very encouraging feature was that on the average the students attended more classes and gained a greater number of passes at the examinations than formerly. There was an increase in the number of students at the preparatory classes, and a higher percentage obtained certificates. The extra support given to the preparatory classes indicates that the importance of obtaining a sound knowledge of underlying principles before proceeding to the work of the Associateship courses is being recognised to a greater extent, and augurs well for the future.

The erection of class rooms for Elementary Science at two of the State schools in the district has resulted in the discontinuance of the Science Classes in Physics which were formerly conducted for the benefit of State school scholars.

The erection of a Suction Gas Producer Plant and Experimental Engine was completed towards the end of the year and will be in readiness for the new year classes. By means of this equipment students will be made familiar with the theory, construction, and operation of producer gas plants, and will have opportunities of studying the co-operative economy of fuels and gases, and of making engine tests under various conditions.

Already a considerable number of inquiries have been received from intending students and a short course of lectures and practical work has been outlined, which will give them very valuable instruction.

The system of free assays for prospectors has been continued, and a considerable amount of useful information has been furnished. A total of 511 assays and determinations was made.

CONCLUSION.

In dealing with the operations of the various sub-departments I have only briefly commented on the principal items. Full and detailed information will be found in the reports of the various officers controlling, published as Divisions II. to VII. of this report.

In conclusion I desire to acknowledge the support received from all officers of the Department during the year.

H. S. KING,
Under Secretary for Mines.

Department of Mines,
Perth, 31st March, 1913.

DIVISION II.

REPORT OF THE STATE MINING ENGINEER FOR THE YEAR 1912.

The Under Secretary for Mines, Perth, W.A.

Sir,

I have the honour to forward, for the Hon. the Minister for Mines' information, my Annual Report for the year 1912.

Office of the State Mining Engineer,
Mines Department, Perth, W.A.,
13th March, 1913.

INSPECTION OF MINES UNDER "THE MINES REGULATION ACT, 1906," AND "THE COAL MINES REGULATION ACT, 1902."

During the year we lost the services of two valued officers, Messrs. Lander and Briggs. The first having reached the age limit had to retire from the Public Service, and his position at Cue has since been temporarily filled by one of the Kalgoorlie Inspectors, Mr. Deeble, Mr. Rockett having been appointed temporarily to assist Mr. Hudson in the work of the Kalgoorlie District. The second, Mr. Briggs, late Inspector of Mines at Collie, severed his connection with the Government to take up the position of Manager of the Collie Proprietary Coal Mines, Ltd. Up to the end of the year these vacancies had not been filled, though applications for both are under consideration.

Inspectors' Reports.—Hereunder are reports from the various Inspectors of Mines on the progress and development of their respective districts during the year 1912:—

CENTRAL GOLDFIELDS.

Mr. W. M. Deeble, Inspector of Mines, reports as follows under date 25th March, 1913:—

"I herewith beg to submit my annual report on the Peak Hill, Murchison, and Yalgoo Goldfields for the year ending 1912.

"The usual mines' inspections have been made, which entailed a considerable amount of mileage being covered. With the exception of the Great Fingall G.M. the mines have not reached any depth, and with that exception the ventilation in the mines is good. The only Districts in which rock drills are being used are Yuin, Cue, and Meekatharra. At Meekatharra sprays are used to keep down the dust when the rock drills are being used. The lighting of plats underground is being gradually improved, and there is still room for improvement in some mines. The main argument I have to meet is that, because it has been considered a good mining practice to light a plat with a candle in the past, it should still be considered sufficient.

"Care of explosives and attention to change houses have been fairly well attended to, and it is only in mines in the early stages that I have any trouble with the latter.

"I regret to report that there has been a falling off in the gold yields, but as two Government mills have started crushing for small shows, which may develop into larger mines during the coming year, the prospects are really not so bad as the gold return figures would indicate.

"In the North of the Peak Hill field a mill was started, and the crushings put through gave, on the average, some excellent yields, but as the water supply ran out the mill could not be kept going continuously. It has been proved that a good supply of water can be obtained near. The second mill is at Payne's Find, which I will mention further on.

"Egerton is situated, by road, about 100 miles North-West of Peak Hill. There is only a Government mill at this place at present, which crushed the following up to December, 1912:—

				ozs.	dwts.
July ...	Home Rule ...	101 tons	...	145	
August ...	New South Wales	4 „	...	6	
	Messengers Folly ...	16 „	...	6	15
	Hibernian	198 „	...	156	5
September	Egerton Consols ...	219 „	...	140	
October ...	Mountain View ...	170 „	...	100	6
November	P.A. 84	60 „	...	23	
	Trafalgar	32 „	...	11	14
	P.A. 100	10 „	...	20	15
	New Moon	42 „	...	61	15
December	Bill Bailey	60 „	...	15	2
	Excelsior	182 „	...	108	3

"There is really not enough work done to prove anything yet, and most of the prospectors are not in a position to open up their "shows" systematically. To the East of where the present "shows" are being worked is some very nice looking country, and should be worth testing.

PEAK HILL.

"Mining has been very quiet in this District during the year, although there have been some promising finds made. At Mt. Pleasant, the "show" being worked by Dowd and party seems to me to have an excellent chance of becoming a mine, if money were spent to open it up properly.

"At about six miles, at a place known as the Slate Hole, a very promising find was made, but the prospectors left after dollying what gold they could get close to the surface, and working the alluvial out.

"Ruby Well is situated about 24 miles from Peak Hill and about 60 miles by road from Meekatharra. When I visited this District last, there were six parties working on reefs and a number of dry-blowers working alluvial ground. Two parties have taken crushings to the mill—one crushing from a mine called Trafalgar, of eleven tons, returned 5ozs. 7dwts. per ton over the plates, and a crushing of 20 tons from Lease 370P gave a return of 50ozs. 17dwts. The others were on gold, but the distance was too great

for them to take their ore to the nearest mill. A number of prospectors report that good prospects are to be obtained in the surrounding districts, but the season was too dry for them to stay out to prove anything.

MEEKATHARRA.

"The most practical mining work in the Murchison Goldfield is being carried on in this district. The Fenian G.M. holds pride of place up to the present. The ore being worked in the mine is very similar in appearance to the ore in the Kalgoorlie mines. The tonnage treated for the year from this mine was 28,991 tons, which returned 64s. per ton.

"Ingliston Consols Extended G.M.—The main shaft on this mine is 735 feet deep. The prospects for the coming year seem good. The manager estimates there are 60,000 tons of ore developed, worth 11½dwts. per ton. More stampers are to be installed, together with wilfley table and cyanide plant to treat 900 tons monthly. The present motive power is supplied by an 80 h.p. Crossley suction gas engine, with steam for haulage. From the prospects obtained in the bottom level, which is 621 feet deep, and the lode about 10 feet wide, it seems that the ore is keeping its width and value in going down.

"Electric light and bells are being put on the surface and underground. The development work done during the year is as follows:—Driving 518 feet, winzing 201 feet, rising 202 feet, crosscutting 36 feet.

"Ingliston Extended G.M., Ltd.—The main shaft on this mine is now 440 feet deep, and the following development work has been done during the year:—Rising 216 feet, sinking 134 feet, winzing 223 feet, driving 597 feet, crosscutting 490 feet, making a total of 1,660 feet. The lodes in this mine are in disturbed country, but the 7,857 tons of ore crushed were of the high value of 49s. per ton.

"Commodore G.M.—The deepest level in this mine is 300 feet, and the lode matter down to that level is mostly of an oxidised nature, which will partly account for the very low mining and treatment costs, which I believe are the lowest in the field. The milling costs for the last six months were 3s. 3½d. per ton, and the cyaniding costs 2s. 3½d. per ton. The milling plant consists of ten heads of stampers, driven by a 50 h.p. Hornsby suction gas engine. The development work done is:—Crosscutting 256 feet, driving 254 feet, winzing 77 feet, rising 164 feet, making a total of 751 feet.

"Queen of the Hills G.M.—This mine was shut down during the early part of the year; work was started again in May, 1912, and during the remainder of the year, most of the time was occupied in erecting machinery. As the directors estimate that there is a profit of £90,000 in the ground devoloped, this mine should add considerably to the returns from this district during the coming year. A Double No. 1 Holman Pneumatic Mill has been erected, with a tube mill 16 feet by 4 feet as an auxiliary crusher. The ore is to be crushed in cyanide solution without amalgamation, and the pulp, after agitation with cyanide solution, filtered in a sixty-frame filter vat, the residues to be pumped away to the dam. The plant is designed to crush 3,600 tons per month. The power will be supplied by a 220 h.p. Kynoch gas engine. In May last year a new shaft was started, some distance South of the old one, and this has been sunk to a depth of 369 feet. From this shaft, connections have been made to the old workings, and it is stated that all future work in the direction of development and mining of ore will be carried out from it.

"Globe G.M.—This mine is situate about four miles South of Meekatharra, and is being worked by a small party. Three shafts have been sunk, two are 117 feet deep with a drive connecting. A new shaft is being sunk which it is intended to sink to 250 feet, and a crosscut put out at 230 feet depth to cut the lode. As far as I can learn, the returns from this mine are 715 tons for 954ozs. It seems that the mining of ore of this grade has not induced anyone to take up some of the surrounding country.

"There are a number of other small mines in and around Meekatharra, any of which may develop into good mining properties if they are first put on a fair footing.

YALOGINDA.

"Mining at this place has been very quiet during the year. The Romsey G.M. seems to be the main hope of the place at present. The lode in this mine is large and easily worked, and it is only necessary to obtain low grade ore to meet expenses. The Chunderloo mine is being given a trial again, but there has not been sufficient development work done to prove anything.

NANNINE.

"This district is also very quiet, but the indications are that there will be an improvement at an early date. The Nannine G.M., which is the oldest mine on the Murchison, is now only 200 feet deep, and has been practically full of water during the past year. The returns from this mine are 21,985 tons of ore for a return of 36,639ozs. of gold.

"The management is now showing signs of doing something of a practical nature. A ten-head mill has been erected, together with ore bins, elevator, rock breaker, Wheeler grinding pan at the bottom of each copper table, concentrating tables, and electric light. The power will be supplied with a 30 h.p. suction gas engine. The manager reports that he intends sinking deeper during the coming year.

"At Quinn's and Gabanintha, the various shows are being worked by small parties. Both the New Brew and the Mountain View were showing fair prospects on my last visit, but in neither case was sufficient development done to prove anything.

"At Quinn's 2,618 tons of ore were milled from the various shows, but I cannot get the returns from each show, as this district is of a "patchy" nature, and when gold is struck, a large proportion of it is taken out by dollying and the remainder of the ore is sent to the mill. Taken generally, it is a good district for the working prospector.

"The country from Quinn's to Barrambie, a distance of about 60 miles, looks worthy of a trial, but only two mines have been doing anything during 1912; the Luptons G.M. has developed 1,640 feet, and during the same period 3,765 tons of ore was treated and the average value was 61s. per ton. The deepest level in this mine is 200 feet.

"Although there are a number of prospectors at work, there is nothing worth reporting between Nannine and Cue.

CUE.

"Hidden Treasure G.M.—The owners of this mine were very unfortunate during the past year. The mine seemed to be in a good paying stage when a bar was met with which had cut the reef off, and as the bar

proved to be 43 feet through and had thrown the reef to the right, it was the cause of considerable expense and delay. When the reef was picked up again a crushing from it proved to be highly payable. The ground North and East has been taken up and is being worked, and the prospects seem encouraging.

"A small show, known as the Bob Bell, situated close to the town, has been giving excellent returns, 397 tons, 690ozs., but is not likely to employ much labour while in the hands of prospectors.

"During the latter part of the year, tin ore was discovered at different places at Coodardie and Poonah. All the lodes that I saw contained only low grade ore, but I consider the continuation North and South well worth prospecting further. Wolfram was also found, and of higher value than the tin. Beryls were also discovered within a few miles of the tin discoveries, but although a large number were found, none were of value as gems.

Day Dawn.

"A considerable amount of development work has been done in the Great Fingall G.M., and this work has been slow owing to the number of times the material has to be handled. The lowest vertical depth at which work is being carried on is 2,342 feet, which is equal to 2,692 feet on reef. The development work carried out in the lower levels is reported to be payable in the North of No. 4 winze. The manager reports that 71,603 tons were crushed during the year (short tons), and the following results were obtained:—

	ozs.
Mill	13,338.118
Concentrates	3,014.126
Cyanide sands	3,069.877
Filtering slimes	3,738.457
Accumulated slimes	2,494.797
Sands	5,260.349
Slag	97.433
	31,013.157 ozs.

"The above-mentioned tonnage includes 4,426 tons of Custom ore treated:—

Custom ore	2,887.856
Purchased concentrates ..	939.661
	3,827.517 ozs.

"The average number of men employed during the year was 317.

"The Creme D'or mine, which is being worked by Messrs. Cairns Bros., has crushed 246 tons for 164.74 ozs. There is a nice body of stone in this mine, and larger tonnage should be crushed during the coming year.

"A few prospectors are working at various places between Day Dawn and Mt. Magnet, but there is nothing new at any place worth recording.

Mt. Magnet.

"The two large mines in this district shut down at the end of the year, but the discovery of a number of rich patches have made the total amount of gold won during 1912 higher than the previous year. All the results have been published, and it is hardly worth repeating them here.

Goodinow.

"This place is situated about 100 miles South of Mt. Magnet, and is also known under the name of Payne's Find. The district promises to give good returns, and the yields have been very satisfactory. A five-head Government mill has been erected and has been kept supplied with ore from the small shows being worked, several of which I expect will develop into mines in the near future.

"During November and December, the following crushings were put through:—

No. of Lease.	Mine.	Tons.	Smelted Gold.	Average.
			ozs. dwts.	ozs. dwts. grs.
601 ...	Pansy	121	31 0	0 13 9
613 ...	Orchid ...	75	366 8	4 17 17
616 ...	Oversight ...	42	150 10	3 11 16
626 ...	Jacamar ...	58½	19 4	0 6 12
627 ...	Carnation North	19	51 10	2 14 5
P.A. 237	Agnostic ...	11½	25 10	2 5 0
P.A. 241	Pansy North ...	26	20 2	0 15 11

"On my last visit I examined ten other shows which had equally good prospects. There was also another discovery made about four miles South, which was rich at the surface but small in size, and the country rock hard.

Field's Find.

"At Field's Find the old tailings were being treated by Cyanide, otherwise there is nothing doing. At about seven miles South some good prospects were being obtained when I visited the place last, but very little had been done on the reef to prove the length of the shoot.

Yalgoo.

"At Yalgoo proper mining has been practically dead during the year. At Melville, which is about twelve miles away, a new find was made, and a small trial crushed which returned 1oz. 14dwts over the plates. This trial was taken out when sinking on the reef. Another new find was reported to have been made at Mugga Mugga Hill, South-West of Gu'lewa. This place is situate about 40 miles South-West of Yalgoo. I have not been able to visit the place since the report.

Yuin.

"There is only one mine doing practical work in this district, and is known as the "Royal Standard" G.M. This mine has been worked up to the present with an old battery, but now it is proposed at once to erect a new 20-stamp mill, suction gas engine, and a slimes treatment plant. The ore treated is reported at 5,871 tons and cyanided 1,346 tons, and the average of the developed values 50s. per ton. The bottom level is 270 feet in depth. During the year 837 feet of development work has been done.

Northampton.

"During the year I paid two visits to the Baddera lead mine. The main shaft was down 305 feet at the end of December and two levels in, at 150 feet and 234 feet respectively. The mill, working seven months only, crushed 11,098 tons of ore and produced 1,927.08 tons of lead concentrates, containing 1,330.82 tons of lead, 46.9ozs. of gold, and 977.47ozs. of silver, of a gross value of £24,699 11s. 5d.

"In conclusion I would point out that I have not had time to go over this large district many times, as the mines are very scattered. From Yuin to Meekatharra

is 245 miles, and mines are being worked at Egerton, which is 180 miles further. When we consider that mines are working at short intervals for over 400 miles and the country not half prospected, it can be seen that there are great possibilities for mining in this large undeveloped area.

EAST MURCHISON GOLDFIELD.

Mr. H. Colbran, Inspector of Mines, has forwarded the following report under date 8th March, 1913:—

"The work for the year has been comprised of 185 mine inspections, 3,289 miles of travelling, 11 reports on applications for Government assistance, investigations into accidents and general office correspondence.

"During the year mining in the East Murchison Goldfield for the most part has been dull, and although many small prospecting shows have maintained their average outputs and values and several new ones have commenced operations, these have in no way made up for the closing down of such large producers as were the Vivien, Waroonga, and Gwalia Consolidated mines.

"The Lawlers District during the year from 9,162 tons of ore has yielded 7,338 fine ounces of gold, a decrease compared with last year of 19,874ozs.

"The Sandstone District shows a marked increase, as I expressed reason to hope it would in my last year's report, having yielded 84,087 fine ounces of gold, to which the Youanmi Gold Mines, Ltd., contributed 22,463ozs.

"The Wiluna District has not varied much from last year, having yielded 7,725ozs., a decrease on last year's yield of only 104ozs.

MINING.

"Lawlers.—There are but two mines in this centre at present being worked on anything more than a prospecting scale, viz., the May Be and the Sunrise.

"The May Be is sunk to 85ft. in depth and a N. and S. drive is put in at 80ft. and stoping is being done over these drives over an average width of about 12ft. of quartz of about 6dwts. per ton value.

"This mine during the year from 1,450 tons yielded 391 fine ounces of gold. The owners now intend to sink for an adequate supply of water, and having found one to erect on the lease a suction gas engine and battery, in order to save present cartage and minimise charges for treatment.

"The Sunrise has a shaft sunk on the reef to a depth of some 400 feet and also a hanging wall reef of about 8ft. in width has been opened up to a depth of 100ft. The mine has yielded 415 fine ozs. of gold during the year from 2,205 tons. It is already equipped with a boiler, winch, and pumps, and preparations are now being made to add a suction gas plant, 5-head mill and cyanide plant.

"Of the other smaller shows in the district nothing new can be said.

"The Vivien Gem ceased mining operations after the February clean up, and during the year from 219 tons produced 150ozs. of fine gold.

"On the Vivien mine tributers have been taking out a pillar of stone overlying the now disused inclined shaft, and in two clean-ups representing 392 total tons realised 164¼ozs. of fine gold, which paid well. A considerable quantity of stone still remains to be won.

"The Golden Swan, where the stone of value has become very small, is now under exemption, but during the year crushed 110 tons for an average return of 1oz. per ton.

"At the Donegal and Queen several tribute parties have worked, some of whom have obtained payable crushings.

"Sandstone and District.—This district has had a very prosperous year.

"The Oroya mine, which 12 months ago was not looking too promising in the bottom levels, during the year has opened up previously unknown chutes and has had a continuous run and treated 57,590 tons of ore for a return of 24,623 fine ounces of gold.

"The Black Range Mining Company's property also has been well and satisfactorily developed during the year. The gas engines and slimes plant have been the means of increasing economy and extraction and the mine during the year from 30,276 tons of ore has produced 21,820 fine ounces of gold.

"The Royal Oak was also taken over by the above company in July and after a big battle against running ground and a heavy make of water, which latter is now being handled by a large Cornish lift, the reef has been reached and is being driven on.

"The Sandstone Gold Mining Coy., after treating during the year 6,452 tons of ore for a yield of 3,065 fine ounces, sold their property to the Oroya Black Range G.M. Coy. in November, and will now be worked in conjunction with that mine, being a continuation of the same reef.

"The smaller producers of the Sandstone district have had average returns during the year, but no deeper work has been done, nor has anything new of interest been opened up in them. Their depth is in most cases confined to water level, but now that the Royal Oak at "Hancock's" is being continuously pumped, the water level of the vicinity may be lowered and thus enable many adjoining smaller claims to explore deeper ground than they have previously been able to work.

"A few of the latest returns of some of these smaller shows may be of interest:—

"The Faughaballah last crushed 240 tons for 224ozs.

"The Kohinoor North last crushed 53 tons for 41ozs. (Both these mines would benefit by the lowering of the water level in the Royal Oak shaft.)

"The Lady Ellen last crushed 14 tons for 75ozs.

"The Comedy King last crushed 208 tons for 354ozs. from the 140ft. level.

"The Trafalgar last crushed 40 tons for 80ozs.

"The Breakaway last crushed 69 tons for 79½ozs.

"Lady Seddon has just cleaned up a crushing from above the 50ft. level, yielding 25dwts. over the plates and 10dwts. in the sands.

"The Nungarra Junction, lately known as the Wierimina, last cleaned up a parcel of 120 tons for 81ozs. over the plates, and it is intended to instal an oil engine, winch, and pump to enable cheaper work to be done on the mine.

"The Black Range West G.M., on which a lot of dead work has been done in order to exploit the reef worked on the adjoining lease by the Black Range Mining Coy., after driving on that reef from an underlay winze from the main vertical shaft has eventually holed through into the Black Range Mining Coy.'s south workings and a crushing of 142 tons, broken from this development work averaged 8½dwts. per ton by amalgamation and left 2½dwts. per ton in the sands. The mine is now, however, under exemption.

"At Maninga Marley the Havilah mine is almost entirely worked out, only a few tributers being now on the mine. During the year this mine from 2,860 tons yielded 2,966 fine ounces. On the adjoining lease the Havilah Development Syndicate are sinking a 5ft. 6in. x 7ft. 4in. vertical shaft to cut the Havilah reef at a depth of about 280 feet, and if it there proves payable, to continue the shaft on the pitch of the chute. The shaft is down to date some 220 feet and is timbered to about 160 feet.

"The Maninga Marley G.M. are sinking a new shaft and have cut the reef at 200 feet, but have not yet tested it at that depth for width and value but are still continuing the sinking.

"Youanmi.—The Youanmi Gold Mines, Ltd., has to date proved to be a very valuable property, and during the year crushed 53,236 tons for a return of 22,462 fine ounces of gold. The mine is equipped with an up-to-date and very compact plant, comprised of a 20-stamp mill of 1,250lb. stamps, No. 1 Krupp tube mill and slimes plant.

"On the northern end of the above mine's lode the United still turns out regular payable parcels and is the main support of the State Battery, and last crushed 835 tons for a return of 234ozs.

"At Curran's Find the chief mine is the Red, White and Blue (G.M.L. 641B) on which three parallel reefs have been opened up extensively. This mine has just obtained from the Government a loan of £1,500 to enable a 5-head mill to be erected. This mill will be available for public crushing purposes, and as there are four or five other very promising claims, on which a fair amount of work has already been done, in the immediate vicinity, it will no doubt be kept fully employed and may be the means of opening up another important mining field.

"At Birrigrin at date of my last visit the only work being done was on the Pelerin Gold Mine, where an underhand stope was being taken out below the 134ft. level. This mine has been a very consistent producer and from 2,809 tons of ore has yielded 5,058ozs. of gold. At date of my last visit (10th November, 1912) the owner intended sinking the shaft to about 200 feet in depth and there opening out another level.

"At Montague the two producing mines, the Caledonian and Montague Boulder are now closed down owing to falling off of values. The stone from both mines was crushed at the latter mine's battery which during the year crushed 962 tons for a yield of 777ozs. of gold.

"At Wiluna the Gwalia Consolidated mine has not been worked during the year except by a few tribute parties in the oxidised zone. Experimental work has, however, been continuously carried on with a view to finding a payable method of treating the sulphide ore. The ore has been roasted with salt and the gold, antimony and other metals driven off in the form of oxychlorides which have been caught on tubular flannel filters, shaken down and either cyanided or smelted. It is considered that this method of treatment may solve the sulphide problem at Wiluna, and if it does Wiluna may look forward to a very prosperous future, because in addition to the Gwalia Consolidated sulphides being then enabled to be profitably worked, the cutting of those of the Bulletin, Indicator, Moonlight, Adelaide, and Ullina, which are similar in character, will no longer as at present represent the lowest point to which these mines can be worked. In June last the Moonlight G.M. Co. commenced crushing operations with their own 10-head mill. The plant consists of the mill, a 100 H.P. National gas engine, friction winch, and cyanide plant. About 1,200 tons of ore per month are crushed. The main shaft, at date of my last visit (20th October, 1912) was down to a depth of 95ft., and vigorous development work was being carried on.

"On the W.A. stoping was being carried on at the 200ft. level by a party of tributers.

"The Monarch North was being worked by prospectors at a depth of 75ft. and last crushed from that depth 55 tons for 23¾ozs. of gold.

"The Caledonia also was working and last crushed 21 tons for 16ozs. 18dwts., and several other small shows during the year have periodically turned out payable parcels.

"At New England the claim originally known as Ive's Reward is now taken over by a company and is known as the May Queen Reward, Ltd. The reef, which runs N.E. and S.W. and underlays to the S.E., at date of my visit had been exposed on the surface by costeens and open cuts for a very considerable length. The reef is in granite country and dips at a steep angle of depression. A 5-head mill was erected as a sort of bulk sampler on the mine (preparatory to putting up a complete plant), but from what I can learn results of crushings have proved very disappointing to date.

"At Mount Keith the various claims on the fine line of reef are looking well. After several attempts to find an adequate water supply for the State Battery now being erected a start was made to deepen Pearce's shaft, and I believe an ample supply has now been cut.

There is now a large tonnage of ore at grass awaiting treatment and the completion of the State Battery is anxiously looked forward to by the prospectors of the field. The last crushing from this field was from the Aurora claim which crushed 23 tons for 144½ozs. of gold.

"At Kathleen Valley and Sir Samuel mining is exceptionally dull.

"Bluey's Release at the latter centre has, however, during the year, from 228 tons of ore, yielded 160ozs. of gold.

"At Darlot mining is much as it was last year.

"The King of the Hills from 319 tons yielded 115½ozs. of gold.

"The Ballangarry from 294 tons yielded 94ozs. of gold.

"The Zangbar from 290 tons yielded 85ozs. of gold.

"The Amazon from 23 tons yielded 28½ozs. of gold.

"At Wilson's Patch the Great Western mine has worked somewhat intermittently during the year and appears rather too poor to be profitable.

"At Mount Clifford the Famous has had a successful year and the Victory were at date of my visit erecting a 5-head mill with which to crush their own ore.

Accidents.

"During the year there were reported to me 20 accidents causing injury to 20 persons. Of these one was fatal, three were serious and the remaining sixteen were of a minor character.

"The fatal accident occurred at the Northern Mines, Ltd., at Lawlers, to Felix McCarthy whilst laying a set of rails in the leading cut of an excavation in a dump of slimes. It happened on January the 21st after

a continuance of hot and humid atmosphere. As McCarthy was about to lay a set of rails in this narrow cut, which was 18ft. deep, suddenly a huge mass of slime slid from one side into this cut and pinning McCarthy against the opposite wall of the cut crushed him to death. Of the 20 accidents reported, one was caused by explosives, six by falls of ground, eight miscellaneous underground, and the remaining five on the surface.

GENERAL REMARKS.

"During the year the provisions of the Mines Regulation Act have been well complied with throughout the goldfield, there have been no prosecutions, and any complaints found to be genuine have been readily remedied.

"Although during the past year mining in this goldfield has been at a comparatively low ebb, yet with the near approach of the completion of the Mount Keith State Battery, the prospects of 'Curran's Find' and chiefly the probability of the successful treatment in the near future of the Wiluna sulphides, I consider the goldfield has yet distinctly bright prospects."

MT. MARGARET GOLDFIELD.

Mr. S. Cullingworth, Inspector of Mines, reports as follows on 17th February, 1913:—

I have the honour to submit my annual report on the Mt. Margaret Goldfield and that portion of the North Coolgardie District included in my Inspectorate.

The year has not been marked by any startling discoveries, but in several localities in the districts alluded to steady progress has been made.

NORTH COOLGARDIE-YERILLA.

"There has been a revival of mining at this centre, the 'Yerilla King' mine having opened up a good quartz reef at 125 feet in depth; this has been driven on for 380 feet, and has been proved to be of good grade; 767 tons crushed yielded 985ozs. of bullion over the plates. The success attending this enterprise induced the adjoining owners on the south, 'The Viola,' to sink a shaft on the course of the reef, which they cut at about 125 feet, the values were payable and the vein is being opened up.

"Other parties are now prospecting in the vicinity.

KOOKYNIE.

"The 'Lubra Queen' has had a number of difficulties to contend with, chiefly on account of the decomposed nature of the country rock on the hanging wall, and the heavy flow of water.

"The main underlay shaft has been sunk to about 200 feet and securely timbered, and divided into a three-compartment shaft. A level has been driven at the bottom about 150 feet southwards, but the values are, I understand, not up to expectations.

"The shoot of good stone which was mined in the upper level was known to be pitching southwards, so it is probably still further ahead. During the year a five-head battery, with rockbreaker and feeder, was erected.

"The 'Altona' has been re-taken up, and equipped with a winding plant, and with head-frame and bin. The owners are now prospecting at water level, and the prospects appear favourable.

"The 'Altona South' is being worked by tributers, who have raised several parcels of high-grade stone during the year, the last crushing of 82 tons yielding 126ozs. of bullion over the plate.

"The 'Lone Hand,' situated about 14 miles west of the town, is being worked by a party. The shaft has been sunk to about 150 feet, and the reef driven on at this depth for about 80 feet. The reef at this point is about 4 feet wide, and a crushing of 146 tons yielded 136ozs. bullion, exclusive of residues.

"The 'Golden Butterfly,' situated about 14 miles north-west of the town, has been taken over by an Adelaide company, a ten-head mill, with rock-breaker and self-feeders, and cyanide plant has been erected and is now in active operation. An underlay shaft has been sunk to 350 feet and three levels put in. There is a large lode formation of from 8 to 15 feet in width. Crushing was started towards the end of the year, the tonnage treated and yield being as follows:—5,820 tons for £5,894. The ore makes a large percentage of slimes, about 3,000 tons now await treatment. The assay value of same is, I understand, 25s. per ton.

"The company has had to lay down a pipe line, some 2½ miles in length, and erect a pumping plant.

LINDEN.

"There has been a fair amount of progress and activity in this District.

"The Devon Consols Company has erected a compact plant, consisting of a five-head mill driven by a Suction Gas engine, the residues being treated by a Vacuum Slimes plant, which has the necessary complement of grinding pan and agitators. A main shaft has been commenced and sunk to 50 feet, and is equipped with poppet head and friction winder, driven by a gas engine.

"The vein has been traced on the surface practically the whole length of the lease, and, although small is, I understand, of high grade. Water is encountered from the surface.

"At the "Democrat," the old underlay shaft, which was small and inconvenient, has been cut down to 250 feet and made into a serviceable three-compartment shaft.

"The 'Great Carbine' has sunk a vertical main shaft, divided into hauling, pump and ladder compartments, to 120 feet, and the owner is cross-cutting for the reef at 100 feet.

"Several new discoveries were reported during the year, and the reefs so discovered have a promising surface appearance. There are many small parties of men working their own leases or prospecting areas on this field, and the grade of ore obtained is usually good.

MT. MARGARET GOLDFIELD.

"Sons of Gwalia G.M., Ltd.—The usual amount of development work has been carried on. The footage for the year being 7,755 feet, including driving, cross-cutting, rising and winzing, also 3,593 feet of Diamond drilling has been done.

"The depth of the shaft is 2,720 feet on the incline, and the depth of lowest level, No. 19, is 2,652 feet. A great improvement in ventilation has been effected by a more direct connection between the upper and lower levels at the south end of the mine. A system of electric return signals has been installed, and a powerful modern winding engine is now in course of erection.

"The tonnage treated for the year was 155,603 tons, the value of the gold recovered being £248,083. Crush-

ing is now done in cyanide solutions, and amalgamation has been abolished. The stamps are driven by steam power. The pans and vacuum plant are driven by electricity from generators driven by two gas-power engines.

"Several prospecting areas have been taken up in the vicinity of the Gwalia State School,—a schist formation, carrying veins and bunches of quartz, is being worked; small trial crushings have been taken out, the results of which are payable, but an insufficient amount of work has been done for any definite opinion to be expressed.

"The 'Trump' mine has changed hands, and is now owned by an English company. Development work has opened up a continuation of the rich stone obtained by previous owners, and which was supposed to have been cut off by a fault, a drive of 130 feet in length has been extended south of the fault, in stone, which the owners anticipate will yield high results. A parcel of 36 tons was crushed for a yield of 250ozs. over the plates.

"The 'Gold Blocks' has been steadily worked by the owner. The main underlie shaft is 250 feet in depth, at which level drives of 100 feet S.E. and 100 feet N.W. have been put in, and stoping has been carried out from along this level. The average width stoped is about four feet. The tonnage so far raised and crushed from this level being 3,995 tons for a value realised of £7,908. The ore contains a fair percentage of sulphide iron pyrites, but so far no attempt has been made to concentrate this mineral, although it is known to carry gold; the ore occurs in lenses and has been worked in the upper levels at intervals for some 500 feet.

"Of the other mines in the locality, working small veins, the following results obtained towards the end of the year, give an idea of the grade being obtained:—

"The Main Reefs	..	16.5 tons for 79.5ozs.
"The Ping Pong ..	..	25 tons for 61.5ozs.
"The Rajah ..	..	19 tons for 98.8ozs.

"The Malcolm Prospecting Company are working their mine, the North Star, at Malcolm, with fair success. The main shaft at this mine is 375 feet in depth, the bottom level, No. 4, is driven at 340 feet in depth. From the south end of this level is an incline winze 190 feet in depth. A drive on the reef from the bottom of the winze has been put in 336 feet in length. The reef is erratic, but will probably average 24 inches in width. The management estimate there are 3,575 tons of stone ready for stoping. The ore treated during the year amounted to 3,522 tons for a return of 2,365ozs. The Company has crushed a small quantity of stone for the public, one parcel of which is notable, viz., the Black Chief, at Randwick, 15 tons which yielded 192ozs. gold.

"Morgans has had a very quiet year. Work on a limited scale has been restarted on the Westralia Mt. Morgans, where the slimes plant has been re-modelled and a start has been made to treat the accumulated slimes. The Mt. Margaret Reward and adjoining leases have been quietly worked by their owner, who has opened up at 70 feet in depth a promising looking reef, from which a trial crushing of 12 tons yielded 30dwts. over the plates. There are numerous veins or lenses of ore on the property, but none of them in the past were systematically worked, parties of tributers simply gouging out the richer patches.

"At Laverton, the closing down of the Lancefield has been a heavy blow to the district. The Craiggie More, too, is idle, pending an effort of the owners to float it in London. The Augusta re-started work on a small scale.

"The Ida H. G.M.—Development work for the year totals 1,423 feet; the deepest level is 1,100 feet. The amount of ore treated was 13,607 tons realising £41,472.

"Burtville.—At the Golden Bell North the main shaft has been continued to about 280 feet and a level opened up at 270 feet, from the stopes above which 329 tons were treated for a return of 449ozs. gold. The mine is equipped with a gas engine and producer, and the hauling plant is a friction winch.

"At the Nil Desperandum, several high grade parcels of stone were treated from above the 100ft. level.

"The Specimen Hill mine has been assisted by the Government to locate the reef at 200 feet. In the upper levels the reef, which will average about 2ft. wide, has been worked for about 500 feet in length, and should the owners be successful in picking it up at 200 feet, the mine should enter a fresh era of prosperity.

"Preparations are being made to re-work the Golden Bell which has been idle for some two years.

"There are several parties of prospectors working in the district between Burtville and Mt. Weld.

"At Erlistoun, the Mulga Queen mine has, I understand, been floated in London. Work is to be re-started without delay."

NORTH COOLGARDIE GOLDFIELD.

Mr. Greenard, Inspector of Mines, reports on 10th March, 1913:—

"I have the honour to submit my annual report for the information of the Hon. the Minister for Mines on the administration of the 'Mines Regulation Act, 1906,' on the Menzies, Ularring, and Comet Vale districts (North Coolgardie) and also Broad Arrow, together with portion of the North-East Coolgardie Goldfields.

"A continuous and systematic inspection has been maintained throughout the year 1912 of all the mines situated in the above areas.

"A strenuous enforcement of the Act for the safety of every man employed in and on mines has been carried out.

"The accidents during the year have been carefully inquired into, and so far nothing has occurred that calls for special mention.

"There are very few foreigners employed in the districts under my control; the few that are have been examined and passed, being able to speak English satisfactorily.

"The filling of stopes has been strictly enforced.

"The storage of dynamite above and below ground has been carefully attended to and proper precaution taken for safety.

"The burning speed of fuse is posted on all mines.

"The cutting and re-shoeing of ropes every six months or oftener is carried out on every mine, and the lubricating of same is rigidly enforced.

"Safety cages, hooks and chains are carefully inspected and tested in accordance with the "Mines Regulation Act, 1906.'

"Special attention is given to ventilation, sanitation, and temperature of all underground workings. Any complaints received during the year from mine managers, secretaries of workers' unions, and the

individual have received prompt attention and due care taken not to divulge from whence the information was received.

"Proper travelling ladder-ways have been insisted on in all mines.

Drains have been advised on several mines to carry off any surface flood water that might arise through any sudden storm.

"There have been no winding engine accidents during the year.

"There have been no Sunday labour permits issued: two or three mines have done some work on a Sunday without a permit. The work consisted of filling stopes, repairing shafts, etc. The reason that no permit was issued was that I was not available to issue it; the work being important and urgent could not be delayed.

"In conclusion, every effort is made to make the work of a miner in the districts under my control as safe as it possibly can be.

MINING.

"The Menzies Mines (Lady Shenton) has continued to employ seven or eight men underground and is being worked below the 300ft. level where an improvement in value and consistency of lode has occurred. The developments in this property are more promising than they were in previous years.

"The Balkis G.M. has continued to develop satisfactorily. The development below the 400ft. level is promising; good values continue to be mined from above the 400ft. level. This syndicate has now acquired the Friday lease which will add considerably to the life of the Balkis mine above the 400ft. level.

"The Warrior has been worked by tributors for very good returns. This mine is a very consistent producer. The Sawyer Bros. continue to work the Lady Harriett, which is equipped with a producer gas engine and 5-head battery. The Balkis mine is also equipped with a gas engine and battery. These two plants do most of the public crushing for the district.

"It must be admitted that prospecting is not so vigorous as formerly in Menzies district; still the Crusoe, Lady Sherry, Surprise, Coronation, Alpha, Stirling, and several other leases are being prospected and good work is being done.

"At Picton the Maranoa lease has practically stopped; the old Goodenough lease has again been repegged and is being re-tested; both these leases are worth another trial and there are several propositions in the immediate vicinity worth further prospecting.

"The Menzies Consolidated Mines, Ltd., at Woolgar are being steadily developed. At the 14 level the lode has improved in size; the main shaft is now almost down to the 15 level (about 13 or 14 hundred feet). This mine has never paid a dividend, but, if the present developments will continue, there are possibilities that such may happen.

"The Craigynos, situated at Woolgar, has again been pegged and is being systematically developed. This lode is one of the most promising propositions in the district, and if development work is continued on proper lines I fully expect to see a permanent mine opened up in the property.

"Comet Vale.—The developments in this centre in the Sand Queen and Gladsome mines have been consistently good down to 400 feet, where both mines are opening up on the same level for ventilating and other necessary purposes.

"The Happy Jack mine is also doing good development work.

"The Tunnel mine is being worked by Mr. Maher. This is a large low-grade proposition and requires capital for full development. Small crushings of picked ore are being taken from the area from time to time.

"Goongarrie.—Several parties are prospecting this old goldfield. During the year Mr. Kernan found a nice pocket near the old Boddington lease of between two and three hundred ounces. Mr. Campbell also got a nice 'dab' near the old Caledonian lease. This goes to show there are still large quantities of gold to be obtained if one only knew where to look, and had just a little bit of luck.

"Davyhurst.—The Golden Pole has been worked by a party of tributers for unsatisfactory returns for the year, but developments are reported to be promising.

"The Great Ophir, the Great Israel, and the Oasis and Eagle leases are large low-grade propositions. There have undoubtedly been great efforts made this year to work these areas. From the work done a good deal of information has been obtained and the future equipment and development of these properties will prove them absolutely one way or the other.

The Melrose, Pirate, and Murray and Haye's leases have continued to turn out small crushings of high grade ore, and the developments are promising for good small crushings during the present year.

"Mulwarrie.—This centre is suffering from want of attention from the prospector. During the year very little development work has been done, but it should not be forgotten that this has been a rich little district, and like Goongarrie and other districts there are immense possibilities for the prospector who understands his work.

"Mulline.—During the year most of the work has been centred on the Young Australia mine owned by T. Hoyle, Harwood and party. An average of between 25 and 30 men has been employed, and the returns were 1,769 tons crushed for 4,004.28 fine ounces—over £16,000. The reef is small but remarkably consistent in high values. There are also several small parties testing small reefs at Ularring and Mulline, small payable crushings are obtained from time to time. The Lady Gladys is being worked on tribute.

"The Ularring district contains some fine auriferous country in which there are known to exist large lode formations, but the cost of crushing has reduced the whole area practically to fossicking for high grade ore.

"Mt. Ida.—The Forest Belle lease has continued to develop satisfactorily and is now being opened out at the 200ft. level; the reef is large and carries high values. The Unexpected and the Unexpected South are being slowly opened up: two or three good crushings have been won during the year, but developments are not being pushed ahead with that amount of vigour that this large auriferous ore channel warrants. Mt. Ida has a large auriferous area in which exist known lode formations of a highly promising character insufficiently tested.

"The New Find, situated about 30 miles in a south-westerly direction from Mt. Ida and now being worked by Thomas, Morrison, and party, is developing well. There is a long line of auriferous formation; the reef is considerably broken along its course but it has a width of from 5ft. to 10ft. in various places and the values are good, upwards of two

ounces per ton. One hundred and fifty tons are being carted into Mt. Ida to be crushed at the State Battery, and an excellent return is expeected.

"Broad Arrow and Paddington.—Very little prospecting has been done in these centres during the year.

"Bardoc.—The old Zoroastrian lease has again been equipped with winding and crushing facilities, and work is being pushed on vigorously; there is every chance that the mine may be made to pay under the present system of working. Very little prospecting work is being done at Bardoc.

"Ora Banda.—This district has continued to develop well, with the advent of a salt and fresh water supply mining has been very brisk. The developments at the 400ft. level in the Victorious mine have been excellent and the future outlook is highly promising.

"There is a very large area at Ora Banda containing large soft lode formations which would well repay further developing and testing. The rich developments in the Victorious mine will in all probability be repeated in many of these formations.

"Siberia.—Mining at Siberia has not been so brisk as the prospects warranted at the beginning of the year, but the Siberia Consols owned by Franca and Adams has been floated into a company and more energetic developments will now be pushed ahead on this large lode formation. A number of leases are being prospected with satisfactory results in this centre.

"Mulgarrie.—Several parties have returned during the year to further test the reefs of this District.

"Messrs. Borland and Rudd are working a P.A. north of the old Christian and have raised a hundred tons from a reef 3ft. or 4ft. wide and which shows payable prospects.

"Messrs. Herd and party are working the old Christian, and during the year have taken out from the old workings several hundred tons of payable ore.

"Messrs. Glendening and party and Archibald Bros. are working highly promising prospecting propositions.

"Gindalbie.—Tributers have continued to work the Gippsland leases and have made more than wages. No development work has been done and the future lookout for this property is not too good. Very little prospecting is being done in the immediate vicinity of Gindalbie.

"At Binti Binti Mr. Creer, representing Adelaide capital, took an option over the Havilah mine, and considerable development work has been done; this is a highly promising prospect, the surface indications are remarkably good. There are a number of good prospecting claims at Binti Binti that require development.

"Kurnalpi.—During the year a rush took place to this centre. Unfortunately the land was pegged over a considerable area and so far very little work has been done to prove anything. Kurnalpi is the centre of an auriferous area that contains large lode formations that undoubtedly carry low values. To prove these lodes prospecting is necessary.

"Kurnalpi requires a fresh water supply and crushing facilities. The possibilities of this centre are very great.

"Mulgabbie.—The usual number of prospectors have been engaged during the year and some good patches of gold have been located, but no real testing of the auriferous formation has taken place.

"Pingin, Edjudina, and Yarri.—At these centres prospecting has been carried on in a desultory manner and these centres are losing their population.

"During the year very little development work has been done."

EAST COOLGARDIE GOLDFIELD.

Mr. J. O. Hudson, Inspector of Mines, has submitted the following report dated 20th March, 1913:—

"I have the honour to submit for your information my annual report for the year 1912 on the East Coolgardie Goldfield.

"The mines have been regularly inspected and in most cases defects have been remedied as speedily as possible. There is still a tendency in some mines to carry stopes to such a height as to render it difficult for employees to satisfy themselves that the ground is safe to work under. Attention is continually being drawn to the danger of such a practice and every effort is being made to prevent it.

Explosives.

"The quality of explosives used during the year was satisfactory; no complaints were received in connection with them.

"There were four fatal accidents due to premature explosions. In all cases the fuse was thoroughly tested but no fault could be found with it. Each year there are accidents of this nature, and although every endeavour is made to ascertain their cause, it is usually without success.

"There can only be three causes:—

"(1) Defective fuse;

(2) Faulty charging;

(3) Error in spitting the fuses.

"(1) The fuse supplied appears to be of good quality, tests are made regularly, and the burning rate is regular and of such a time to lead one to believe that it is impossible for the accidents to be caused by this means.

"(2) When accidents occur from explosions they are usually attended with fatal results, and no direct evidence is obtainable as to their cause and any opinion arrived at in most cases must be purely assumption.

"(3) In one accident in which two men were injured, the man who fired the holes stated that before the explosion he saw the explosive burn, and though he had covered the explosive with rough stones, he considered the small piece of explosive used in spitting the fuse had fallen on to the charge igniting it, thus causing a premature explosion. In another case two men were employed in a winze and a lighted candle dropped into a bucket containing loose explosives; the explosives became ignited and the gases caused the death of one of the men.

"The accidents from explosives during the year were:—Four fatal, five serious, and four minor. This return is very serious and shows the necessity for very strict supervision; also the necessity of great care on the part of the men when using explosives.

First Aid.

"This necessary work has received considerable attention during the year. It is pleasing to note the large number of men who have been trained on the mines and the amount of good which is being derived from it, and it is to be hoped that all men employed in the industry will eventually attend the classes which are being formed to instruct them.

"The formation of Rescue Corps on the mines which is being inaugurated is undoubtedly a step in the right direction.

"The recent fire at the Lake View Consols demonstrates the necessity of having trained men on the mines to deal with such occurrences. A large number of men were gassed in fighting the fire and it was only prompt attention which prevented the record of a fatality.

PROSECUTIONS.

"There were two prosecutions during the year; in each case convictions were obtained.

ACCIDENTS.

"Attached is return of accidents for the year which were inquired into by Inspectors of Mines.

"There were 22 fatal, 310 serious, and 551 minor accidents in East Coolgardie.

"The fatal accidents occurred on the following mines:—

Associated	2
Golden Horseshoe	7
Gt. Boulder Perseverance	1
Gt. Boulder Proprietary	4
Hainault G.M.	1
Ivanhoe G.M.	2
Kalgurli G.M.	1
Lake View & Star	2
Oroya Links G.M.	1
South Kalgurli	1

"Total number of men employed was 5,330.

"In the portion of the North-East Coolgardie Goldfield inspected from this centre there were one fatal, four serious, and three minor accidents, the fatal accident occurring on unregistered ground, and was caused by a fall of ground within a few feet of the surface.

NEW REGULATIONS.

"Early in the year an additional general rule was made under Regulation 4, which provided for the use of gates on cages during such time as they were employed at change of shifts for raising and lowering men. In shafts where it was considered that there was any possibility of danger, notice was served on the manager to install the gates; these were provided and have given every satisfaction. The introduction of these gates will prevent accidents of a character which are usually fatal. In deep shafts they are essential as there is always the possibility of accidents owing to a man collapsing, allowing some portion of his body to protrude or by the carelessness of a man pushing another against the side of the shaft.

"In one mine a slight accident was caused by the braceman neglecting to close the gate, which was forced against the side of the shaft, and becoming dislodged, hung in the shaft, and when the cage was ascending a man was struck on the leg by portion of the gate.

DEVELOPMENTS.

"There have been no new developments of note during the year.

Oroya Links G.M.

"The depth of main shafts on these leases are the same as last year. Two hundred and ninety-four feet of sinking has been done in prospecting shafts; driving, 2,206ft.; crosscutting, 99ft.; rising, 1,674ft.; winzing, 634ft.

Paringa G.M.

"The depth of shafts 800ft. and 1,300ft. Driving, 402ft.; crosscutting, 176ft.; rising, 40ft.; winzing, 52ft.

"The Company have been working a lode known as 'Geach's.' There is a large ore body but the pay chutes are short and erratic.

Chaffer's G.M.

"Depth of shaft:—New shaft, 396ft.; main shaft, 1,013ft.; main reef shaft, 2,274½ft.

"Developments during 1912:—Shaft sinking, *nil;* driving, 151ft.; crosscutting, 523ft.; rising and winzing, *nil*; costeening, 125ft.

"No ore has been treated for the year, work having been confined to prospecting.

"At No. 16 level the west crosscut off north drive had been extended for a total length of 586ft.

"At 568ft. in this crosscut a lode was struck which has been driven on for a distance of 151ft.

Golden Horseshoe Estates, Ltd.

"Depth of shafts:—Main shaft, 2,529ft.; No. 2 shaft, 1,561ft.

"Developments during 1912:—Shaft sinking, 549½ft.; driving, 4,354½ft.; crosscutting, 2,408ft.; winzing, 2,390ft.; rising, 66½ft.

"A large amount of development has been carried out in levels below those reached by shafts on the mine, the work being done from the main shaft on the Great Boulder Proprietary. The management report that high grade ore was located in No. 4 lode at the 2,630ft. level, also in the west branch of No. 4 lode at the 2,480ft. level. The cages in the main shaft are running to the 2,480ft. level.

Great Boulder Perseverance G.M.

"Total depth of shafts:—Main shaft, 2,228ft.; No. 6 shaft, 1,493ft.

"Developments during 1912:—Shaft sinking, *nil;* driving, 6,033½ft.; crosscutting, 757½ft.; winzing, 1,022ft.; rising, 480ft.

"A large amount of development in the higher levels has located new bodies of ore.

Lake View & Star G.M.

"Depth of shafts:—Lake View Consols main shaft, 2,149ft.; Hannans Star main shaft, 1,120ft.

"Developments during 1912:—

	Lake View Consols.	Hannans Star.
Shaft sinking ..	259ft.	*Nil*
Driving	1,111ft.	704ft.
Crosscutting ..	212ft.	198ft.
Rising	207ft.	659ft.
Winzing ..	231ft.	443ft.

"The sinking of the main shaft on the Lake View Consols was resumed after a lapse of several years, and it is the intention to develop the mine at a depth of 2,100ft.

Hainault G.M.

"Depth of main shaft, 1,014ft.

"Development during 1912:—Shaft sinking, *nil;* driving, 1,452ft.; Crosscutting, 211ft.; rising, 230ft.; winzing, 72ft.

"During the year the treatment plant was increased by the installation of an additional roasting furnace and grinding pan.

Associated G.M.

"Depth of shafts:—Judd's shaft, 2,285ft. 6in.; Letley's shaft, 1,423ft. 6in.

"Development during 1912:—Shaft sinking, *nil;* driving, 3,333ft.; Crosscutting, 2,366ft.; rising and winzing, 1,431ft.

"The plant has not been increased during the year. There have been no developments of importance.

"One hundred and twenty-four thousand three hundred and sixty tons were treated for a yield of £164,571, an average of 26s. 5.5d. per ton.

Great Boulder Proprietary G.M.

"Depth of main shafts:—Main shaft, 2,844ft. 6in.; Edwards' shaft, 2,879ft.; Hamilton's shaft, 1,978ft. 6in.

"Developments during 1912:—Shaft sinking, *nil;* driving, 1,188ft.; Crosscutting, 283ft.; rising, 251ft.; winzing, 686ft.; diamond drilling, 1,252ft.

"The principal development was the discovery of a lens of ore at the 500ft. level about 400ft. south of Edwards' shaft. The ore has been proved for a length of 90ft. and is 23ft. in width. The values are said to be payable. This development is a very important one, but until further work is done above and below the 500ft. level the importance cannot be estimated. Early in the year a second Ridgeway filter was installed. An extension was added to the change room. A portable mixer with pumps has been installed to re-treat the residue dump.

Kalgurli G.M.

"Depth of main shaft, 1,900ft.

"Developments during 1912:—Shaft sinking No. 2, 20ft.; driving, 1,304ft.; Crosscutting, 599ft.; rising, 701ft.; winzing, 247ft.; diamond drilling, 869ft.

"There were no developments of importance during the year. This Company treated 124,425 tons for £249,856.

Ivanhoe G.M.

"Depth of shaft, 2,754ft.

"Development during 1912:—Shaft sinking, 154ft.; driving, 1,805ft.; crosscutting, 712ft.; rising, 411ft.; winzing, 509ft.

"A crosscut has been started at the 2,700ft. level to cut the east lode. Preparations are being made to instal electric light and signalling in the main shaft.

South Kalgurli G.M.

"Depth of shafts:—Main shaft, 1,818ft.; Morty's shaft, 986ft.

"Development during 1912:—Shaft sinking, *nil;* driving, 3,147ft.; crosscutting, 520ft.; rising, *nil;* winzing, 632ft.

"This mine treated for the year 66,244 tons for a yield of 32,676.07 fine ounces.

Associated Northern G.M.

"A Ridgeway filter has been erected and the residue dump is being treated.

"The underground portion of the mine is being worked on tribute.

Central and West Boulder G.M.

"Stephenson and party, tributers, have located a promising ore body about 100ft. west of the main shaft in unexplored ground.

"Another party of tributers are crosscutting to cut the lode at a lower level.

"During the year the tributers treated 4,268.01 tons for a yield of 1,704.63 fine ounces.

Hannans Reward G.M.

"This company is installing an air compressor at the Mt. Charlotte shaft with the intention of testing the lodes at the 400ft. level. The tributers continue to treat large tonnages from the surface workings.

New North Boulder G.M.

"A Huntingdon mill and cyanide plant have been erected with a view of treating the oxidised ore. The results to date are said to be satisfactory.

New North Collier G.M.

"After being abandoned for a considerable time, this lease was again taken up and another rich lens of ore located; from 337.25 tons a yield of 1,382.6 fine ounces were obtained.

COOLGARDIE, YILGARN, AND DUNDAS GOLDFIELDS.

The Inspector of Mines, Mr. J. Crabb, has forwarded a report, dated 3rd January, 1913, as follows:—

"I beg to submit my Annual Report regarding mining on the Coolgardie, Dundas, and Yilgarn Goldfields for the year 1912.

"Although the year just ended was not characterised by anything of a particularly sensational nature in the way of discovery in these fields, it was nevertheless one of steady progress, and, judging from the interest taken in connection with low-grade mining, there seem to be good prospects of the mining industry greatly expanding.

"The recent decline in the output of gold has been arrested on some of the fields, which goes to show it does not follow that a decline for a few years is a reliable indication that the same will continue uninterruptedly to gradual extinction, or that our goldfields have passed their zenith in the production of gold.

"It is of course a well-known fact that every mine represents a wasting asset, and that its resources must inevitably come to an end some day, but this does not justify or warrant pessimistic conclusions or inferences that our gold mining industry is incapable of greater expansion than has yet been attained.

COOLGARDIE GOLDFIELD.

"There has been a substantial increase in the gold yield in this field compared with the year 1911, which amounted to about 7,000 ounces of fine gold, and as mining at the different centres is looking more prosperous than at the beginning of the year, it may reasonably be expected that the year 1913 will show an increase compared with the year under review.

"At Chadwin high-grade ore has been treated from the different mines; the veins are maintaining their size and value, and have every appearance of continuing to a considerable depth.

"Good results were again obtained from the Carbine Mine, and as it is capable of a large production, it may be reckoned on to be a fairly consistent producer for many years.

"During the latter part of the year the caving system of mining has been adopted from the No. 3 level. Fairly large quantities have been obtained, and the dome of subsidence must now be rather considerable. The material being caved consists principally of alluvial, and as there appears to be a large extent of this it seems evident that the zone of subsidence will extend over a large area.

"From the various mines at Jourdie Hills very satisfactory results were obtained, and the outlook of this part of the field is fairly bright.

"At Kunanalling a five-head mill is being erected by Mr. Hanks on an old property in which a good

deal of development was done in the early days, in a large low-grade formation.

"The tributers on the Vale of Coolgardie, Bonnievale, are doing fairly well, but it is expected much better results will be obtained in the near future.

"DeGracie's line of lode is opening up well, and it is expected to develop into a highly profitable mine.

"Several good crushings were treated at the State Battery from the Camel Paddock. At one of the mines, the May Queen, a small quantity of scheelite was discovered in the bottom workings.

"The ore that was being mined at Tindal's Mine during the latter part of the year was reckoned to be too low-grade to meet working expenses, and consequently it was found necessary to cease operations temporarily.

"At Burbanks, operations at the Burbanks Main Lode, Burbanks Birthday, and Lady Robinson have been highly satisfactory, and the outlook of mining in this centre is brighter now than it has been for many years.

"Mining at Widgiemooltha has been a little quiet, but attention is now being paid to some large low-grade veins that offer fair prospects.

"The Hidden Secret North, Higginsville, has had a very successful year, and is at present looking better than it has ever done.

"The advantage of the tribute system, both to tributers and owners, has been well demonstrated in connection with the working of this property.

DUNDAS GOLDFIELD.

"Some disadvantage was felt on the Dundas Goldfield owing to the scarcity of water, which was due to the exceptionally dry season.

"At the Lady Miller encouraging developments occurred, and a large amount of machinery was added to the plant.

"The Mararoa is said to be looking well, and that there is every prospect of it maintaining a large and profitable production for many years.

"A considerable amount of drifting has been done in a southerly direction from the main incline, where it is thought there are good prospects of discovering ore of a profitable character.

"Good developments have taken place at the Viking No. 1, and the prospects of the mine are said to be encouraging.

"At the Princess Royal mine a 'blind shaft' is being sunk in lode material at the 950ft. level for the purpose of testing its value.

YILGARN GOLDFIELD.

"The outlook of mining in the Yilgarn Goldfield never looked brighter than at present, and there is no doubt that the output of gold for 1913 will be a record one for this field. Mining operations are being carried on over a far greater area than at any other time; and at most of the centres very encouraging results are being obtained.

"At Marda, which is situated about 100 miles north of Southern Cross, some very rich ore has beeen mined and treated.

The Great Unknown, Butcher Bird, and Allen's Find are developing well, and have every appearance of being consistent producers of high-grade ore for a considerable time. A parcel of 23 tons treated from the Standard mine is reported to have returned 214ozs., or an average of 9ozs. 6dwts. per ton. There are several other shows at this centre that offer excellent prospects of developing into profitable mines. At present the principal disadvantage to the development of these shows is the scarcity of water for milling purposes.

"At the Bullfinch mine a large amount of development has been done, which has opened up a great quantity of highly profitable ore. A fine milling and slime plant is in course of erection, which is expected to be ready for work within the next few weeks.

"Good progress has been made on the Corinthian Group, and a milling plant is now in course of erection on the Corinthian North.

"In the vicinity of Southern Cross, mining has been somewhat dull, but it is anticipated that ore sufficiently rich to encourage the development of some of the lodes may be discovered with the diamond drill now in operation.

"Mining at Marvel Loch throughout the year has been very active. At the Marvel Loch mine a new milling plant has been erected and encouraging developments have occurred.

"The Mountain Queen has been treating about 4,000 tons of ore monthly for an average return of about 17s. 5½d. per ton by amalgamation. Total costs, exclusive of development, have been about 10s., of which mining and milling took about 4s. 5d. each, and general expenses the remainder, 1s. 2d. Two Holman air-cushion stamps are used. With 123 drops per minute the mill consumes 34 h.p., and crushes 150 tons in 24 hours. When speeded to 135 drops, the horse power rises to 45, and the output to 200 tons. The total cost of the plant, erected and housed ready for work, was £3,000. The wear and tear on the shoes has been 0.248lbs. and on dies 0.199lbs. per ton crushed. Several small mines have given excellent returns, and their outlook is very promising. A parcel of ore obtained from the normal dip-fault at the May Queen gave a return of about 7ozs. per ton. The vein has been proved to range from 1ft. to 5ft. in width over a length of 100ft., and it is estimated there is about £16,000 worth of gold in sight. The vein has every appearance of maintaining its value and continuing to a great depth.

"At the Never Never mine, a slime plant has been erected, and the accumulated slime is being treated by Mr. A. M. Howell. This is a property that offers prospects of being capable of producing profitable returns. During the time mining operations were in progress, mining, milling, and cyaniding were done for a total cost of 9s. 6d. per ton.

"The Great Victoria is now under offer to a company who are vigorously prospecting the lode at different points. The lode has been proved to a depth of 300ft. and at surface it is estimated to range from 100ft. to 200ft. in width.

"At Parker's Range several good returns have been obtained from the different shows, and some satisfactory developments have taken place.

"The Spring Hill mine is looking well, and as excellent prospects have recently been obtained along the outcrop of the main lode, the outlook of the property has been very much improved.

"From the Australia some very good ore has been treated, the principal bulk of which came from a lode that is situated a little distance east of the main workings.

"At Carrabin, the principal development has been at the Edna May mine. A fine vein has been developed which carries high values. There appear to be excellent prospects of this property producing a large quantity of highly profitable ore.

ACCIDENTS.

"A considerable amount of care has been exercised by the management of the various mines, and it is my pleasing duty to report that not one fatal accident occurred in any of the mines in the goldfields under consideration.

"All serious and minor accidents have been reported to your office.

VENTILATION.

"The ventilation in the whole of the mines has been very good.

ROCK OUTBURSTS AT BURBANKS MAIN LODE.

Further outbursts of rock occurred at Burbanks Main Lode mine, Burbanks. The most significant took place at No. 6 level immediately over a section of the drift that was well timbered with stulls 8ft. in length, having diameters ranging from 10in. to 12in.

"This outburst broke some of the stulls and displaced others, at the same time disintegrating about 25 tons of lode material.

"It was accompanied with a loud report which was heard at the surface several hundreds of feet distant from a vertical point above the centre of the disturbance. In every instance the outbursts have occurred in the lode, which is composed of quartz and a more or less silicified greenstone, having a hardness of about six. Quite a number of similar outbursts have occurred from time to time in different parts of the world, and I do not think it would be out of place to mention here a few of them, and also give a brief account of the opinions that have been formed by men who have given the subject a great deal of thought, regarding the cause of the phenomenon.

"Mr. J. B. Jaquet, Chief Inspector of Mines, New South Wales, in a report upon outbursts of explosive rock at New Hillgrove Proprietary mine says:—'A severe outburst of rock occurred in the New Hillgrove mine at 5.30 a.m. on the morning of the 15th December, 1905. The outburst occurred in the No. 6 level, and in the stopes between this and No. 7 level. The shock affected the country for a mile or two around as if an earthquake had occurred, and awoke residents of Hillgrove who live upon the tableland more than a mile distant from, and over 2,000ft. vertically above, the centre of the disturbance. The main underlie shaft was displaced between the Nos. 6 and 7 levels, and the No. 6 level north destroyed. Stull pieces were broken and rock shifted in the adjoining Baker's Creek mine. The total area affected was over 300ft. in length and 100ft. in height.

"These sudden outbursts have long been a source of anxiety to the miners of Hillgrove, and there is evidence to show that they are increasing in violence as greater depths are being reached. I believe I am correct in saying that no previous explosion affected such a wide area and caused such disastrous results as the one which occurred recently.

"'Explosive rocks are not peculiar to Hillgrove, but have been described as occurring in many parts of the world. Outbursts which are similar in character have caused considerable trouble in working the Mysore mines, India. The bursts in the Mysore are not confined to one particular rock, as would seem to be the case at Hillgrove. Quartz reefs, hornblende schists, and trap dikes have at different times been known to "fly." In the lead mines of Derbyshire, England, slickensided rocks met with are liable to burst on being struck with a hammer or even scratched with a pick.

"'Mr. J. E. Crane, Assistant Government Geologist, has mentioned that the seams of kerosene shale in the Genowlan and New Hartley mines "spit" and "fly" when being worked, so the miners are obliged to wear wire gauze guards as a protection to their eyes.

"'The outbursts, according to my informants, have never been known to occur in shafts or crosscuts off the lines of reef, though these workings are liable to be affected by the shock, or by the movements which accompany them. They are also confined to a certain zone or block (the kicking ground) of slate. The Hillgrove rock is more or less silicified and altered dark coloured slate, traversed by numerous joints which intersect at all angles. When tapped with a hammer, particularly after exposure to air, the rock will break or crumble into numerous fragments which may exhibit a subconchoidal fracture. In this connection it is interesting to know that Mr. Smeeth describes the explosive dykes of the Kolar Field, Mysore, as possessing a well marked system of joint planes, whilst the blocks formed by these planes exhibit a subconchoidal weathering in a very marked degree.

"'The Hillgrove rock is liable to "kick" and "spit" at any time when mining operations are in progress, particularly after blasting, but the more serious outbursts, and those which cause the most concern, have occurred when a "bridge" of ground is being removed below a level. Sometimes fragments of rock fly from the walls with a velocity almost approaching that of a projectile from a gun.'

"In an unpublished report, dated the 8th April, 1899, Mr. Godfrey states, concerning explosive bursts in Baker's Creek mine as follows:—'On one occasion two men were drilling in the face of the stope just above No. II. level when a piece of ground flew out and cut one of the eyes out of one man. On another occasion the whole of the floor of No. 9 level, over one section of stopes split up into thousands of fragments with a noise like breaking crockery, filling up the drive and nearly burying one of the underground bosses; while on the third occasion a large piece flew from the face of one of the stopes in No. II. level and cut a man in halves.'

"Mr. Ray V. Myers, Superintendent of Mines, Drayton, Coal & Iron Co., Ltd., Tem., in giving an account of an outburst in one of his mines states:—'We have just had a peculiar accident in one of our coal mines. One of our miners was drawing an entry stump in the course of a complete robbing of one district of the mine. The roof consisted of sandstone, and was so strong that it was not broken for several hundreds of feet beyond the point where the miner was working. For this reason an extraordinary pressure was brought to bear upon this pillar. The miner in question was taking the pillar down with a pick when suddenly, without warning, the coal was thrust from the rib to the extent of about 15 tons, with the same violence as if it had been blasted with powder or dynamite. The miner was thrown some distance and instantly killed, the bones of both his arms and legs being broken, as was also his neck.'

"A number of somewhat similar occurrences could be quoted, but these, I think, are sufficient to show that they are not confined to any particular place, or to any particular kind of rock.

"It has been suggested that outbursts are due to the following causes:—

"1. Molecular strain.

"2. Occluded gases.

"3. To compression of slates.

"*Molecular Strain.*—This theory was based upon a statement that a piece of rock had, when struck, exploded with some violence.

"It was suggested that the slate was in the state of molecular strain and could be compared to the so-called Prince Rupert's drops, which, as is well known, are made by suddenly cooling drops of molten glass. The drops, when struck or allowed to fall, break with a certain amount of explosive violence into a number of small fragments. The Hillgrove rock, particularly after exposure to the air, readily disintegrates and parts along its many joint planes upon being tapped with a hammer, but its component parts do not violently separate from one another. This theory has been put forward in explanation of similar occurrences elsewhere. Mr. A. Strachan, in the paper referred to upon the explosive slickensides in the Derbyshire lead mines, says:—'The explanation which perhaps best satisfies the requirements of the problem appears that of the Prince Rupert's drops or of the toughened glass, and that this condition of strain is the result of the earth's movements which produced the slickensides.'

"Mr. Smeeth (Chief Inspector of Mines, Mysore), quoted Mr. Bosworth Smith, Superintendent, Tank Mines, as saying:—'The cause of the phenomenon was similar to that of the explosion of Prince Rupert's drops or the bursting or cracking of a toughened glass globe.' While stating that this hypothesis accounts for the spitting of trap dikes and hornblende schist, he says:—'Air blasts that occur in the quartz may be caused by the pressure of the walls of the lode. The lode shows many evidences of great pressure, and this has in places caused movements in the walls and consequent slickensides.'

"*Occluded Gases.*—No gas of any kind has, so far as I can learn, been found escaping from the rock, nor has carbonic acid or any other extraneous gas been detected after an explosion has occurred.

"*Compression of Slates.*—If the outbursts were due to this cause alone, then we might expect them to occur anywhere within the belt of altered slates.

"Mr. Jaquet says:—'The only explanation which I have to offer is that the bursts are due, firstly, to the walls being in a condition of strain; and, secondly, to the fact that the kicking ground will not bend; it only breaks, and while breaking disintegrates into a number of fragments. An ordinary slate under similar conditions of strain would probably slowly yield to the pressure and slightly swell into the level or stopes.

"The 'kicking' slate offers a resistance to the pressure as long as possible and eventually succumbs with a burst. Its power of resistance is weakened by contact with air and by the shock of blasting, or by hammering.

"Anyone entering an open stope within the 'kicking' zone will notice that the slate walls are winded and crumbled, and this alteration would seem to be not merely superficial, but to extend for some distance inward from either wall, so that upon either side of the filled stope we have a layer of loose rock which readily yields to pressure from above, and weighs heavily upon any solid ground below.

"Mr. Rzehak, who gives a brief synopsis of the observations which have been made at various places in Europe and the United States of America of sudden explosions and fracture of rocks, came to the conclusion that the appearance of these phenomena is entirely independent of the nature of the rock as well as of its geological age. The phenomena have been observed in the Tauern tunnel in archaic granitic gneiss, in Przibram in the older Palaeozoic sedimentaries, in Westphalia and in Kladno, Bohemia, in the Carboniferous strata, in the Wochein tunnel in dolomitic limestone of the Triassic formation, in the Upper Bararia in the lignite-bearing Molasse. In the United States they refer to gneiss, granite, Niagara limestone, and sandstone. As the phenomena also appear in the tunnels in which comparatively little rock has been mined out, it is evident that the neighbourhood of large empty areas, upon which much stress has been laid in reports upon phenomena of this kind from coal mining districts, is not a necessary condition for their appearance. The author believes that there can be no doubt that the phenomena are due to the sudden release of tensions in the crust of the earth, the cause of these tensions being in most cases very difficult to ascertain. He calls attention to the fact that such latent tensions have been observed even with small pieces of rock.

"After making careful investigations regarding the phenomena at Burbanks Main Lode, and Lady Loch Mine, it seems very evident to me that the cause of the outbursts are due to pressure that has been set up by the earth's movements at some remote period. and to superincumbent pressure induced by mining operations.

"At the Main Lode the zone in which outbursts are apt to occur extends for a length of about 150ft. along the strike of the vein. This zone has a pitch of about 75 degrees northerly.

"I have discussed with the manager the advisability of extracting the ore, when within about 20ft. of the level, above by underhand stoping, but after going carefully into the matter it was considered that the present practice, *i.e.*, longitudinal back stoping with filling kept to within about 8ft. of the roof of the stopes, and by placing substantial stulls against the back of the stopes, was the best method that could be adopted.

"It is impossible to calculate the amount or nature of pressure in such conditions, for in many cases, and for varying intervals of time, the pressure may remain statical.

"The dead weight resting upon a small spot may be approximately estimated, but I am inclined to think it would be so far wide of the mark as to be of no practical value in the ground under consideration. In some cases a sufficient approximation may be made over a large area to at least indicate the chances of any special risk, but, unfortunately, pressures and strains are not a visible factor except by results and only realised when one sees massive stulls and struts of timber sustaining the thrust of rock excavations crushing into one another like so much cheese; yet even this often fails to convey the idea that the rock itself is carrying precisely the same strain, and that however safe an excavation may look, the foundations of the superincumbent rock cannot be interfered with, except at some risk.

"I may mention that in addition to the large outbursts, miniature ones are often seen in the faces of some of the stopes; small pieces of quartz slowly raise or blister from the face, and on reaching a certain angle will violently fly, and at the same time

give off a slight report similar to that produced by the breaking of a piece of glass. Some of the miners say that on some occasions different coloured lights are produced by these miniature outbursts, similar to that brought about by the striking together of pieces of quartz.

SUNDAY LABOUR.

"Authority was given for the employment of labour on Sundays at the Mountain Queen, Bullfinch, Hidden Secret North, and Marvel Loch.

"Several applications were received from different mines, but on making inquiry into the grounds on which the applications were made, I found that in some cases no authority was required from me to allow of some of the work being done, whilst in others I could not satisfy myself that the employment of Sunday labour was necessary to avoid risk, or damage to the workings, or loss of time in the subsequent working of the mines; consequently such applications were refused.

COLLIE COALFIELD.

The newly appointed (1913) Inspector of Mines for the Collie District, Mr. R. McVee, has compiled the following report on the progress of the Coalmining industry and work of his office during 1912, from data in the office:—

"The total output of coal from the field during the year amounted to 295,077 tons, being an increase of 45,293 tons on previous year's output.

"The largest producer was the Co-operative Coal Co., with 76,697 tons, the Collie Coal Co. next with 66,532 tons, and the other mines in the following order: Scottish, 50,910 tons; Proprietary, 39,798 tons; Premier, 37,519 tons, and the Westralian 23,621 tons.

"The average number of men employed was 545, as against 477 the previous year, an increase of 68 men; and the output of coal per man per annum was 541 tons, an increase of 18 tons per man on the previous year.

"There were no fatal accidents during the year. The serious accidents totalled 57, and minor accidents 40. Falls of ground caused 9 serious and 11 minor. Miscellaneous underground 41 serious and 24 minor, surface 7 serious and 5 minor.

"Three permits to employ persons on a Sunday under Section 46 of "The Mines Regulation Act, 1906," were granted, the average number of men allowed to work per permit being nine.

"A large amount of development work has been carried out in some of the mines during the year, and the output from the field could be considerably increased should trade demand it."

GREENBUSHES TINFIELD.

The following report shows the position of affairs as seen by Inspector Hudson early in February, 1913:—

"I have visited this district and beg to submit the following report.

"The high price of tin has been the means of increased activity in the industry during the past year.

"On my visit the scarcity of water to run the sluicing plants was being felt, and provision was being made to start the Blackwood River pumping plant.

"The following plants were visited:—

"Mt. Jones, owned by Mr. F. Moss.—This plant was temporarily idle owing to an accident to the plant. This is a sluicing proposition.

"Spring Gully Dredge, owned by Mr. F. Moss.—A good face of wash is being operated on, and I was informed that satisfactory results were being obtained.

"Mitchell's Spring Gully Dredge (Starna Sluicing Co.) and the Starna Dredge, owned by the same corporation, were working satisfactorily.

"Floyd's Gully Dredge Syndicate.—This claim was temporarily idle owing to shortage of water. A Chilian mill was being erected to treat the hopperings.

"Giese's Dredge Syndicate.—This dredge was temporarily idle, the plant being moved towards the working face.

"Little Wonder Sluicing Plant (Mr. Cole).—This plant was also temporarily idle, and the plant was being moved towards the working face.

"Greenbushes Development Co.—This corporation has three dredges in operation, also a five-head battery.

"Boronia Gully Syndicate Dredge.—This syndicate has recently moved the dredge, and was engaged on a good face of wash. This dredge was not being run full time owing to a scarcity of water.

"A new discovery has been located by Messrs. Hewitson and Paul on a portion of the townsite. The deposit is of an alluvial nature, it is 12 feet from surface, and is being mined 30 feet in width and 4 to 6 feet in height. The returns have been most satisfactory.

"Mt. Pleasant Claim (Messrs. Gregor & Jessop).—The deposit is of an alluvial nature, about 25 feet below surface. The wash is about 1½ chains in width, and is being taken out for a height of 4 to 9 feet.

"Cornwall Lease.—A shaft is being sunk which has reached a depth of 98 feet. It is the intention to now crosscut to the lode and develop at that level.

"South Cornwall Lease.—The lode is being worked by open cut, the ore being taken to the mill by an inclined tramway. A Chilian mill with two concentrating tables is used for the treatment of ore.

"There are numerous small parties employed on surface sluicing at what is known as the Bunbury end of the field."

PILBARA AND WEST PILBARA GOLDFIELDS.

Mr. P. C. Riches, Inspector of Mines and Warden, has forwarded the following report, dated 29th January, 1913:—

"Herewith I beg to hand you my annual report for the year 1912, dealing generally with the condition of things on the Pilbara Goldfield.

"I regret to say that from a mining point of view there is very little alteration in the conditions that obtained when my last annual report was written. With the high price of tin that has ruled during the last twelve months it was hoped that more of the numerous tin lodes that exist in the district would have been actively developed, more particularly in the Wodgina Field, but although on several occasions the properties have been inspected on behalf of various investors no business has resulted, and until capital is forthcoming I am afraid the Wodgina Field will continue to languish. The position at this centre would have been considerably more acute if the Department had not granted free crushings of 20-ton parcels to prospectors. This enabled various holders to obtain some ready money to carry on with. A State battery has been promised at Wodgina, and although when

erected this will prove a great boon to working miners, still, capital on a large scale is wanted to enable the properties to be properly developed.

"At Marble Bar there has been steady work done on the various leases, and the quantity of stone crushed and amount or gold won has been in excess of that obtained in 1911. For this state of affairs the State battery is solely responsible.

"At Bamboo Creek the promise of a State battery nas stimulated mining, and good developments have taken place at the lower levels on several previously abandoned properties. On the Bamboo Revenue Lease 347 ozs. of gold were got by dollying, and a further 190 ozs. were obtained from a ton crushing put through at the Marble Bar State battery. I quite expect, during the coming year, to see Bamboo Creek a consistent gold-producing centre, and as soon as the State battery commences work there should be a considerable influx of population at this centre.

"At Warrawoona mining operations were carried out with varying success at the Klondyke Boulder Mine. Eventually want of funds caused a temporary cessation of work, but further assistance having been given to the company by the Mines Department, work was resumed, and the main shaft is now being sunk to the 250ft. level, at which point it is proposed to open out and drive for the reef which at higher levels proved very payable. I have every confidence that this property will eventually prove a consistent gold producer.

"In the latter part of the year a number of leases were taken up at the North Pole for copper, and in the Warrawagine District for silver and copper. No work has been done on these properties, and their value has still to be proved.

"The yield of alluvial tin has been somewhat less than in 1911, and it is a wonder, taking into consideration the high price of this metal and the large extent of tin-bearing country still to be explored, that further finds have not taken place. As a general rule, the men in the Moolyella and Cooglegong tin fields are more than making wages.

"In the Nullagine District mining has been quiet. At Eastern Creek good rains augmented the water supply and allowed all the stone at grass to be crushed.

"At 20 Mile Sandy and Mosquito Creek several good parcels of stone have been raised and crushed, and, as at Marble Bar, the State battery at 20 Mile Sandy is solely responsible for the continuation of mining operations at this locality.

"There has been one fatal mining accident during the year: Thomas Ward was killed at the Little Wonder mine through falling down a shaft.

"A small parcel of copper was sent from Doherty and Spinney's lease at McPhee Creek to Mount Kembla for treatment, and I understand that after paying £29 for cartage, shipping charges, etc., the net proceeds amounted to £48.

"The yield of gold from the Marble Bar District was 2,154.5 tons crushed for 2,872.53 fine ozs., 290.68 ozs. of alluvial and 258.12 ozs. dollied, a total for this district of 2,327.65 fine ozs., 8.99 ozs. dollied and 221.03 ozs. of alluvial, making a total for the field of 5,979 ozs. as compared with 5,014 ozs. for the year 1911.

"The tin output was 123.47 tons of an estimated value of £15,051. This shows a decrease of 25 tons on the amount obtained during the year 1911.

"The number of leases and claims in existence during the year 1912 are as follows:—

"Marble Bar District—

Gold Mining Leases, 36—area, 464 acres.
Mineral Leases, 56—area, 1,891 acres.
Prospecting Areas (Gold), 8—area, 83 acres.
Prospecting Areas (Mineral), 7—area, 156 acres.

"Nullagine District—

Gold Mining Leases, 17—area, 158 acres.
Mineral Lease, 1—area, 3 acres.
Prospecting Areas, 7—area, 63½ acres.

being a total for the whole field of 53 Gold Mining Leases of an area of 622 acres, 58 Mineral Leases of an area of 1,894 acres, and 22 Prospecting Areas of an area of 302 acres.

"During the month of March good rains fell over the whole field; since then there have been no further falls, and a mild state of drought prevails. In consequence of the drought on the Gascoyne and Ashburton Rivers a keen demand for fat stock existed, and the shipments from Port Hedland have constituted a record, 51,000 fat sheep and 5,000 fat cattle having been shipped from that port during the year. The continued high price of wool has also materially helped towards the prosperity of the squatting industry, and if seasonable rain soon falls the outlook for the next twelve months will be very good."

MINING ACCIDENTS.

I forward herewith tabulated statements of the Mining Accidents for the year 1912, for the customary tables Nos. 26, 27, and 28 of your annual report, with the totals of the previous year for comparison, also a diagram of the fatal accidents year by year and their causes. As in the last two years' reports, the accidents tabulated in these returns are now restricted entirely to such as have happened to persons engaged in the occupation of mining, and which have been a result of their occupation.

The following statement, however, shows also the total number of fatal accidents recorded as having happened on mines, whether to persons employed on the mines or not, for the last five years:—

	1908.	1909.	1910	1911.	1912.
Total fatal accidents on mines reported	41	37	34	44	38
Less accidents to persons not engaged in mining, deaths in mines due to natural causes, and accidents to persons which were not due to their occupation as miners ...	1	3	5	7	3
Fatal accidents to men engaged in mining	40	34	29	37	35
Total men engaged in mining (average)	17,266	18,336	17,711	16,596	14,961
Accident death rate, per 1,000 men engaged in mining ...	2·32	1·85	1·64	2·23	2·34

"In table 26 the accidents are shown under the various gold and mineral fields and classified according to causes, on reference to which it will be seen that during 1912 there were 35 persons killed and 491 seriously injured as compared with 37 killed and 523 injured in 1911. The diagram shows graphically the totals of fatal accidents year by year since 1894.

Table 27 shows the death-rate per 1,000 persons employed on surface and underground in mines classified as gold, coal, and other mines according to the mineral produced, the general average rate for 1912 being 2.34 as against 2.23 for 1911. The rates per 1,000 are based upon the figures in your table No. 21, which gives a grand total for 1912 of 14,961 men employed at mines above and underground, inclusive of alluvial gold workers.

Table 28 deals with gold mines, and gives a summary for 1912 of all fatal accidents above and below ground, with rates per 1,000 men employed, and per 1,000 tons of ore raised, similar figures for 1911 being given for comparison. The number of men on which these rates are based are taken from your table No. 23, and do not include alluvial workers.

A General Table is attached hereunder classifying the fatal and serious accidents during 1912 according to the gold or mineral field in which they happened, and also according to causes, the totals from each cause for 1911 being shown for comparison:—

	Explosives.		Falls of Ground.		In Shafts.		Miscellaneous under ground.		Surface.		Machinery.		Total.	
	F.	S.	F.	S.	F.	S.	F.	S.	F.	S.	F.	S.	F.	S.
1. East Coolgardie ..	3	5	11	36	2	10	6	204	..	54	1	20	23	329
2. Mt. Margaret ..	..	..	1	4	1	7	..	11	..	11	..	3	2	36
3. Murchison	..	..	1	4	3	2	1	13	..	7	..	1	5	27
4. East Murchison ..	..	1	..	..	..	..	..	2	1	..	..	2	1	5
5. Coolgardie	..	1	..	3	..	..	..	6	..	2	..	..	..	12
6. Yilgarn	..	2	..	1	..	1	..	3	..	1	..	..	..	8
7. North Coolgardie ..	..	2	..	1	..	..	..	..	..	1	..	..	..	4
8. N.E. Coolgardie ..	..	..	1	1	..	..	..	3	..	..	..	..	1	4
9. Broad Arrow ..	..	..	..	..	1	..	..	..	..	..	..	..	1	..
10. Dundas	..	..	..	1	..	..	..	2	..	2	..	1	..	6
11. Pilbara	..	..	..	..	1	..	..	..	..	..	..	..	1	..
12. Peak Hill	..	..	..	..	..	..	..	..	..	..	..	..	..	..
13. Yalgoo	..	..	..	..	..	..	..	..	..	..	..	..	..	..
14. Phillips River ..	..	..	..	1	..	..	..	..	..	..	..	..	..	1
15. Collie	..	..	..	10	..	..	..	40	..	8	..	..	..	58
16. Greenbushes	..	..	..	..	..	..	..	..	..	1	..	..	..	1
17. Northampton ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
18. West Pilbara ..	..	..	..	..	..	..	..	..	1	..	..	..	1	..
Total for 1912 ..	3	11	14	62	8	20	7	284	2	87	1	27	35	491
Total for 1911 ..	2	15	12	42	12	33	3	291	4	114	4	33	37	528

FATAL ACCIDENTS.

The following are short summaries of each fatal accident reported to this office during the year 1912:—

Explosions.

A man met his death through premature explosion in a stope of the Ivanhoe G.M. He was last seen preparing two sandblasts, and about to fire them, but there is no direct evidence to show how it came about that the explosion occurred before he got to a place of safety. Two reports were heard, but only one sandblast was found to have been fired. The injuries to deceased's body indicated that he must have had a primer in his right hand ready to fire the second blast, and that he fell on to it before the first one exploded. The fuse in use was tested and found to be very good. The Coroner's jury found that death was due to a premature explosion, but that there was no direct evidence to show how it occurred. (1813/12.)

In the South Kalgurli G.M. after charging a round of holes in the bottom of a winze ready for firing one of a pair of men working together ascended to the level on the Holman hoist and his mate was then lowered to light the fuses. Previously they had drawn up the ladders out of harm's way. After the fuses were lit the signal was received to haul up, but almost immediately there was an explosion and the man below was blown to pieces. The accident would seem to be due either to the firer delaying too long or to a premature explosion. All the tests made showed the fuse to be of excellent quality. A verdict of accidental death was given by the Coroner's jury. (3616/12.)

Two men were injured at the Associated G.M., one fatally the other very seriously, through a premature explosion. After charging a machine hole and three sandblasts, one of them proceeded to light the fuses, but had only lighted two sandblasts when he noticed a flare from one of them, and immediately an explosion occurred injuring him and knocking down his mate who was some distance away. The first man went to assist his mate and moved him so that the second shot would not injure him, and the other charge then exploded. The first man was able to go for help, and afterwards describe the accident, but died three weeks later from the effects of his severe injuries. The second man, who was apparently much the more seriously injured, made a remarkable recovery. The conduct of the man who died, John Shickerling, was brave and praiseworthy in the highest degree, his only thought being apparently to protect his mate without consideration for himself. The fuse in use was tested and found to be quite satisfactory, and the cause of the accident was probably, as suggested by deceased himself, the fall on to the charge of the small chip of gelignite used for igniting the fuse. A

verdict of death from a premature explosion was returned by the Coroner's jury. (4292/12.)

In Shafts.

A fatal accident occurred in the Morning Star mine Mt. Magnet, owing to a pitman falling from the ladderway in the pump shaft into the well and being drowned. He was going to grease the pump plungers and rods, and probably slipped from the ladder. The ladders in this shaft are vertical, with stages every 20 feet, and there is another ladder-way for ordinary use. The Coroner's jury recommended that "as it may be possible for the permanent travelling way to become damaged the pump shaft should be put in such order that it may be used as a convenient travelling way whenever necessary." This recommendation goes beyond the requirements of the Mines Regulation Act, and seems to me to have very little in its favour. (364/12.)

A fatal accident occurred at the Victorious mine, Ora Banda, through the fall of a "monkey" or crosshead upon two men in the sinking bucket in the main shaft, knocking one of them down the shaft. It appears that the deceased was the man who should have seen that the monkey was free and in place on the rope before the lowering of the bucket was started, but somehow it was overlooked and left behind, and afterwards shook free with the rubbing of the rope. (866/12.)

At the Golden Horseshoe mine, Boulder, a man met his death through walking into the main shaft at No. 12 plat. From the evidence at the inquest it would appear that after being lowered and waiting for about three minutes he was seen to stoop and go under the guard rail of the south compartment, immediately disappearing down the shaft. He was subject to absent-mindedness at times, which may account for the accident. The Coroner's jury expressed dissatisfaction with the lighting of the plat, but according to the evidence given it was well lighted. By direction of the Hon. the Minister for Mines instructions were sent to all Inspectors of Mines to see that plats are kept well lighted. (986/12.)

A man met his death while engaged in sinking the shaft of the Ingliston Extended G.M., at Meekatharra, through being struck by a stone, about 4 lbs. in weight, which fell down the shaft upon his head. No explanation was forthcoming as to how the stone came to get into the shaft. It may have been stuck to the bottom of the bucket. Deceased and his mate had just sent away a bucket of stone from the sinking in progress, but both had examined the top of it to see that nothing could fall from it. The Coroner's jury returned a verdict of accidental death without blame attachable to anyone. (1040/12.)

While working in a Lode Claim at 20 Mile Sandy Creek, Nullagine District, a prospector was killed by falling 35 feet down his shaft, owing to the breaking of a bearer of a stage on which he was working, due to a somewhat heavy fall of earth upon it. The occurrence was quite accidental, no blame being attributable to anyone. (1803/12.)

A shift boss on the Associated G.M. met with a fatal accident while ascending a ladder to the No. 1 level. He had been suffering from influenza and became dizzy, and fell to the level below, sustaining such serious injuries as to result in his death a day later. A verdict of accidental death was returned by the Coroner's jury. (1940/12.)

A miner in the Sons of Gwalia mine, Leonora, was killed while riding in the trolley used during sinking the main inclined shaft below the lowest level to which the skips run. He was sitting on the back of the trolley in a position which required him to crouch down in order to avoid being struck by the timbers, and in passing one of the plats he held his head too high and was knocked off, receiving injuries from which he died. Riding on the back of the trolley has since been prohibited. (4207/12.)

A miner employed in the Fenian mine, Meekatharra, was lowered to No. 4 plat and got out there, and was then seen by the platman to open the gate of the central compartment of the shaft and step into it, thus falling down the shaft and being killed. There was good light on the plat, and the accident seems to have been due to some extraordinary aberration of mind of the deceased. (25/13.)

Falls of Ground.

One of the partners in a gold mining lease near Moyagee was working in a stope at the 100ft. level and was found jammed against the footwall by a fall of earth. He was conscious when found, and had been caught for some considerable time. He was able to walk to his camp, but died two days later from internal injuries. No blame was attachable to anyone. (590/12.)

At the Golden Horseshoe Estates G.M., two men working in a stope at the 1,700ft. level fired out a round of holes and then worked down the loose ground. They then noticed a large piece of rock had a crack in it, and tried to bar it down but could not do so, and started to rig the machine. One then noticed some loose rock and began to knock it away with a bar, when the large piece previously tried came away suddenly and killed him instantly. The Coroner's jury found no blame attachable to anyone, and there appears to have been no lack of reasonable care and foresight. (860/12.)

A man engaged in stoping at the Hainault G.M. met his death through being buried by a fall of ground. Prior to the accident some of the men thought the ground unsafe, but deceased, who was in charge of the stope, after testing it thought it was safe enough. The Coroner's jury returned a verdict of accidental death without blame to anyone. (1356/12.)

A miner in the Ida H. Mine, near Laverton, was killed by a fall of ground in a stope above the 1,000ft. level. The ground was known to be heavy and the underground manager had warned him to exercise great care. Deceased and others tried the ground and thought it safe, but it fell away and killed him. The accident is one of a sort unavoidable in mining work. (1401/12.)

A man was killed by a fall of earth while working as a shoveller in a stope in oxidised ore at the 175ft. level of Hannan's Star G.M. The miner with him had just previously barred down the loose ground and thought the place was safe. The fatality appears to have been an unforeseeable mishap. The verdict of the Coroner's jury was accidental death, no blame attachable to anyone. (1532/12.)

At the Golden Horseshoe two shovellers who were rather inexperienced in mining work were removing loose rock under the stage on which a machine drill was working when a large rock fell from the side of the stope upon one of them, killing him instantly. The support of the rock probably had been removed by the loose ore being shovelled away. A verdict of accidental death was found by the Coroner's jury, but as the Inspector of Mines was not satisfied that proper

supervision had been exercised, proceedings were instituted against the general manager of the mine for failure to comply with General Rule (9) of Sec. 32 of the Mines Regulation Act, 1906. A fine of £25 and costs £5 12s. were inflicted by the R.M., whereupon an appeal was lodged, which had not been decided at the end of the year. (1858/12.)

A prospector was killed by a fall of ground in an open cut on an abandoned gold mining lease at Kanowna. He was working alone and in a very unsafe manner, without timbering to support the hanging wall. The Coroner's jury found that he was accidentally killed by a fall of earth, due to his own negligence (2118/12.)

Another man met his death at the Kalgurli G.M., through walking under known bad ground after he had been warned that it was unsafe. He could have reached his working place by a safe route, but took the risk, and was killed by a fall of ground. The Coroner's jury brought in a verdict of accidental death, no blame being attachable to anyone, and added the following rider:—"That we, the jury, are of the opinion that it is an unwise practice to allow shovellers to work ahead of a machine, and also, that the experienced miner responsible for the safety of the shovellers should have power to compel a shoveller to leave a place they deem unsafe. (2123/12.)

At the Golden Horseshoe G.M. while a man was charging holes to complete the firing out of a face fired by the previous shift, a large rock fell on him killing him instantly. The examination of the ground after the previous firing appears to have been very casual, the men apparently intending to fire the remaining holes before working it down properly. A verdict of accidental death was brought in by the jury at the inquest. (3387/12.)

While assisting to clear up some stone that had been barred down by the previous shift in a leading stope at the Ivanhoe G.M., a shift boss was killed through a quantity of ground falling on him. Deceased had examined the ground with the aid of an acetylene lamp ten minutes prior to the accident and considered it safe to work under. The Coroner's jury returned a verdict of accidental death, with no blame attributable to anyone. (3484/12.)

While barring down bad ground a man lost his life at the Great Boulder Perseverance G.M. through about a ton of earth falling on him, inflicting fatal injuries. All reasonable care seems to have been exercised. The Coroner's jury returned a verdict of accidental death. (3576/12.)

A timber man employed on the Lake View & Star G.M. was assisting to put a 'tom' in place to secure some ground considered dangerous, when a heavy fall of earth took place which killed him instantly. The men engaged in the work were experienced miners and used every care in trying to secure what was recognised to be a bad place. The Coroner's jury returned a verdict of accidental death. (3750/12.)

At the Great Boulder Proprietary G.M. a fall of ground occurred in a stope at the 250-feet level and buried a man who was standing in the stope. Rescue operations were started at once, but when the body was recovered, after 15 minutes' work, life was found to be extinct. Deceased's work did not necessitate his being in the part of the stope where the fall took place. The Coroner's jury returned a verdict of accidental death, no blame being attachable to anyone. (3897/12.)

Some shovellers at the Great Boulder Proprietary found that a number of rocks were too large, and fired four charges to break them. On returning to work the miner in charge sounded the back and was satisfied that it was safe, but shortly afterwards a piece of rock fell on him inflicting injuries from which he died four days later. Deceased was the man responsible for examination of the ground to see it was safe for the shovellers. The back was easily accessible for examination, and a high portion of the stope was well timbered. The Coroner's jury returned a verdict of accidental death. (4283/12.)

MISCELLANEOUS UNDERGROUND.

Two men were sinking a winze in the Golden Horseshoe mine, and had with them a packet of blasting gelatine loose in the sinking bucket. A slight mishap with the blow-pipe nozzle caused one of the candles to be knocked over, and in relighting it somehow the explosive caught fire and gave off poisonous nitrous fumes. The men climbed up the ladder, but the one behind was badly affected by the fumes and died about two hours later. The other was but little affected. The Coroner's jury did not blame any person, but there was clearly a breach of General Rule 3 (g.), of Sec. 32 of the Mines Regulation Act, which requires explosives to be kept in covered cases or canisters. (388/12.)

At the Marmont mine, Meekatharra, a miner was killed by being precipitated down a winze by the tipping up of a swinging stage on which he was working, due to a heavy piece of rock falling on one side of it. Two men were opening out an intermediate level between Nos. 1 and 2 levels, 320 and 416 feet respectively, and had the stage suspended about 40 feet down the winze, which connects the two levels. One man was on a piece of timber placed across the winze and was holding a board against the top of a big piece of loose rock to prevent it canting over, while deceased on the swinging stage was trying to bar it out at the bottom so that it would slip past the stage. It proved to be too heavy for them to control, and struck the stage in falling, canting it so much that the man on it fell down the winze and was killed. He obviously was working without much regard to his own safety in acting as he did. The Coroner's jury found no blame attachable to anyone. (603/12.)

At the Golden Horseshoe G.M. two men were sinking a winze, and one of them who was below asked his mate to pull him up on the bucket, which was done. In getting off the bucket, however, the unfortunate man slipped and fell back into the winze, and was killed. The Coroner's jury brought in a verdict of accidental death, adding the following rider:—"The jury is of the opinion that the system of rigging hoists with the drum directly over the winze is dangerous, and that they should be so rigged as that the rope should work over a pulley fixed at least six feet above the brace." The Inspector of Mines has reported on this as follows:—"There are two systems of erecting Holman hoists adopted on this field; one is to place the hoist on a vertical bar with the drum over the winze as shown in plan attached to the report of the accident. This system is used by the Great Boulder Proprietary and Golden Horseshoe mines. It is not possible to give more than four feet of clearance between the brace and

drum; if there is given more clearance the hoist is too high to manipulate the levers with comfort. On the other mines the hoists are rigged on a vertical bar at the side of the winze, the levers being towards the brace. The rope is run through a pulley over the winze. In most cases the pulley is attached by boring a hole in the back and driving a bolt into the hole, to which the pulley is attached. The practice adopted by the Great Boulder and Golden Horseshoe mines has been in use since the introduction of hoists on this field. I have never heard any complaint in regard to their being dangerous on account of their height from pulley to brace. I have ridden on hoists erected in a similar manner on many occasions, and did not find any difficulty in landing on the brace, and I have never had reason to consider the practice an unsafe one conditionally that reasonable care is used by the person driving. There is more possibility of the man having his hand caught between the rope and drum where clearance is four feet than where the clearance is six feet or more. Some managers assert that the possibility of the pulley dropping down the winze is more likely to cause accident than the low drum.

There is no doubt that there is reason for the argument, but we have no record of such an occurrence nor have we one caused by the low clearance between drum and brace.

Personally I consider that there is less likelihood of accident with the pulley at least six feet above the brace, but in a number of cases it would be impracticable to obtain the clearance.

According to the evidence taken at the inquest the jury did not have testimony submitted to them to any extent on the point on which they made their rider. (1,375/12.)

A pass at the Golden Horseshoe G.M. was covered with about six feet of ore shot down in stoping, and in attempting to run the ore from below the pass became choked, and the ore "hung up" near the top. A man thereupon started work with a bar on top of the heap of ore and freed the obstruction, but the sudden run of loose stone carried him with it into the pass, and he lost his life. There was no necessity for his working in such an unsafe position. A very similar accident occurred later the same year in the Great Boulder mine, as described below (4195/12). A verdict of death by suffocation through accidentally falling down a chute was given by the Coroner's jury. (2803/12.)

A man was accidentally killed in the Great Boulder G.M. while attempting to clear the top of an ore pass on to which some six feet or more of loose ore had been shot down. After getting an opening through the heap he appears to have got down into it to try to remove a big stone, which was causing a block, and while there a run of ore took place and carried him into the shoot and buried him, causing severe injuries which killed him. The Coroner's jury found that the management were to blame for allowing too many holes to be fired, but on review of the evidence by the Crown Prosecutor, he found that there were no grounds for proceedings against any person. (4195/12.)

At the Oroya Links G.M. a man was killed through being struck by a stone which rolled down a rill, and which had been accidentally started by a man standing on top of the rill. The rill had been trimmed down, and was thought to be quite safe. The Coroner's jury returned a verdict of accidental death. (4205/12.)

While engaged filling trucks at the 2,050-feet level of the Great Boulder Proprietary G.M., a man was struck, while barring out a large stone, by another stone coming away from higher up and falling through the chute door, striking him on the temple and fracturing his skull. The injuries appeared at first to be not very serious, but he succumbed five weeks later from an abcess on the brain resulting from the blow. A verdict of accidental death was found by the Coroner's jury. (4220/12.)

SURFACE.

At the Whim Well Copper Mine, West Pilbara, a carpenter was killed while at work on erection of the concentrating mill, by falling through the well on the top floor, owing to overbalancing himself while drawing a nail. The Coroner's jury found that deceased came by his death by accident caused by his own want of care, without any other person being blamable. (2569/12.)

While laying rails in a cut in a slimes dump at the Northern Mines Coy.'s Battery at Lawlers, a man working on a contract for excavating the slimes was killed by a heavy slip of dirt from the side of the cut, which was 18 feet deep, three feet wide at the bottom, and seven feet wide at the top. The Coroner's jury found no blame attachable to anyone, but were of opinion that a better system of working such a deep bank should be followed. The method used was undoubtedly a very unsafe one. (300/12.)

At the Great Boulder Perseverance a man was killed through being caught by a conveyor belt while attending to his duty of keeping the belt clear of sands. As no one witnessed the accident it is not known exactly how it occurred. The Coroner's jury returned a verdict of accidental death. The Inspector of Machinery considered the place more than reasonably safe, but has ordered further safeguards. (2544/12.)

DEATHS IN MINES RECORDED, BUT NOT INCLUDED IN THE STATISTICS OF MINING ACCIDENTS.

There were three instances of deaths of persons in mines which could not be considered in any way due to their occupation, and which therefore have not been included in the figures relating to persons employed in mines:—

A man was found dead at the bottom of a shaft of the Menzies Consolidated mine at Woolgar, having evidently fallen from surface. He had no business at the shaft, and this was so protected that no one could fall into it accidentally. The Coroner's jury found that he went to the shaft whilst suffering from a temporarily deranged mind, and no other explanation seems admissible on the evidence. As this is not an accident due to mining employment it is not included in the figures of mining accidents, though recorded as happening in a mine. (756/12.)

While playing on a dump at the Hannans Consols G.M.a boy touched a live high-pressure electrie wire and was killed by electric shock. The dump had lately been raised so that its surface was within five feet of the wire, and this was to have been removed. The Coroner's jury returned a verdict of accidental death, but added a rider finding that the

mine management showed carelessness in rendering the wires dangerous to life by building up a dump to within reach of the wires, and that they considered that more supervision should be given by the Mines Department and Inspectors to the installation and working of high-tension electric plants, also that in their opinion had the provisions of the Mines Regulation Act been strictly enforced the accident would not have happened. The boy was trespassing when the accident happened and had no business where he was. The wire was under control of the Kalgoorlie Electric Power Coy. After going into the case the Crown Law officers were of opinion that no action could be taken against any person in connection with this fatality. (1157/12.)

A boy, 15 years of age, not employed on the mine, was killed on the sand dump of the Great Fingall Proprietary Co.'s treatment plant at Day Dawn, by getting caught in the conveyor belt machinery. He was in the habit of bringing "crib" for his father and uncle, who were working on the cyaniding vats. He was last seen alive on top of the delivery end of the first conveyor belt, where he was seen to fall, and was found immediately afterwards at the bottom of the second conveyor belt with his head jammed between the driving wheel and the belt. There was no occasion for him to go near the conveyors, and these were reasonably well protected. (1830/12.)

SERIOUS ACCIDENTS.

Should a person be debarred for a period of 14 days or more from returning to his work at a mine through injuries received in the performance of his duties the accident is termed "Serious" (see Sec. 26 M.R. Act, 1906), although in the ordinary acceptation of the term the word "serious" would often be a misnomer.

Of three hundred and twenty-nine serious accidents reported for the year 1912 in the East Coolgardie Goldfield, only twenty-one were cases of breakage of the larger bones, permanent injury to eyes or limbs, or injuries likely to have lasting disabling effects. The others comprise a great variety of hurts of less serious description, such as bruises, cuts, broken and crushed fingers and toes, scalds, burn, jarred hands, poisoned cuts, shocks, smaller dislocations, strains, wrenches, etc., sufficient to cause the sufferer to be off work for fourteen days or more, but mostly not causing any permanent disablement.

EXPLOSIONS AND EXPLOSIVES.

During 1912 eleven persons received injuries recorded as serious from explosions. Two men were struck by stones thrown out by explosions, four injured through their tools striking explosives which had remained unexploded after firing out, and five through premature explosions.

FALLS OF GROUND.

During the year sixty-two men were more or less seriously injured by falls of ground. In one case the lode material was apparently under great compressive stress, which caused some rock to become loose and fall on the man. In eight instances the injuries were received while the men were engaged in the dangerous but necessary work of taking down loose ground after firing. In the majority of cases the accidents were purely accidental mishaps unpreventable by exercise of ordinary skill and care, and of a sort inseparable from mining.

IN SHAFTS.

Twenty persons were seriously injured in shafts. Seven of the accidents were caused through objects falling down the shaft, such as a truck, a bucket, and stones, while five men were injured through some of their limbs projecting while they were being conveyed to the surface. One man was injured while using a shovel, another through the spanner he was using slipping. In one case a descending baling tank struck a man who was working in the shaft, while in another a man inadvertently walked into the shaft, and one man started to leave the cage before it had reached the plat. A stage pole slipping was the cause of one accident, and a man while standing on a ladder in the shaft slipped and fell from it. A cage was hung up through the grippers catching the guides and caused injury to one man.

MISCELLANEOUS UNDERGROUND.

Two hundred and eighty-four persons were injured by miscellaneous accidents underground. In eighty-five cases the injuries were received while handling and loading skips and trucks, through fingers and bodies being jammed against shoots or other trucks; toes and feet run over, bodies struck by upsetting of trucks; men slipping and straining themselves while trucking, or lifting derailed trucks or material into trucks, large stones moving in trucks and injuring hands, and so on, the injuries being mostly wrenches, sprains, bruises, fractures of the fingers and toes, and cuts. In sixty-seven cases the injuries were caused through falling and rolling loose rocks and stones, such as runs of ore and mullock, while shovelling, or stones running down rills and ore shoots; and eight men received severe cuts while handling sharp stones. Twenty-three men were injured handling rock drill and coal cutting machines and parts of same, and ten by the stages on which machines were erected collapsing. Other falls in the workings from stages or ladders in rills, and passes and so on caused injury to fifteen persons, and twenty were hurt by falling tools and pieces of machinery. Flying splinters of stone and steel were responsible for twenty-one men being injured, while fourteen were hurt while handling timber. The remaining thirty cases were due to various accidental causes—jarring of hands, blows from tools, strains, and so on; a great number of these could have been avoided by the exercise of a little more care on the part of the injured party, but the majority must be regarded as purely accidental mishaps.

SURFACE (INCLUDING MACHINERY).

In and about the surface workings of mines one hundred and fourteen accidents occurred during 1912 from various causes. Three men were scalded by hot water and six burnt in various ways. Ten persons sustained injuries from falls caused by missing their footing, slipping and overbalancing; fourteen men were hurt by trucks and skips, by being jammed or struck by them, by them capsizing, or by the men sustaining strains while working them. Flying splinters injured two men, and two got their hands jarred. Falls of timber and pieces of machinery while being handled accounted for eight cases of injury. Twenty were caused by machinery in motion, three of these being caused by handling belts in motion. Twelve men were hurt while handling timber. Other causes of thirty-one accidents were strains from lifting heavy weights, tools slipping and inflicting cuts and

bruises, and so on. Most of them were mishaps of an accidental character, the only way of preventing which is the exercise of greater care and forethought on the part of the workmen, and were not from causes which could be effectively dealt with by restrictive regulations, with perhaps the exception of those due to handling belts in motion.

WINDING MACHINERY ACCIDENTS (WITHOUT INJURY TO PERSONS).

In addition to the accidents to persons through winding machinery already noted there were a number of mishaps in connection with winding during the year which were reported to the Inspectors of Mines under Regulation 11 of "The Mines Regulation Act, 1906," which fortunately were not attended with injury to any person. Particulars of these are instructive as showing the circumstances of accidents which in many cases might easily have resulted in injuries to men, and they are therefore now reported in some detail.

OVERWINDING.

When baling water with a tank at the Brown Hill mine of the Oroya Links G.M., the cage in the other compartment was overwound through an oversight of the engine-driver. (797/12.)

An overwind at the Golden Horseshoe mine, Boulder, resulted in a skip of ore tearing away the thimble of the detaching hook. The side grippers failed to hold up the skip, and it fell from surface to the 1,200 feet level. The blow against the head gear had bent the bar carrying the grippers so as to prevent them from acting fully, but they retarded the fall and little damage was done. (1766/12.)

At the Great Boulder Perseverance mine the skips were temporarily replaced by cages, and the engine-driver forgot this and ran the north cage up to the skip tipping gear. The cage was broken and the safety hook damaged, but not opened. (4075/12.)

A cage was overwound in the main shaft of the Morning Star mine, Mt. Magnet, through failure of action of the overwinding prevention device. (4277/12.)

An overwind took place at the Marvel Loch mine through the engine-driver leaving his winding engine unattended while he went to another one about 30 feet away. It was supposed that there was a leakage of steam past the starting valve, and that the starting lever came out of the middle notch and fell forward so as to admit steam to the cylinders. The detaching hook and safety grips acted, and no damage was done. (3399/12.)

A slight accident occurred at the Sons of Gwalia mine through overwinding a skip 18 to 24 inches too far, through the rope riding or taking a wrong lap on the drum. No damage was done. (4075/12.)

There was an overwind at the Princess Royal G.M., Norseman, owing to the engine-driver reversing his engine inadvertently. No damage was done. (4360/12.)

FALLS OF CAGE OR SKIP.

A.—Through Rope Breaking.

A winding rope broke at the Princess Royal mine, Norseman, while baling water, the total load being about 3.1 tons, the break being at the socket. A test at Midland Junction testing station of a piece of the rope taken from near the break showed it to be in bad condition, dry, and with wires rusted and corroded, but still with a breaking strain of 25.48 tons. The rope was 3 inches in circumference. The Inspector found it to be in fair condition higher up. The rope had been in use from time to time since 1904, but had done little work. The Inspector of Mines ascribed the accident to the wires having been bent back sharply over the rope to form a bunch in the socket, which was then made solid with molten white metal. The strain then came unfairly and unevenly on the sharply bent portion of the wires. (3292/12.)

A winding rope broke at the Brown Hill Extended mine while baling water. No men were in the shaft. The rope was an old one, discarded by the Oroya Brownhill mine. No damage was done. (3117/12.)

The winding rope at the White Feather Main Reef mine, Kanowna, broke while baling water with a tank, allowing the latter to fall to the bottom of the shaft. The rope was 7/8in. diameter, and breaking strain said to be 26½ tons when new. The load was about one ton. The rope appeared to have been kept well greased and looked well externally, but internally was found to be in very bad condition from internal corrosion. The regulations relating to care of ropes had not been well attended to, apparently on account of a misunderstanding between the owners and sub-lessee who had charge of the shaft. (3140/12.)

A quite new rope, in use for only 17 days, broke about 70 feet above the shoe while baling at the Royal Oak mine, Black Range. The shaft was only 135 feet deep, and the tank contained only 150 gallons, so the load was far below what ought to have been a fair one for a rope ¾in. diameter of breaking strain about 20 tons. The Inspector thought it hard and brittle at the break. A piece from close to the break was tested at Midland Junction testing station and found to be in good condition, very little worn, with breaking strain 18.58 tons. The breakage must have been due to some unperceived flaw. (4282/12.)

At Burbanks Birthday Gift the winding rope broke about 60 feet from the socket while baling water. The rope was corroded at point of fracture, and would better have been one made of heavier wires. Its certified breaking strain was 24.1 tons. (188/13.)

B.—Through mishaps to Winding Engine.

An accident in the Sons of Gwalia shaft, at Leonora, occurred through the engine-driver overwinding the south skip, and in order to let it back throwing the north skip out of gear while it was at No. 12 plat, loaded with about two and a-half tons of ore. Though he had screwed up the brake before unclutching, the north skip ran away, the brake not holding it, and did serious damage to the shaft. The Inspector of Machinery found that the south skip could not be released without the driver doing as he did or using jacks to turn the cranks of the engine to a more favourable position. and did not consider him to blame, but merely the weakness of the engine. The management were required to reduce the loads of ore in the skips, and to expedite the erection of the new winding engine already on order. (755/12.)

At the Ingliston Consols Extended G.M., Meekatharra, a cage was left on bearers at No. 5 level, and the drum put out of gear and left with the brake on. The drum was noticed to be revolving, and before the driver could put the brake on harder the rope had run off the drum. The pin holding the lever down may have been displaced or not put in. The practice of throwing the drum out of gear when the

cage is below the surface has now been forbidden. (4039/12.)

The drum shaft of the air-driven winch hauling in the blind underlay shaft of the Black Range mine broke inside the loose drum and allowed the empty skip to run away, the driver being unable to stop it with the brake though successful in stopping the other drum by which a man was being raised at the same time. The brakes were wooden-lined, and were taken up with a screw tightened from time to time by the drivers. The breakage proved to be due to an old flaw in the metal of the drum shaft, which could not have been detected by inspection. (4280/12.)

At the Great Fingall mine the loose drum on the winding engine ran through the brake, owing, it was supposed, to oil having got on to the brake path. The skip went to the bottom of the shaft, the rope broke from the drum and went down the shaft, two lengths of skids were pulled out, and the indicator gear on the engine was broken. (197/13.)

C.—From other Causes.

At the Golden Horseshoe mine the king bolt on the skip broke while hauling ore. The safety catches acted and held the skip, and no damage was done. (1443/12.)

At the Golden Horseshoe mine, Kalgoorlie, two accidents happened within a week of each other through the king bolts on the loaded skips breaking at the nut, and so releasing the ropes. The safety grips acted at once and held the skips, and no damage was done. Stronger bolts have since been put in and the design altered to dispense with the nut. (3116/12.)

The spur wheel of the winding engine at the North End G.M., Kalgoorlie, being found by the Inspector of Mines to be fractured at the boss and repaired with clamps, the engine was condemned by the Inspector of Machinery until a new spur wheel was fitted and the brakes made adequate. The mine management had not reported the breakage, and were prosecuted for breach of Regulation 11 under the M.R. Act, 1906, and fined £5 and costs. There had been great slackness in observance of the Rules and Regulations. (2314/12.)

(*a.*) The winding engine on the Eclipse shaft of the Oroya Links mine, Kalgoorlie, had an accident through breakage of three teeth from the pinion and a large piece from the spur wheel. The Inspector of Machinery had been dissatisfied for some time with this engine, considering its work too severe for it, and had been urging that it be replaced by a stronger machine.

(*b.*) The drum shaft of this engine also broke about two months later, though no reason could be seen for the fracture. (2954/12.)

A double-cylinder Holman hoist used in sinking a winze in the Great Boulder Perseverance mine broke down and would not act owing to studs working out of the bracket for the piston. A man was being raised at the time, who got on to the chain ladder and came up by it. (4063/12.)

ACCIDENTS TO SHAFT.

At the Great Fingall mine the skip pulled out 100 feet of skids and two centres, broke the shoes on the skip and bent both axles. (4278/12.)

A skip in the Great Boulder Perseverance shaft hung up at the 1,300-feet level, breaking several centres and bending its own frame. (1445/12.)

At the Great Fingall Consolidated G.M., Ltd., the skip fouled the skids below No. 7 level and pulled out 90 feet of runners and one centre. (4279/12.)

ACCIDENT TO ROPE.

At the Ivanhoe G.M., Boulder, the skip, with cage attached hung up in the south winding compartment, and about 300 feet of rope were lowered on it—on pulling up the slack a kink was formed and the rope broke about 250 feet above the shoes. Its breaking strain was 71.39 tons. It is not clear how the accident came about. (972/12.)

ACCIDENTS TO SKIPS.

A slight accident occurred at the Great Boulder Perseverance mine, Boulder, through one of the tipping wheels of the skip being torn off at the brace from some cause not ascertained. No other damage was done. (1444/12.)

PROSECUTIONS FOR BREACHES OF THE MINES REGULATION ACTS AND REGULATIONS.

(1.) A colliery manager was charged with a breach of General Rule 1 under 'The Coal Mines Regulation Act, 1902,' but the Bench held that there was a technical error in the complaint and dismissed the case. (302/12.)

(2.) The manager of a large mine was fined £25 and costs, £5 12s., for breach of General Rule 9 of Section 32 of 'The Mines Regulation Act, 1906,' Notice of appeal was given, but the appeal was not decided during 1912. (1858/12.)

(3.) A mining company was prosecuted for breach of Regulation 11, through not reporting an accident to its winding engine, and was fined £5 and costs, 2s. (2314/12.)

(4.) Another company was fined £2 with costs, £2 4s., for breach of Section 32 Rule (31), in not examining and testing cages and skips at least once in every two weeks and entering the results in the Record Book. (2781/12.)

EXEMPTIONS FROM SECTION 31, SUB-SECTION 4 OF THE MINES REGULATION ACT, 1906.

The number of these exemptions issued during 1912 has been restricted as much as practicable, but it was thought advisable to issue them in twenty-four cases in which it would have been a hardship to struggling mine-owners to have to employ fully certificated engine-drivers, and where there was little or no danger of accident. All the men allowed to have charge under these exemptions must first prove to the Inspector of Mines that they are thoroughly capable of handling and having charge of the particular machinery which they have to handle.

SUNDAY LABOUR.

The number of permits issued during the year for Sunday labour to be carried on in the mines has not been large, the total recorded for the year being 50 for the whole State. Of these, 34 were in the Cue district, and mostly from Sunday to Sunday in one mine, the Great Fingall Consolidated, in which there was very urgent shaft-sinking work in progress, which was considered to necessitate exemption in the interests of employment and mining progress in the district. Most of the other permits were for only small numbers of men and short periods.

NOTES ON SUNDRY MINES REGULATION MATTERS.

Riding on edge of Bucket.—Attention was directed to this question through an accident which occurred in the Great Fingall Consolidated mine, Day Dawn, in the No. 4 winze. (Files 3127/12 and 2182/12.)

Four men were being hauled up, and one of them, who was sitting on the upper edge of the kibble with his feet inside it, allowed his head to knock against the timbers, which caused him to fall off and roll down the winze about 100 feet. The angle of inclination of the winze is about 60deg. from the horizontal, but varies somewhat. The Inspector of Mines thereupon gave notice that the practice of riding on the edge of the bucket was dangerous, and that the men must not ride there. The management of the mine objected to this notice, and a deputation of the Chamber of Mines waited upon the Minister for Mines to support the objection. The winze was 740 feet deep, from No. 13 to No. 17 level, and the kibble ran on its side on greased skids, and had been working in this way for about five years, getting deeper and deeper without alteration of the method of working. The mine management wished to carry the matter to arbitration, but it was one on which the Inspection Department could not admit any question of the power of an Inspector of Mines to stop a practice which he considered dangerous, and notice was therefore given that the work going on in the winze was in contravention of General Rule (10) of Section 32 of the Mines Regulation Act, and that under General Rule (11) guides would have to be provided, and under General Rules (30) and (31) the skip must have side catches and safety appliances, and under Rule (40) must not carry more men than allowed by the Inspector, if men were to continue to be raised and lowered in it. These provisions of the Act are not subject to arbitration. The winze was the main entrance into all the lower workings of the mine, and it is obvious that a method of entrance which is not usually allowed except for temporary purposes, short distances, and small numbers of men when sinking winzes, and which is not considered good enough for shallow shafts sunk from surface, ought not to be permitted in a blind shaft underground of such considerable depth as 740 feet. An equally deep shaft from surface, with several levels from it, and fifty or more men employed in them, as in this case, would be required to have a proper winding equipment, and so should this one. The completion of the new internal shaft at an early date, however, is expected to settle the difficulty.

The South African Regulation on this matter (Mines Works and Machinery Regulations, 1911, No. 40) reads thus:—'40. No person shall ascend or descend a shaft or winze on the top of a cage or on the side, bow, rim, bale or carriage of any skip, bucket, kibble, truck, or other similar means of conveyance, whether loaded or unloaded, or on the top of a loaded or in a partially loaded skip, bucket, kibble, truck, or other similar means of conveyance; provided always that this regulation shall not be taken to prohibit the riding in partially loaded skips, buckets, kibbles, or other similar means of conveyance by persons engaged on sinking operations or on shaft repairs.' We might with advantage follow the South African lead in this regard, and a similar rule is therefore recommended for adoption.

Lighting of Plats.—On more than one occasion the Inspectors have had to complain that plats at shafts have not been as well lighted as they ought to be, and the Minister in consequence has directed them to insist upon improvement in this regard. In many cases where the ground is not too wet white-washing the roof and walls of the plats helps greatly in illuminating them.

Gates on Cages.—One of the less serious accidents of the year (4065/12) was due to one of the recently installed safety gates used on cages to prevent men falling from them, exemplifying the well recognised fact that every additional complication of apparatus introduced for greater safety bears with it a certain amount of liability of introduction of new causes of accident. Owing to a man pressing against it the gate was caught by the side of the shaft while descending, and lifted from its supports, falling down the shaft immediately afterwards. The braceman seems to have let the cage go with the catch not properly fastened.

Warning before Firing.—The need of very strict attention to giving warning before firing underground was well exemplified in the instance of one of the foremen in the Great Boulder Perseverance mine (1776/12) who received serious injuries and narrowly escaped with his life when going his rounds, through an explosion taking place in a shoot into which he was about to look. No warning had been given to him that anyone was firing. The man firing was a foreigner, who could speak very little English, and whose fault it appears to have been that warning was not given. Instructions were given to prosecute him for failing to give warning, and the manager for employing a man unable to speak English readily and intelligibly, but the foreigner left the district before the summons was served, and has not since been located.

Removal of Ladders before Firing.—One of the fatal accidents of the year directed attention again to the practice of many miners of removing the ladders from the bottom of winzes and shafts which are being sunk, just previous to firing, the firer then having to depend entirely on being hoisted on the bucket. In the particular case in question there was no reason to think that the presence or absence of the ladder would have made any difference to the accident as the firer was killed by an explosion before trying to get on to the bucket, but there have been many cases in which the bucket has been pulled up too soon in error, or has not been able to be pulled up, when the presence of the ladder would give the firer a chance of safety. Some years ago two men lost their lives when sinking the Queensland Menzies shaft at Menzies, through the air supply being cut off from the winch which was raising them up from the lighted charges in the bottom of the shaft, and as they had drawn up the chain ladder before going down to fire they were quite helpless. During 1912 there was a case reported of a Holman hoist failing to act through studs working out of the bracket for the piston, showing that it is not absolutely safe to rely on any machine as the sole means of getting away from shots.

The method often followed of attaching the lower end of the chain ladder to the bottom of the sinking bucket so that the latter pulls up the former with it is not altogether a remedy for the difficulty, as the ladder is taken away by the bucket, and if a man slipped off the bucket, or were knocked off by the

centres, or if the bucket were taken away without his noticing its loss, he would be deprived of both bucket and ladder. The only allowable practice, therefore, is to leave a ladder to the bottom of the shaft until the men are safely landed from the bucket, when the ladder may be drawn up out of the way of the shots by means of a rope. An amendment to this effect of General Rule (34) of Section 32 of "The Mines Regulation Act, 1906,' was introduced into 'The Mines Regulation Act Amendment Bill, 1912.'

"Running" of Fuse.—Few years pass without several accidents being reported due to charges exploding prematurely, which are commonly ascribed to defects in the fuse, which cause it to burn too rapidly or 'run.' For some years past there has been systematic testing in the larger mines of all fuse before issue to the men, tests being made frequently to determine its rate of burning and behaviour while doing so, and I have not yet heard of an undoubted case being discovered of the fuse 'running' during such trials. In a case of premature explosion in the Associated mine, Boulder, however, which, fortunately, did not cause injury to any person, the men noticed the fuse making a rattling noise after being lighted, which would probably indicate that it burned with a rapid succession of short explosions, and was therefore defective. It seems undoubted that in this instance there was little room for error as to the time taken by the fuse in burning and that it was much shorter than expected, so that this seems to have been a fairly clear case of fuse 'running.'

Use of Gelignite Chips in Lighting Fuse.—Another premature explosion, unfortunately attended with loss of life to one and very serious injury to another man, was thought by the firer to be due to the explosion being fired by the dropping on the charge of the little lighted chip of gelignite used for starting the fuses. This cause of explosions is possibly more common than expected, and should be very carefully provided against by firers.

"Chairs" in Shafts.—In the Transactions of the Australasian Institute of Mining Engineers, Vol. XIII., paper No. 172, Mr. W. E. Wainwright has described an electrical system patented by him throughout the Commonwealth of Australia, by which lamps in the engine-room and plats underground are lighted or extinguished accordingly as the chairs are 'in' or 'out' of the shaft. The arrangement seems to be a fairly simple one, and is worth attention of mine managers.

Gates on Doors on Plats, and Prevention of Stones falling while loading Skips.—Since the general introduction of skips into vertical shafts, as well as inclined ones, it has become increasingly necessary to provide protection at plats against the small falls of stones, which are apt to occur notwithstanding the greatest care taken in loading. It has been found that falling stones sometimes zig-zag in their course from side to side of the shafts, and may be deflected into the plats to the danger of men there. The *New York Engineering and Mining Journal* of June 15th, 1912, described the gates in use at some of the Anaconda Co.'s mines at Butte, Montana, U.S.A., for protecting the plats, and a somewhat similar arrangement has now been adopted in some of the Boulder mines. It is manifest that first attention in such cases, however, should be directed to preventing to the utmost the possibility of any stones escaping down the shaft while skips are being loaded and sent away, as otherwise no work in the shaft can be carried on with safety while winding of ore is in progress, except under a good pent-house or in compartments completely closed off from those in which the winding is going on. The first essential, therefore, appears to be to devote care and ingenuity to the arrangements for loading the skips, so that spilling of ore may be absolutely prevented, rather than to build protective doors against falling stones, but as long as the latter do get into the shaft at times it is clear that doors on the plats become a necessity, and their provision may have to be enforced by the Regulations. That the damage done by falling stones during skip loading is not by any means negligible was exemplified during the year by an application being sent to this Department by a manager of a large mine to be allowed to remove his signalling wires out of the winding compartment of the shaft, as they had been cut and broken repeatedly by falling stones. General Rule (12) (*c.*) of Section 32 of 'The Mines Regulation Act, 1906,' requires a line or other approved appliance to be provided to permit danger signals to be communicated to the engine-driver from every portion of the shaft, and it is clear that this cannot be complied with between levels if the appliances must be kept out of the winding compartments. It was suggested by the applicant that the knocker lines could be reached from the skip or cage in the event of the latter being hung up in the shaft if they were in the ladder compartment adjoining, but in most of the shafts on our goldfields only one of the winding compartments is adjacent to the ladder shaft, and the latter could not be reached at all from the other. Further, if the partition between the winding compartments and the ladder shaft were not made a perfectly close one there would be constant danger that the falling stones might bound into the ladder compartment, and make this unsafe for use as a travelling way. It is hard to understand any manager contemplating with serenity the frequent fall of stones from the skips as being a matter of course, as, apart from the danger to persons, one never knows what damage they may do to the lining of the shaft and the skids, not to speak of other less exposed loading shoots, plat doors, and so on. It is very evident that prevention rather than cure is the proper policy, and improvement in the means of loading the skips is therefore urgently called for. It must be remembered also that doors on the plats may interfere very seriously with the ventilation of the mines, and that this important matter also has to be studied closely when considering their use.

Signalling from Cage.—During the year a number of experiments have been made by Mr. A. G. Rosser, with a little monetary assistance from the Department, in trying his method of communicating signals from cages in shafts to the engine-rooms. The device consists of a strong steel rope signal cord fixed at the lower end below the lowest level to which it is to work, and kept under tension near the top of the poppet heads by being attached to one end of a lever, the other arm of which is heavily weighted to more than counterbalance the weight of the rope. From the lever another wire runs into the engine room, and the motions of the lever are there reproduced to make and break electric contacts and thus ring a bell. In order to steady the signal rope it is attached to the wall of the shaft at intervals by short lanyards fastened to the rope so as not to interfere with the free travel along it of the pulling apparatus in the cage. This consists of two small grooved wheels so

fixed to one arm of a lever attached to the side of the cage that, when not required, the signal rope runs freely between opposite sides of the wheels without more than lightly touching them from time to time as the rope sways about. The other end of the lever has a handle attached to it, and when this is pulled the wheels bend the signal rope in opposite directions, thus shortening it and communicating a sharp pull to the rope and thus to the engine-room bell. The rope, however, runs freely over the wheels while being pulled, so that the fact that the cage is moving rapidly does not cause undue strain upon it, the stress on the rope being the same as if this were running, at the speed of the cage, over two pulleys similarly placed but fixed, by which it was bent to the same degree. The experiments were not completed during last year, but early in the present year there was a working trial of the appliance in my presence in Chaffers G.M. shaft, Boulder, to a depth of 1,600 feet. Signals were found to be given sharply and clearly when the cage was at rest or descending, but rather badly when it was ascending at a rapid speed, as the ascending motion of the cage greatly neutralised the pull on the rope. The defects probably can be overcome, however, and the apparatus appears to have considerable promise if it is thought that there are enough advantages in signalling from the cage to make it worth while to adopt this system. It has been arranged that the apparatus will be subjected to practical working trial for some months to see if it has merits which would warrant its common adoption.

Ventilation of Deep Mines.—This subject continues to give much anxiety to the Inspectors of Mines, as conditions in several of the deepest mine workings at times have approached very close to the maximum limits of temperature and humidity allowed by the Regulations. In one mine an ejector was used to circulate the air, but at first the air was simply moving round in a short circuit without being much mixed with fresh air from the surface. Later on two fans were put in, with considerable improvement, and still later the natural ventilation was greatly bettered by the completion of winzes to the lower levels. There are a good many places, nevertheless, in most of the deep mines where more attention still requires to be devoted to improvement of the ventilation. In some of the deep underlay workings, especially from internal shafts, it is a difficult matter to maintain good natural ventilation, and the time seems very near at hand when mechanical ventilators will have to be insisted upon in many cases.

Working under Stages.—In my annual report for 1911 reference was made to the practice of allowing men to work under the stages on which rock drills are being operated, and several accidents during 1912 have drawn attention again to this matter. In one case already referred to among the fatal accidents (1858/12), a man was killed while working under or very nearly under a stage, and it was contended by the shift boss that the machine men ought to have kept the place under observation to see to the safety of the shovellers. In this instance the presence of the stage had nothing to do with the accident unless it may be that the jarring of the boring helped to cause the fall of rock which killed the shoveller, but as the rock fell away from the side of the stope below the stage the machine men could not well have seen it without coming down from their stage. The removal of the loose rocks allowed the piece of the wall to fall away, and it is easily seen that a slip of rock from a quite similar cause might very well bring down a stage also, thereby indicating a not unlikely source of danger both to shovellers and machine men if loose rock is removed from below while men are working on the stages. In another case (283/13) three men were working putting up a rock drill, and one of them then went down and was passing underneath the stage when it collapsed and fell upon him, causing somewhat serious injuries. In yet another instance (3894/12) a man was rigging his machine on a stage when one of the poles broke and the stage collapsed. If men had been working under it they probably would have been injured as well as the man on the stage.

Fires in the Lake View Consols Mine, Boulder.—Two outbreaks of fire underground were recorded during 1912 in the Lake View Consols mine, the second being a recrudescence of a part of the first not completely extinguished. Fortunately neither fire was very serious and there were no fatalities, but the smoke and poisonous gases stopped work for some days and gave a great deal of trouble until the fire was burned out. A large number of men working to confine and regulate the smoke were incapacitated for short periods by the effects of the gases, but none seriously. The following description of the fire was given by Inspector Hudson, dated 26th June, 1912:—

"On the morning of the 6th instant the Lake View Consols notified this office that a fire had occurred at the 1,400ft. level. Immediately on receipt of the information I went to the mine and found that the level timbers about 900ft. from the shaft were on fire. The air current was from the shaft to the fire; with the aid of the natural air current and compressed air the smoke and gases were driven forward until it was possible to reach within about thirty feet of the south end of the burning timber after all openings through which smoke was entering the level from the stope were stopped, the air pipes were connected to a pump at the plat, water being obtained from the cistern. A hose was connected to the end of the air main, and water applied to the fire.

"It was found that the gases were so strong that a man could not use the hose for more than about one minute. After using a considerable amount of water the gases became very bad, CO_2 was very noticeable. After several men were overcome by fumes the men were withdrawn.

"On the morning of the 7th it was decided to build a dam in the level and flood it; after considerable difficulty this was done. On the morning of the 8th it was found that the air was fairly clear of gas, and men were employed sending up ore, mice being used as a safeguard. The air continued to improve, and on 10th it was found possible to work the mine full handed.

"The Associated and Great Boulder mines were connected with the Lake View Consols at several levels, both of these mines being the upcast for the Lake View Consols. On the 6th these connections were kept open, which greatly assisted in allowing the fire being reached. On the 7th and 8th steps were being taken to close all openings between the mines; this was completed on the 8th. The gases were such that the men had to be taken out of the Great Boulder Perseverance and Associated on the 6th and 7th.

"The men employed at the fire and closing the connections were affected by gas. It is estimated that thirty men were overcome by fumes, while all the men employed were more or less affected. The men were immediately attended to by men who have

been trained by St. John's Ambulance Association and did splendid work. The occurrence of this fire demonstrated the necessity of maintaining trained men on the mines capable of using rescue appliances. The rescue appliances of the Golden Horseshoe G.M. were early on the mine, but were not as valuable as they should have been owing to the men not being conversant with their use. The men employed on the mines are to be complimented on their good work in suppressing this fire; the work was done willingly and at great risk to themselves.

"On the 18th inst. the gases became so heavy in the Lake View that the men had to be again withdrawn. On the 19th the air had cleared sufficiently to allow the scene of the fire being reached. It was found that a fall of ground had occurred over the smouldering mass of ore and timber, and that the timbers were again burning; this was quenched, and work has gone on steadily.

"It is estimated that six sets of timber have been burnt. The level was timbered with saddle-back sets of salmon gum and logged with gimlet wood poles."

New Regulations issued during 1912:—In March an additional general rule was made under Regulation 4 requiring that when required by the Inspector gates shall be securely fixed upon cages during such time as they are employed at the change of shifts for raising or lowering men.

In June another new general rule was made under the same regulation requiring spraying appliances to be used on tailings dumps when the dust from these is a nuisance in the opinion of the Inspector, and he has given notice accordingly.

Inspection of Electrical Equipment of Mines.—The rapidly increasing use of electrical power in mining operations is making it more and more necessary every year that there should be a specially qualified Inspector appointed to supervise the electrical equipment of the mines. The Government Electrician has been of the greatest assistance to this Department in dealing with such questions as have arisen hitherto in connection with electrical plant and has himself inspected many of the mines' appliances, but much closer supervision seems now necessary, and it is recommended that there should be a special appointment for the purpose.

Regulations relating to Electricity.—The unfortunate accident by which a boy was killed, as described earlier in this report, by getting upon a high dump of slimes and touching a live high pressure electric wire, was referred to the Government Electrician to devise further regulations to prevent any similar accident from happening again, and he has proposed the following additions to Regulation No. 33, viz..—

"33a. No overhead electric wire carrying current for power or lighting circuits exceeding low pressure shall be erected so that the distance of the wire shall be less than 18ft. from the surface of the ground.

"33b. No overhead electric wire carrying current for power or lighting at low pressure shall be less distance than 14 feet from the surface of the ground.

"33c. Where it is necessary to erect overhead wires at less distance from the surface of the ground than stated in paragraphs 33a and 33b, special permission may be given by the Inspector, who will decide as to what precautions are necessary under the circumstances.

"33d. Before any person shall erect or cause to be erected any dump, material or structure under or near any overhead electric wire, and which would tend to reduce the distance between the electric wire and the new surface of the ground to less distance than stated in paragraphs 33a and 33b and 33c, notification shall be sent to the Inspector who, if satisfied that due precautions have been taken, may permit a less distance during the alteration, but the distance stated in paragraphs 33a and 33b and 33c shall be afterwards maintained."

These proposals are now recommended for adoption.

Persons appointed to inquire into Accidents.—When an Inspector of Mines is not at once available to examine the scene of an accident, it is provided by Sec. 27 of "The Mines Regulation Act, 1906," that the Warden or Mining Registrar may appoint a person to do so, and it has been rather usual for persons of good repute in charge of mines to be selected for this duty. In a case at Meekatharra, however, exception was taken by the local branch of the A.W.A. to the appointment of a mining manager to inspect the scene of an accident in a mine not far from his own, notwithstanding that he was a Justice of the Peace and the Acting Coroner who would hold the inquest, on the ground that he might be biassed, consciously or unconsciously, in favour of another manager who was his neighbour. To remove any possible objection on this score the Hon. the Minister for Mines thereupon directed that instructions should be sent to Wardens and Registrars that in making such appointments mining managers were not to be appointed if any suitable disinterested person were available, and a circular was issued to them accordingly.

Mines Regulation Board.—Several of the matters mentioned in the foregoing paragraphs might have been dealt with departmentally by framing regulations, but action on them was delayed in the hope that, by the establishment of the Mines Regulation Board proposed in "The Mines Regulation Act, 1906, Amendment Bill, 1912," they should first be subjected to fuller discussion by representatives of all the parties most interested, and, if required, that practical tests should be made in some of the cases to obtain data necessary in order to enable a sound conclusion to be arrived at. The Bill, however, was introduced very late in last session and did not pass, and accordingly the question of the appointment of a Board has been hung up until the Bill is again brought forward. There are a large umber of questions continually arising in connection with the working of mines in which unity of aim and combined effort by all parties concerned are essential in order to obtain any advance in improvement of mining conditions.

Rescue and Ambulance Work.—Very good work continues to be carried out on most of the larger mines by the local branches of the St. John Ambulance Association in training men to render First Aid to the injured, and efforts are now being made to extend this work to include the formation of Rescue Corps and establishment of Rescue Stations for training men in the use of apparatus enabling them to enter poisonous gases resulting from fires underground or any other cause. In the Mines Regulation Act Amendment Bill, 1912, it was pro-

posed to give full powers to deal with this matter by regulations rather than by at once introducing a series of provisions into the Act itself, which would be unalterable without an amending Act. The best lines of action to be followed in this matter, to meet our local conditions, cannot be said to have been yet at all thoroughly worked out, and it seems advisable therefore to handle it by regulations, which may be easily amended as experience shows the necessity, rather than by rigid statutory enactments. The Mines Regulation Board under the same Bill was intended to be the body which would fully discuss all details of proposed regulations before these would be finally recommended for adoption by the Government.

Acting State Mining Engineer.—During the early part of the year I had the misfortune to be laid up with a serious illness and had to go on sick leave, and the duties of the office were carried on for the time being by the Assistant Government Geologist, Mr. H. P. Woodward, of whose assistance I have to make grateful acknowledgment.

APPENDICES.

Appendix No. 1: *Report on Victorious and Gimblet Mines at Ora Banda.*—This report was made in 1913 but is included with Annual Report for 1912 in order to be published this year instead of next.

Appendix No. 2.—Details of the year's transactions as to Expenditure under "The Mining Development Act, 1902," and for allied purposes, from the Mining Development Vote are given in Appendix No. 11 to this report, except that several are not included in which the negotiations had not been completed during the year, or fell through without being completed.

Appendix No. 3.—Report by Inspector Hudson on the Murphy Rock Drill.

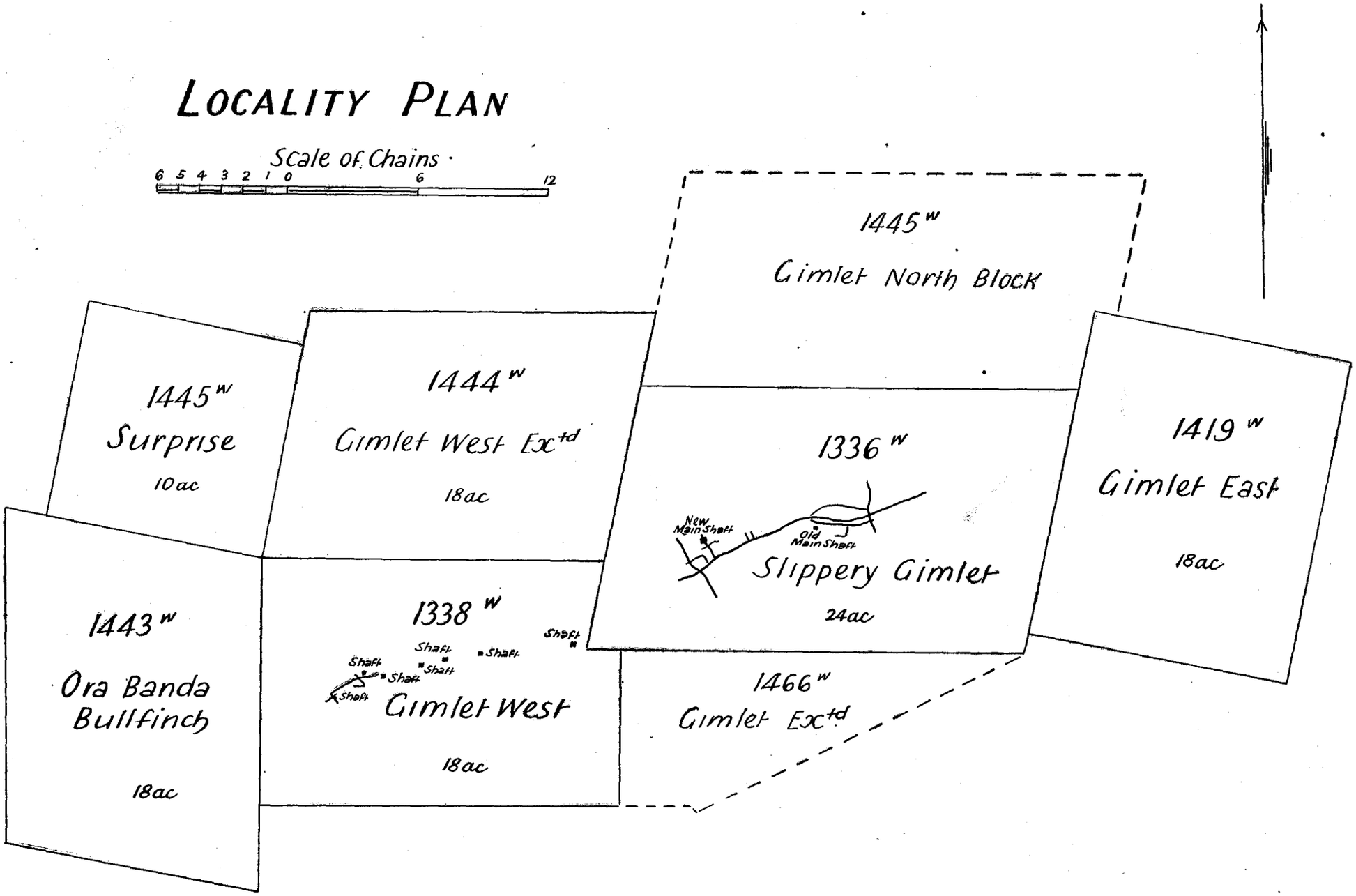
I have, etc.,

A. MONTGOMERY, M.A., F.G.S.,
State Mining Engineer.

LOCALITY PLAN

Scale of Chains

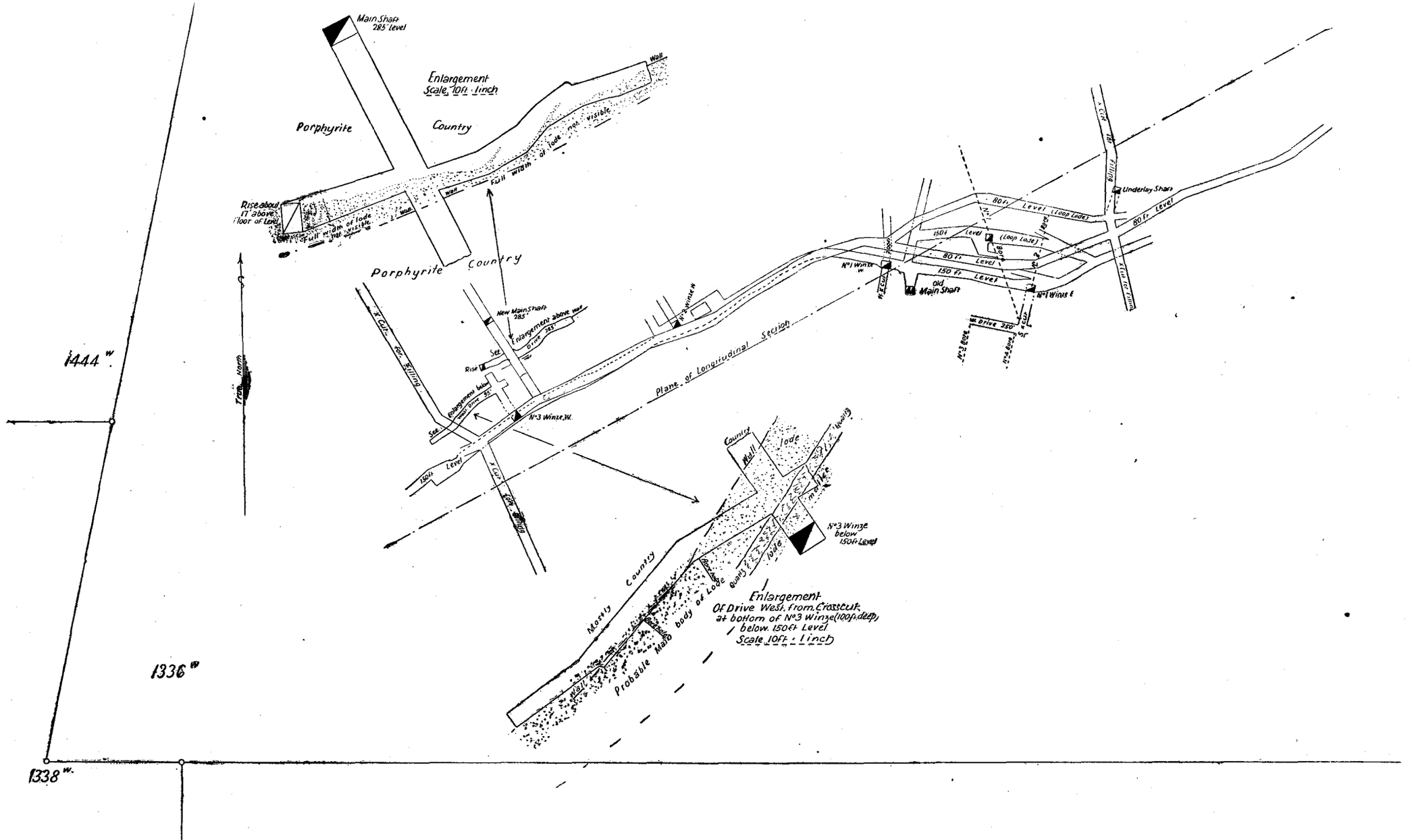
6 5 4 3 2 1 0 6 12



CIMLET COLD MINE

Plan of underground workings.

Scale of Feet

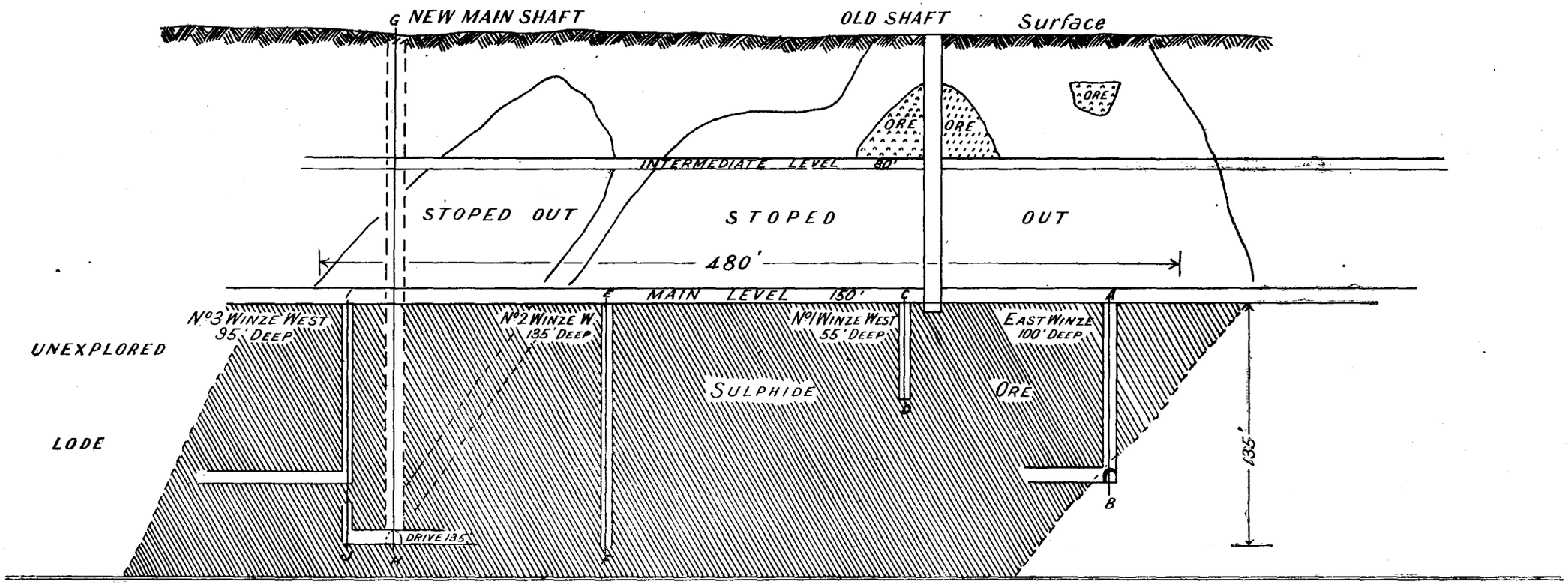


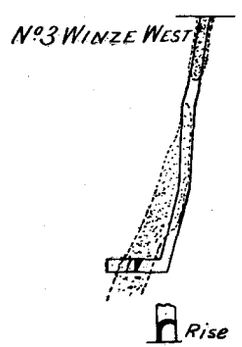
— GIMLET GOLD MINE —

— LONGITUDINAL SECTION —

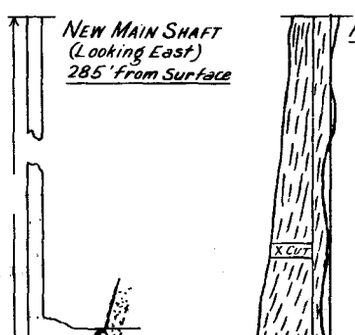
40 30 20 10 0 40 80 120 FEET

— Scale —

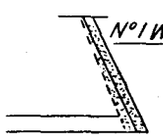




CROSS SECTION I-J (Looking West)



— CROSS SECTION E-F (Looking East) —



— North X Cut in country —

— CROSS SECTION C-D (Looking East) —

— CROSS SECTION A-B (Looking East) —

APPENDIX No. 1.

REPORT ON "VICTORIOUS" AND "GIMBLET" MINES AT ORA BANDA.

The Secretary for Mines.

In view of the great interest which is being taken by the mining public in the recent good development at the Gimblet South Extended mine of the Associated Northern Blocks (W.A.), Ltd., Company, at Ora Banda, I made a short visit to the mine on 3rd inst., and now submit the following notes upon it. They should not be regarded as a formal report, however, for I went through only part of the mine, for general information as to the position of affairs, and without any idea of taking the considerable time in examining the lodes and workings which would be necessary to enable a regular report to be given. The main features of the ore-occurrence are readily seen, and as they present several points of unusual interest some remarks upon them are in order even at this stage.

The main lode of the mine is a very large "formation" up to 50 and more feet in width, running through the "Gimblet South" and "Gimblet South Extended" leases in a direction approximately E.N.E. and W.S.W. In the latter lease and another adjacent to it there is also another, the "Victorious" lode, running about W.N.W. and E.S.E., which is of much smaller size than the first, but in the earlier prospecting operations was believed to contain ore of better value. Both lodes are mostly of soft oxidised ferruginous lodestuff in the existing workings, but in the adjoining South Gimblet lease hard sulphide-bearing material has been met with in parts of the mine below the oxidised stuff. In the Gimblet South Extended, or as it is more usually now called, the "Victorious" mine, there has as yet been very little sulphide-bearing ore met with, the lodestuff being very thoroughly weathered and oxidised down to the No. 4 or 365-feet level. The containing country is a hard porphyrite, which owing to kaolinisation of its large crystals of felspar at the shallower levels has prominent white spots in it, and so has obtained the local name of "native cat" rock. At the No. 4 level the felspars are but little altered by weathering in the very hard rock seen in the chamber of the main shaft, and appear as dark glassy spots instead of opaque white ones. In the crosscut at this level, however, the country becomes weathered to soft brownish clayey stuff alongside the lode and in the "horse" between the new lode yet to be described and the main one.

The existence of oxidised and weathered material to such a depth as over 365 feet is very unusual in the mines of this State, the only other case of equal or greater depth of oxidation which recalls itself to my memory being that of the big iron lode at Mt. Caudan, in the Parker's Range District of the Yilgarn Goldfield, where recent diamond drilling showed very complete oxidation to a depth of about 400 feet below surface, though the water-level was at about 170 feet. The large lode of the Great Victoria mine in the same district is similarly oxidised to 300 feet though the water level was at about 250 feet. In the "Victorious" mine the depth of the water level was not ascertained exactly by me, but was somewhere about 200 feet from surface. In all three of these cases the lodes are of unusually large size, and therefore present better chances of ready oxidation to a depth than smaller ones, but it is probable that there have been also considerable variations in the horizon of the water level throughout the country during comparatively recent geological times, which would allow of oxidation proceeding to greater depths than seems readily possible with the water-level in its present position. From the appearance of the weathered material at the No. 4 level, however, it seems unlikely that the weathering of the lode will be found to persist much deeper than at present, and a change to sulphide-bearing ore must be anticipated before the mine is much deeper and probably within the next 50 feet or so.

In the neighbouring "Gimblet" mine, the sulphide present is largely pyrrhotite, and the sulphide-bearing ore is quartz and cherty transmuted and silicified country rock, altered by metasomatic reactions. The best parts of the "Victorious" lodes as at present visible, are mainly made up of quartz and brown oxide of iron closely intermingled, derived no doubt from a silicious lodestuff heavily charged with pyrites, and contain a good deal of dark-coloured quartz, of finely granular structure like quartzite, as well as lode-quartz of the sorts usual in our lodes. In parts of the main lode there is a great deal of clayey material, much stained with iron oxide, which probably represents country rock which has been crushed between the walls of the lode and altered by being permeated by the lode-forming solutions. These clayey portions seem generally to be of less value in gold than the quartzose parts, and at greater depth will probably be represented by rock little different in appearance from the enclosing "country," but carrying numerous quartz veins.

In crosscutting from the main shaft at the No. 4 level to cut the main lode a new lode was met with which had not been seen at the upper levels. This was found to contain good values in gold, and has been driven along for about 200 feet east and over 40

feet west. The values are given in a report in the *Kalgoorlie Miner* of 3rd inst., as follows:—

		shillings.	
West drive—			
1st 11 feet	.. ..	35	per ton
11—30 feet	.. ..	50	„
Then the lode became poorer.			
East drive—			
0— 9 feet	.. ..	30	„
9— 14 „	.. ..	100	„
14— 19 „	.. ..	4	„
19— 23 „	.. ..	16	„
23— 28 „	.. ..	30	„
28— 31 „	.. ..	22	„
31— 36 „	.. ..	55	„
36— 41 „	.. ..	50	„
41— 46 „	.. ..	52	„
46— 61 „	.. ..	75	„
61— 66 „	.. ..	80	„
66— 85 „	.. ..	60	„
85— 95 „	.. ..	80	„
95—125 „	.. ..	237	„
125—130 „	.. ..	210	„
130—135 „	.. ..	260	„
135—140 „	.. ..	250	„
140—145 „	.. ..	260	„
145—150 „	.. ..	240	„
150—155 „	.. ..	200	„
155—160 „	.. ..	220	„
160—165 „	.. ..	260	„
165—170 „	.. ..	180	„
170—175 „	.. ..	300	„
175—180 „	.. ..	460	„
180—185 „	.. ..	260	„
185—190 „	.. ..	160	„
190—200 „	.. ..	low values	

The average width of this lode is about nine feet, from which it is seen that the drive has proved a very important and valuable ore-body. Going eastward the new lode runs into the main lode about 190 feet from the cross-cut, and the rich ferruginous ore of the former gives place to the poor clayey lode-stuff of the latter. In the end of the drive at the time of my visit, however, there was still some of the rich ore, leading to a hope that the lode might continue along the side of the main one. It seems more likely, however, that the rich vein is faulted by the main lode, but more light will soon be thrown on this matter as work progresses.

Three rises have been put up in high values upon the rich lode, which is found to have a considerable underlay to the north, thus soon rising into the nearly vertical main lode. Winzing has not yet been attempted below the level on account of the large amount of water to be pumped out, the level making altogether some 30,000 gallons per day. One of the rises was connected on the day of my visit with a winze on the north wall of the main lode, sunk nearly vertically; the rise was in silicious and ferruginous ore of high value, and the winze in white clayey material of low grade. Unfortunately, I was a day too early to see the junction of the two lodes in this rise and winze after the connection had been completed, and so could not see what evidence there was as to which lode penetrated the other. The presumption appeared to be, however, that, as in the level, the main lode (or at any rate the north wall portion of the main lode), was the younger lode-formation and had cut through and faulted the rich lode. The point is of much interest, as on the true interpretation of the evidence visible at the junction of the lodes depends whether there is any reasonable expectation of the new lode being found again on the south side of the main lode and possibly rising right to surface. There are several different possibilities—

(1.) The new lode may be of entirely older date than the main lode and may have been shorn through by it, with or without faulting slip. It would, however, seem more probable than not that there should be considerable faulting in such a case, and there is at present nothing to show whether the portion of the new lode south of the main one should be expected to have been thrown down or thrown up by the faulting. The possibility of a continuation of this rich ore-body on the south side of the main lode seems quite good enough to warrant considerable seach for it, unless later developments show that one of the other possibilities next to be mentioned has evidence in its favour strong enough to allow the present hypothesis to be discarded.

(2.) The new lode may be of younger date of origin than the main one. In this case it would be reasonable to expect to find it continuing into and perhaps through the main body. It might happen, however, that even in this case there should have been some subsequent movement of the walls of the main lode causing more or less faulting of the new lode, and the fact of the latter cutting off against the main lode should not be too hastily accepted as final evidence that the new one is not the younger in date of formation.

(3.) Parts of the main lode are very like the new lode in the composition of the ore contained in them, and a third possibility is that the new lode is really a branch from an older portion of the main lode, and that subsequently through fresh movement along the main lode fissure the latter lode has been greatly widened, and the older part much disrupted and mixed with country rock and newer lode material, a condition not uncommon in many lodes of this State. If this should be the real position of affairs in continuation of the new lode could be expected on the south side of the main one, and the new lode should be regarded as a "dropper" into the north wall.

The mining operations in progress will soon throw much more light on these and other possible explanations of the problem as it now presents itself. On the little evidence yet available the probabilities seem to me rather more in favour of the third of the above possibilities than either of the other two, but there is really far too little yet known to allow any definite opinion to be formed.

Some of the rich ore shows gold very freely and in the specimens shown to me this was mostly spongy gold, very like that often found in the oxidised portions of some of the telluride-carrying lodes of Kalgoorlie. It has not come under my observation anywhere in the State that similar gold has been found in the oxidised parts of any lodes which subseqently have been found to contain no telluride of gold in the sulphide zone, and this form of gold has not been observed, so far as I am aware in any of the places in which there is strong evidence of the deposition of gold as a result of secondary enrichment. Telluride of gold is almost the only mineral likely to produce such spongy gold by its oxidation, and there is therefore, a good deal of likelihood that the rich new lode will be found to carry this mineral in the sulphide zone. The next level will probably settle this possibility.

The new lode carries high values for a fair length and width as shown by the measurements and distances above quoted, and if its values are maintained below the oxidised zone it will be a very valuable addition to the State's producers of gold. It seems to me that the chance of the values persisting below

the zone of oxidation is a very good one, especially as very good values have been obtained in the sulphide ore of the adjacent Gimlet mine more than 100ft. below the oxidised material.

The main lode as previously mentioned is a very large one, being worked for a width of about 50 feet. The values are somewhat low, the returns being about 16s. to 22s. per ton, but the lode is soft and easily worked and milled, so that good profits are anticipated even from this low grade stuff, and there is enough of it proved to justify extensive mining operations, even if it were to be found that the ore in the sulphide zone should become too hard and poor to be worked. To the end of 1911 the leases yielded the prospectors 740 tons of ore, returning 875.42oz. of fine gold, and during 1912 the Coy.'s official returns are 22,913 tons crushed for 5,256.19 ozs.; total 23,653 tons treated for a return of 6,131.61 fine ozs., an average of about 22s. per ton. The return for January, 1913, will be much higher, owing to the good ore from the new lode included in it. The returns for last October and November published by the Chamber of Mines, give total working expenses as 10s. 3d. and 11s. 8d. per ton respectively, exclusive of development and capital expenditure. The values recovered for these two months are given as 18s. 10d. and 18s. 3d. per ton respectively.

The mine has a battery of Huntington mills, in which the ore is crushed with cyanide solution, and is then subjected to continuous slime treatment, the coarser sands being reground in Forwood-Down pans. The slimes are treated by vacuum filtration on Ridgeway filters of the latest type. For the harder ore, which is beginning to come in in parts of the mine, it is understood that Holman stamps will be erected. The new lode will pretty certainly require that provision will be made for treatment of sulphide-bearing ores.

The occurrence of the best gold values in this mine is near the junction of the Victorious lode with the main one, a feature which exhibits a similarity to many of the best ore deposits of the Kalgoorlie field. As in many cases in the latter field also the actual junction of these two lodes is not clearly seen, the Victorious lode apparently breaking up as it comes to the main one without making a clear junction anywhere. This point seems worth noting, as there is some reason to think that the best values in the adjoining Gimblet mine are also near a junction of two similar lines of lode, nearly parallel with those of the Victorious mine, and if further observation bears this theory out, search for such junctions would become an important matter in prospecting the field.

A. MONTGOMERY, M.A., F.G.S.,
State Mining Engineer.

8th February, 1913.

The Secretary for Mines.

The Hon. the Minister for Mines having directed that an examination be made of the Gimblet mine at Ora Banda in order that he might be placed in a position to deal with an application made to him by the owners, Messrs. Friedman and Johnson, for assistance from the Mining Development Vote in equipping the mine with necessary machinery, I went to Ora Banda on 30th ult., with Mr. J. H. Johnson, and spent three days underground in examining the workings and sampling some of the more important places.

The mine was the principal producer of gold in the Ora Banda district up to the time of starting of the adjoining "Victorious" mine on a much larger scale of operation by the Associated Northern Blocks (W.A.), Ltd., Coy. Up to the end of 1911 the Gimblet leases, 1336W, 1338W, and 1419W had yielded 9,049.15ozs. of fine gold from 27,845.50 tons of ore crushed; this return being at the rate of 6½dwts. of fine gold, worth 27s. 6d. per standard ton. This return has been by amalgamation only, the tailings not then having been treated by the cyanide process. The tailings are estimated by the owners to have an average extractable value of about 18s. a ton.

During 1912 the mine showed no gold production, the owners having worked out the bulk of the oxidised ore above the 150ft. level, and being confronted with the necessity of providing plant for treatment of sulphide ores, which soon made their appearance in all the winzes sunk beneath that level. For a time during 1911 the mine was under option of purchase by the Oroya-Links Ltd., Coy., who sank several winzes, and otherwise tested the lode below the 150ft. level, and subsequently another option was taken by the Sons of Gwalia South G.Ms., Ltd., who sank a new main shaft to the 285ft. level, and drove on the lode at that depth. According to Mr. Johnson upwards of £12,000 were expended by the option-holders in their operations, and his estimate that the development work done by them—of permanent value for the opening of the mine—is worth £8,000, does not appear to me to be unreasonable, although, doubtless, the same work could be done for a good deal less money under circumstances more favourable for rapid and systematic working. Neither of the option-holding companies, however, decided in the end to complete purchase of the property, their reasons being, doubtless, such as seemed good and sufficient to themselves, and not necessarily reflecting unfavourably upon the value of the mine. Copies of their assay plans have been furnished to me by Mr. Johnson, and their sampling results are referred to more fully later on in this report.

The plans and sections herewith will serve to show the extent and position of the mine workings. The principal operations have been on lease 1336W at and near a part of the lode where this shows a very distinct bend. The usual course of the lode as seen in the drives upon it, and revealed by the prospecting shafts and trenches along its outcrop on surface, is approximately E.N.E. by W.S.W., but at the bend referred to it turns nearly to E.S.E. by W.N.W., and the lode is divided into two main and several less important branches, which come together again going eastward, after which reunion the first mentioned

course is resumed. The turn in the course of the lode is accompanied by a change in its dip also, from nearly vertical in the western drives to about 70deg. southerly at the bend. It may have some significance that in the neighbouring "Victorious" mine the courses of the main and "Victorious" lodes are nearly parallel with the two shown by the Gimblet lode, the sudden bend being strongly suggestive of a junction or intersection of the E.-N.-Easterly line with one running E.-S.-Easterly. In my previous notes on the "Victorious" mine attention has been drawn to the resemblance in this feature between these lodes and many of the best known ore-occurrences of the Kalgoorlie field, where the frequency of the occurrence of the oreshoots in the vicinity of the junctions of two lines of lode has often been noted.

The Gimblet lode traverses a belt of country of igneous origin, which has been determined petrologically by Mr. C. O. G. Larcombe, of the Kalgoorlie School of Mines, as a porphyrite, this belt of rock being the one in which the "Victorious" and many of the other lodes in this vicinity also are found. Near the surface it is usually much weathered to soft brownish clayey rock, but a little deeper the weathering of the prominent felspar crystals to white kaolin gives it a white-spotted appearance, from which it has obtained the local name of the "Native cat" rock. Below a depth of 100ft. it becomes hard, and is little weathered except in the vicinity of the lode, where the oxidation goes down to about 150ft. to 200ft. in depth. In the 285ft. level it is a dense, hard strong rock, requiring machine drills in working the mine. While it must be considered hard country from a mining point of view, it is not by any means abnormally hard as compared with much of the rock penetrated every day in many of our deeper mines.

Auriferous reefs are found in porphyrite country in the Randell's district also in this State, and I am not aware of any sound geological reason why this rock should not be expected to prove equally favourable as a matrix for gold-bearing lodes as any other on our goldfields. Such lodes have now been found here in quite a considerable variety of rocks petrologically different from one another, and it is quite doubtful if any claim can yet be substantiated that any one is more favourable for the occurrence of gold than any of the others. There is quite a strong probability that the formation of auriferous lodes has often been quite independent of, or but little affected by the petrological character of the rocks through which they pass, and the state of knowledge on the matter does not justify dogmatism on the point of the presence of any one sort of rock being essential to existence of gold ore-bodies. We must take them as we find them, and as the porphyrite carries good lodes, both at Ora Banda and Randell's. it must be accepted from that fact as being favourable, or at any rate not unfavourable, country for gold occurrences.

The Gimblet lode is of a type now well known in Western Australia, but which does not altogether comply with the common conception of a "fissure lode" in respect either of the nature of the lode-filling or the apparent method of its deposition. These lodes appear to have been formed along fissures or lines of fracture in the country rock, but not necessarily with free deposition of quartz and similar lode minerals in open spaces. The characteristics exhibited by them appear rather to point to formation at great depth under conditions of high temperature and pressure and greatly impeded circulation of the lode-forming vapours and solutions. Instead of the fissures presenting free open spaces allowing ready circulation, they appear to have been greatly filled with broken material from the walls, through the interstices of which the mineralising solutions and vapours were forced with difficulty, causing them to penetrate into and act upon the fragmentary country rock so as to fill every crevice in it, however minute, with veins of quartz and often to dissolve out all soluble constituents and replace them with quartz. The lode matter therefore is often a breccia of greatly altered and silicified country rock cemented together and veined with quartz. Often there are several "walls" to be seen within the body of the lode, pointing to faulting movements of the country from time to time along the fissure, and long-continued conditions of lode formation. Owing to the same causes which have converted the fragments of country filling the lode fissure into quartz the country on each side of the fissure also is frequently impregnated with veins of quartz and partly transmuted into lode-matter, so that it is often difficult to define any point where the lode ends and the country begins. In mining practice this point often depends wholly upon the values shown by sampling, the impregnated wall rock being taken out as far as it is regarded as payable. The portions of the lode in which there has been fairly free circulation apparently have been converted into quartz more thoroughly than other parts where from any cause there was not such free passage, and have thus been formed into ore-shoots. In many cases there is often reason to believe that these have been subsequently more or less disrupted by later movements of the walls of the fissure.

The appearances presented by the Gimblet lode seem to be explainable most easily on some such theory of formation as above put forward, the lode stuff enclosing a great deal of more or less transmuted and silicified country rock, full of small veins of quartz. The larger veins of quartz are often fairly definite in shape for some distance but frequently split up into smaller ones or bend suddenly to unite with others. "Walls" being somewhat frequent, it is often difficult to make sure that in following them one is not led away from the main body of the lode, and it is not altogether easy to be sure where this is without frequent crosscutting. In the oxidised zone there is less difficulty, as the difference between the weathered country and the lode matter is more distinct than in the sulphide zone. The walls and joints are also much more distinct by the weathering, owing probably to slow slipping movements taking place along them on account of expansion of the rock as it becomes oxidised and to their surfaces being lubricated by the passage along them of descending surface waters.

Below the depth to which the lode is oxidised the lode-matter contains a good deal of iron pyrites and pyrrhotite, with probably other undetermined sulphides. The presence of sulphides and small quartz veins is often the only visible distinction between ore and country rock, when the lode matter is merely more or less transmuted country. An analysis shown to me by Mr. Johnson made at the Kalgoorlie School of Mines of a general sample of ore from one of the dumps at surface gave only 52 per cent. of silica, showing that the

lodestuff was anything but thoroughly converted into quartz. As in many of the Kalgoorlie mines, therefore, the only way of determining what is to be considered ore or mullock is to keep constantly assaying both the unmistakable lode matter and all the rock in its vicinity. To do this thoroughly is a laborious process, especially as the hardness of the rock prevents easy sampling.

The difficulty of distinguishing between the lode and the country has evidently been experienced repeatedly while carrying out the work done by the option-holders below the 150 feet level, the winzes and drives, as shown in the drawings, having frequently gone off the lode. The sampling accordingly often shows poor values when it would have been more correct to regard the material sampled as country and not lodestuff.

The longitudinal section shows the ground stoped out above the 150 feet level to obtain the 27,845.50 tons of ore above reported as having yielded a total extractable value of about 45s. 6d. per ton. It is seen that the ore did not rise to surface everywhere, the top of the stopes indicating where the siliceous ore ceased against poor clayey veinstuff. It is also seen that the ore-shoot at its west end had a distinct pitch to the westward, parallel to a narrow strip of ground which divides the shoot into two parts. This division is caused by a "pinch" in the lode, which is very distinctly seen in the 150 feet level, the walls of hard country closing in till there was at times a distance of not more than 18 inches between them. It is to be noted that if this "pinch" continues downwards to the 285 feet level on the same pitch as in the stopes above the 150 feet level, it would be met with just at the crosscut from the main shaft, where in fact the driving done shows the lode to be somewhat pinched.

At the east end the probable position of the end of the ore-shoot is taken as shown by Mr. Johnson on his mine section, based on a westerly pitch of the ore in the stopes above the 150 feet level at this end quite similar to that at the west end. It may be accepted tentatively to enable some estimate to be formed of the amount of ore to be expected above the 285 feet level, in the block partly proved by the winzes shown on the section, and which may then be taken as 480 feet in length. It seems to me that there is no very conclusive evidence of a westerly pitch of the east end of the ore-shoot, and that there is quite a good chance of its being much longer at 285 feet than at 150 feet level.

At the time of my examination of the mine it was under exemption from working, and a supply of fresh water caught during recent rains had been stored underground in the winzes in the east end, rendering them inaccessible. Except for this surface water no water is in the mine, all work having been quite dry even at the 285 feet level. The 285 feet level from the new main shaft sunk by the Sons of Gwalia South Gold Mines, Ltd., and the No. 3 winze west, sunk 100 feet below the 150 feet level by the Oroya Links, Ltd., were examined carefully, and plans of the levels and a section of the winze are shown in the drawings. Having the assay plans of the above two companies before me, it was not thought necessary to resample the work in short sections, but a number of general samples were taken as more or less of a check upon the former reports. To have sampled these workings thoroughly would have required several weeks.

285 *feet level.*—As this work was done by the Sons of Gwalia South Company after termination of the Oroya Links option, it is the assay plan of the former company only that is available in this case. The drive on the lode is 78 feet in length, being 23½ feet west from the crosscut and 47 feet east from it. The assay results quoted hereunder are shown on the company's assay plan, reading from the west face to the east one, at approximately even intervals of about six feet. The results of my own sampling are shown for comparison opposite the corresponding ones of the company.

	Sons of Gwalia South Co.'s Sampling.		Check Samples taken 31st January, 1913.		
	Width Sampled.	Value per ton.	Width Sampled.	Value per ton.	
	inches.	shillings.	inches.	shillings. A.	B.
West Face—West 23 feet from Crosscut	72 {36 {36	12 214	66	44	49
„ 17 „ „	72	18			
„ 12 „ „	72	10	60	5	9
„ 6 „ „	70	16			
Crosscut from shaft	60	9	66	10	22
East 3 feet from Crosscut	72	7			
„ 10 „ „	60	6			
„ 15 „ „	60	9			
„ 21 „ „	72	7	60	18	34
„ 26 „ „	72	10			
„ 32 „ „	60	5			
„ 39 „ „	60	8			
East face— „ 47 „ „	66	32	48	27	19
Average	67	20	60	21	27

When taking the check samples a considerable amount of ore had to be knocked down, which was roughly broken to small size underground. Two samples were drawn in each case from the heap, one of which (A) was kept by myself and sent to the Geological Survey Laboratory for assay, while the other (B) was given to Mr. Johnson, who sent it to Mr. A. M. Howells of Kalgoorlie. The differences in the results are due doubtless to the comparatively coarse state of pulverisation of the samples. All such assay results should be read relatively and comparatively rather than as absolute determinations of the

value of the lode at the points tested, and they agree with the previous ones in showing that while the level on the whole is in poor material there is a decided improvement in both faces. The results also indicate that there must be fair ore in parts even of the drive in order to give the results obtained, as it is obvious on examination of the levels that they are driven on the side of the lode and that samples across them must contain more mullock than true lode matter. This is indicated in the plan of the level herewith, the stippling showing the lode matter. Both east and west faces are well into the lode, but in neither of them is the south side of this seen, and its width is therefore unknown. Where cut through in the crosscut the lode shows 5½ feet in width of quartz, but on each side of this there is somewhat altered wall-rock, some of which may be found to carry gold values.

The lode in this level seems somewhat pinched and poor, but examination of the longitudinal section shows that it is just at this place where the pinch seen in the 150 feet level and the stopes above it should be expected to be encountered, and little importance is therefore to be attached to these poor results. The work appears to have been stopped at the very points where it was most important that it should be carried forward, as both faces are in fair ore, with the lode apparently widening out. In the west end there is a rise up about 10 feet above the back of the level, intended to connect with the No. 3 winze west which is sunk 100 feet below the 150 feet level. The Gwalia South Company's assays in this rise show 3s. over a width of 30 inches, 26s. over 30 inches, and 26s. over 50 inches, confirming the fact that good ore exists in this end.

No. 3 Winze West; below 150 feet level, and 250 feet level therefrom:—The longitudinal section shows this winze only a short distance above the west end of the 285 feet level, and the drive west from it obviously tests practically the same part of the lode which would have been tried by continuing the bottom level westwards. The winze was carried down to about 68 feet by Messrs. Friedman & Johnson, and thence to 100 feet by the Oroya Links, Ltd., who also drove the 250 feet level west from the bottom of it, as shown on the plans, a total length of 77 feet, four of which are on the east side of the crosscut. The level has been sampled by both the Oroya Links, Ltd., and Sons of Gwalia South companies, and the results shown on their assay plans are tabulated hereunder, with my own check samples (A & B as before) for comparison, again reading from west to east. The distances are as scaled from the assay plans.

	Oroya Links, Ltd.			Sons of Gwalia South G.Ms.			Check Sampling, 1st and 3rd Feb., 1913.		
——	Distance from Crosscut.	Width Sampled.	Assay Value per ton of 2,000lbs.	Distance from Crosscut.	Width Sampled.	Assay Value.	Width Sampled.	Assay Value per ton of 2,240lbs.	
	feet.	inches.	shillings.	feet.	inches.	shillings.	inches.	shillings. A.	B.
West Face—West	67	72	12	67	54	12			
	63	48	10	..	..	..			
	58	42	11	60	4	17			
	55	54	6	55	43	24	50	17	26
	51	42	51	..	..	..			
	48	54	100	49	50	29			
	43	54	62	45	54	891			
	40	56	52	39	50	27			
	35	56	10	34	66	8	54	103	82
	30	54	72	30	55	11			
	26	60	8	25	40	15			
	22	54	68	20	54	6			
	16	60	82	15	43	44			
	10	48	57	12	54	6	48	32	50
	4	52	28	5	44	60			
East Face—East	4	42	76	4	44	80			
Average of drive ..	..	53	44	..	50	91	1	52	53
Crosscut	..	252	34	..	180	33	192	30	26

It is understood that in the Oroya Links plan all assay results exceeding 100s. per ton are reduced to 100s. for safety. The Gwalia South average return is brought up much too high through not taking the same safe course. If their high assay at one point of £44 11s. per ton is reduced to 100s., their average for the whole drive falls to 30s. The Oroya Links returns are per short ton of 2,000lbs., their average for the level of 44s., being, therefore, equivalent to 49s. per standard ton. It is not stated on the plans given to me whether the Gwalia South returns are on short or standard tons.

In the crosscut it is seen that the lode is a wide body, the Oroya Links sampler having taken it as 21 feet wide, the Gwalia South at 15 feet wide and myself at 16 feet. The sides of the lode are not defined, though several "walls" are easily traceable. There is one very distinct vein of quartz, about 30 inches wide, seen crossing diagonally from the south angle between the crosscut and west drive to the north-east angle of the eastern drive, and such lamination as is shown by the lode matter on each side of it is more or less parallel to this vein. Instead, however, of following this vein in the middle of the lode the drive west has been taken over on to the north edge of the lode-matter, and throughout its length the north side of the drive is in country. The position of the lode as far as at present visible is indicated by stippling on the plan of the level, which shows that there is every prospect that there is a

large ore body on the south side of the level. The middle section of the level follows a fairly distinct wall (outside of which, however, there is still some ore), but in the end the drive has been again turned more towards the north into nearly clean country. Seeing that quite half of the width of the level is practically off the lode the assay results are surprisingly good, but they cannot be regarded as in any sense a fair representation of either the size or the value of the lode. Except at the crosscut from the winze there is no section right through the lode. Two bore-holes, however, were put into the south side of the drive at 17 feet and 32 feet from the crosscut, and these are reported by the Oroya Links, Ltd., in the *London Mining Journal* as having returned assay values of 82s. 6d. over 66in., and 100s. over 57in., in depth respectively, proving that the ore-body *is* in the side of the drive. The results of the work at the 250 feet level are therefore very encouraging, showing that there is a big lode there carrying ore of good payable grade, with some really rich stuff through it.

A section of the winze is also shown in the drawings, and it will be seen that in this also in the lower portion the sinkers showed the same predilection for getting off the lode into the wall-rock, which characterises the work in the level. For about 30 feet down the winze is in quartz of good value for the full width opened up (from four to 6 feet), after which there was a break of about 10 feet, in which the quartz is much pinched into small detached blocks, and the values are low. Then the quartz came in again, and at 68 feet there were nine feet of quartzose lodestuff, without any certainty that the hanging wall (N. wall in this case) had been reached. Below this depth the lode was sunk through and the last 20 feet of the bottom of the winze are practically in country.

Without taking a good deal of time in putting stages in the winze it was not possible to sample it at all carefully, so my check samples in this case were taken from the west end of the winze from 30 feet to 80 feet down it by knocking down material across the width of lode there seen, at intervals of five to six feet, and collecting the fallen stuff on a sheet at the bottom. The top 30 feet were sampled on both east and west ends of the winze by fixing a stage at 30 feet down and knocking down samples across the lode at short intervals on to a sheet placed on the stage. There are three previous samplings available in this instance, that of the first 68 feet by Messrs. Friedman & Johnson, and those shown on the Oroya Links and Gwalia South assay plans, all of which are now tabulated for comparison :—

Messrs. Friedman and Johnson.			Oroya Links, Ltd.			Sons of Gwalia South G.Ms., Ltd.			Check Samples 3rd Feb., 1913.		
Depth in Winze.	Width Sampled.	Value per standard ton.	Depth in Winze.	Width Sampled.	Value per ton of 2,000 lbs.	Depth in Winze.	Width Sampled.	Value per ton of (?) lbs.	Width Sampled.	East end value per standard ton.	West end value per standard ton.
feet	inches.	shillings.	feet.	inch.	shillings.	feet.	inch.	shillings.	inches.	shillings. A. B.	shillings. A. B.
4	36	344	5	50	100	5	48	260			
8	36	392	9	48	36	9	60	87			
11	36	592	..	..	..	..	..	..			
14	36	196	14	38	100	15	48	106			
16	36	352	..	..	..	..	..	..			
18	36	116	18	60	100	..	..	..			
20	36	76	..	..	..	20	57	400	54	285–180	312—418
22	36	52	..	..	..	..	..	..			
24	36	124	24	36	80	25	50	300			
26	36	44	..	..	..	..	..	..			
28	36	212	..	..	..	..	..	..			
30	..	8	30	44	4	30	55	7			
*	*	*	33	27	4	35	39	4			
40	12	180	38	36	6	39	66	10			
42	22	1,040	42	56	52	..	..	..			
43	27	304	..	..	..	..	..	..			
44	32	104	..	..	..	..	..	..			
45	37	96	..	..	..	45	69	14			
46	42	58	..	..	..	..	..	..			
48	42	138	48	55	78	..	..	..			
49	50	140	..	..	..	49	65	102			
50	57	216	..	..	..	..	..	..			
52	58	280	52	64	100	..	..	..			
53	65	112	..	..	..	..	..	..	50	..	46—51
54	72	56	..	..	..	55	67	67			
56	79	60	..	..	..	..	..	..			
58	86	96	58	112	44	..	..	..			
60	93	80	60	79	60	60	100	37			
62	100	172	..	..	..	..	..	..			
64	107	244	..	..	..	65	81	58			
66	113	204	66	39	20	..	..	..			
68	120	40	..	..	..	..	..	..			
..	..	..	..	..	..	70	32	68			
..	..	..	73	35	100	74	24	39			
..	..	..	78	44	51	78	29	332			
..	..	..	84	45	16	84	49	25			
..	..	..	88	51	16	88	35	14			
..	..	..	93	48	15	..	..	..			
..	..	..	96	48	55	..	..	..			

* Valueless.

It will be seen that all the samplings concur as to there being rich ore for the first 30 feet in this winze, and ore of fair workable grade below the break at 30-40 feet down to about 80 feet, where the lode is mostly out of the winze. With the evidence of the drive west from the bottom of the winze it

seems certain that there is a block of good ore above the 250 feet level west of the winze.

150 *feet level.*—Above this level the lode has been stoped, and any sampling to be done can only be by digging into the floor of the level. The Oroya Links assay plan shows a number of results so obtained, but the time available did not permit me to check them. The assay plan (longitudinal section more properly) shows a distance of 137 feet between No. 3 winze west and No. 2 winze west, and the following assays at the distances given, reading from west to east:—

Distance.	Width.	Value per ton of 2,000lbs.
feet.	inches.	shillings.
13	60	76
23	63	100
32	62	68
38	60	44
48	72	28
58	84	38
70	60	96
79	55	100
90	37	36
100	33	14
107	35	22
117	48	20
123	48	40
132	48	12

In this part of the level the lode is nearly vertical, so that these results should fairly represent the values of the widths sampled, which however are not always the full width of the lode but only the part accessible in the floor of the level, and which may often contain a good deal of footwall country. In the stopes above this level, except in the pinched part previously mentioned, the lode is stated to have been often stoped from 12 to 30 feet in width. So far as the assays go, therefore, they indicate very fair ore going down below the floor of the 150 feet level between Nos. 2 and 3 winzes west. From No. 2 to No. 1 winze west, however, the increasing underlay renders the reported results of assays taken from the floor more and more doubtful, as there is a strong presumption that the most of the floor of the level would be in the footwall country. It is visibly so in several places. Taking the results on the Oroya Links assay plan for what they may be worth subject to this consideration, we find a distance of 158 feet shown between No. 2 and No. 1 winzes west of the old main shaft, with assays at the distances stated, reading from west to east:—

Distance from No. 2 Winze West.	Width Sampled.	Value per ton of 2,000lbs.
feet.	inches.	shillings.
9	192	23
18	54	24
27	70	24
35	132	28
44	72	32
52	68	100
59	104	30
68	90	22
78	74	18
86	70	20
94	72	50
101	74	8
109	104	10
118	66	10
126	66	20
135	75	26
144	72	20
153	66	28

Assays at the west and east ends of winze No. 1 west are:—

——	Width Sampled.	Value per ton (2,000lbs.).
	inches.	shillings.
West end	48	60
East end	72	6

Going still east from No. 1 winze west to No. 1 winze east, a distance (by scale on longitudinal section) of 108 feet, the plans of the main or south branch of the lode show two sets of assay results, as follows:—

Distance from No. 2 Winze West.	Width Sampled.	Value per ton of 2,000lbs.	Distance from Crosscut, No. 1 Winze West.	Width Sampled.	Value per ton of 2,000lbs.
feet.	inches.	shillings.	feet.	inches.	shillings.
11	62	6	..	..	..
20	66	85	..	44	60
28	60	44	28	62	6
36	56	38	35	66	88
47	66	40	45	60	44
56	63	56	55	56	38
66	68	12	65	66	40
80	56	32	73	63	56
..	..	..	83	63	12
92	60	48	93	56	32
103	101	20	105	60	48
..	..	..	115	101	20
..	..	..	123	84	44
No. 1 Winze East	84	44	..	..	..
East of No. 1 Winze					
10	61	10	..	..	..
20	59	12	..	..	..
29	54	12	..	..	..
39	40	10	..	..	..
50	70	20	..	..	..
62	42	14	..	..	..
7	45	8	..	..	..
76	60	8	..	..	..
86	48	4	..	..	..
End of Stoping					
96	..	..	..	..	..

In this level between No. 1 winze west and No. 1 winze east the plans show the lode to be in three parallel branches. Measuring eastward from the crosscut from the old main shaft the following results are recorded for the north branch:—

Distance from Crosscut.	Width Sampled.	Value per ton of 2,000lbs.
feet.	inches.	shillings.
3	65	80
8	62	28
18	57	12
28	80	12
40	58	20
	58	40
	60	48
43	60	44
	60	52
65	81	16
78	61	4
106	110	6
113	96	12
124	72	14
133	72	6

East of No. 1 winze west the floors of the levels are quite too much in the footwall for the assay results to have much significance, and the surprise is not that they are poor but that they are as good as they have been found. In driving the level the values met with are stated by Mr. Johnson to have been of quite good payable grade, better than previously obtained in the mine, and it was on these that Messrs. Friedman and Johnson purchased the property from its previous owners. They were driving this level when I visited the mine early in 1910, and the assay results then shown to me were very good indeed. It seems to me fairly certain that the average value of the ore-shoot for about 480 feet in this level was at least up to the average of the ground stoped above it, previously taken at 45s. 6d. extractable value, and probably was a good deal higher.

The block below the 150 feet level has been tested by No. 3 winze west as above described, No. 2 winze west, No. 1 winze west, and No. 1 winze east, the assay results of which will now be quoted:—

No. 2 Winze West—135 feet deep.

Oroya Links, Ltd.			Sons of Gwalia South G.Ms., Ltd.		
Depth.	Width Sampled.	Value per ton of 2,000lbs.	Depth.	Width Sampled.	Value per ton of (?) lbs.
feet.	inches.	shillings.	feet.	inches.	shillings.
8	57	12	5	36	10
13	45	6	10	36	4
18	59	16	15	48	16
23	54	74	20	48	58
28	57	28	25	52	16
33	57	100	30	52	29
37	50	32	35	44	30
41	40	19	40	43	36
45	48	22	45	60	9
50	45	22	Cross-cut 50	(not given)	28
55	42	20	55	42	14
60	48	30	60	50	19
65	52	24	65	78	29
69	80	40	70	92	21
74	78	52	74	67	9
78	765	17	78	80	13
84	66	42	84	76	20
89	66	60	89	(not given)	15
94	78	50	93	do.	2
98	72	54	98	96	115
Cross-cut 98	300	47	Cross-cut 98	300	53
102	72	51	103	86	26
107	69	24	107	66	24
112	78	41	112	88	31
117	76	51	117	76	60
121	78	40	122	132	6
125	72	16	127	84	87
131	69	36	133	72	26
135	90	12	..	..	..

As previously mentioned, this winze was nearly full of water when I saw it, and only about 25 feet of the top of it could be seen. This portion is mostly in a "horse" of mullock between two branches of the lode seen in the level, and according to Mr. Johnson's cross-section (shown in the drawings) the winze soon drops on to the footwall side of the lode. The crosscut at 98 feet is the only complete section of the lode obtained in the winze, and it is to be noted that both Companies' samplings of this agree in giving an average value of 47s. to 53s. per ton over a width of 25 feet. The Oroya Links average for the winze is given by them at 37s. per ton for an average width of 58 inches, while the Gwalia South Co.'s average is about 29s. per ton. Taking into account the mullocky material sampled with the lode-stuff in this winze, the results seem to me to indicate that the average value of the lode at this section is most probably much the same as that of the block stoped above it.

No. 1 *winze west,* 50 *feet deep.*—This winze also could not be inspected by me owing to water in it. The following are the values shown on the Oroya-Links plan:—

Depth in Winze.	Width Sampled	Value per ton of 2,000lbs.
feet.	inches.	shillings.
6	44	28
11	42	16
16	41	20
21	48	38
26	45	64
30	48	14
34	40	35
38	50	44
42	41	49
45	44	25
49	48	32
Average ..	44	31

A crosscut, 62 feet north from the bottom of this winze, is shown as returning 23s. per ton over a width of 10 feet of lode, including the bottom of the winze. There are then 26 feet of country after which the crosscut passed into material giving assays of from traces of gold to 8s. per ton, which appear to indicate a poor lode parallel with the main one, probably one of the branches seen higher up.

No. 1 *winze east,* 98 *feet deep.*—In this case a great part of the winze is stated by Mr. Johnson to be entirely off the main lode, the position being as shown in his cross-section in the drawings. The following figures of the Oroya-Links sampling seem therefore to be much more favourable than one would expect. I could not examine the winze myself on account of the water in it:—

Depth in Winze.	Width Sampled.	Value per ton of 2,000lbs.
feet.	inches.	shillings.
2	61	38
5	37	25
10	52	28
14	42	47
19	42	50
25	38	11
30	50	8
33	44	14
39	40	55
44	48	38
49	39	22
54	54	38
58	52	8
63	54	1
67	56	trace
70	68	trace
75	66	trace
80	72	4
87	60	1
98	72	trace

At the bottom of the winze a crosscut south is shown as passing through 15 feet of country, 8 feet of lode matter assaying 9s. per ton and then country again to 28 feet from the winzes. There is also a drive west 40 feet at the bottom of the winze on a branch of the lode which probably corresponds with the footwall (north) branch at the 150 feet level. Reading westward from the winze the plan shows:—

Distance from Winze.	Width Sampled.	Value per ton of 2,000lbs.
feet.	inches.	shillings.
5	60	4
10	56	4
15	54	4
20	60	13
25	44	10
28	48	23
32	48	42
36	52	49
40	63	12

A diamond drill bore south near the west end of this drive is recorded as giving 30s. per ton from 6 feet to 12 feet, and 11s. per ton from 12 feet to 17 feet. Another bore south near the bottom of the winze is not shown as having given any values, as is the case also with another long one put in to the north-west. The results at this point seem to confirm Mr. Johnson's belief—based as above stated on the pitch of the good ore in the east end of the stopes above the 150 feet level—that the ore-shoot is pitching westward similarly as in the west end, in which case the west drive from the bottom of the winze would only be just entering it.

The foregoing description of the tests that have been made of the lode below the 150 feet level, when carefully analysed, shows that the block of ground apparently tested by the winzes and crosscuts and drives from them, and by the 285 level from the new main shaft, has not been at all conclusively tried, and that no data exist which can be really relied upon to show the average value which could be expected in stoping. The levels and winzes have usually been carried along only one side of the ore-body, and the assay results must frequently include much wall-rock, which would be rejected in stoping. There are only two really satisfactory crosscuts through the lode, one at the bottom of the No. 3 winze west and one at 98 feet in No. 2 winze west. That from the new main shaft at 285 feet appears to be in the pinched part of the lode, and that from No. 1E is probably outside the ore-shoot. The widths sampled elsewhere in the winzes are only portions of the full width of the lode. Any prospective purchaser of the mine would therefore be well advised to take it on option long enough to enable him at least to put crosscuts right through the lode at the west end of the 250 feet level, the east end of the 285 feet level, the bottom of the No. 2 winze west, and the west end of the drive west from No. 1 winze east, the results of which work in conjunction with those already obtained should demonstrate the size and value of the lode fairly satisfactorily. Taking the results as yet before us for what they are worth it is evident that there is a large block of gold-bearing ground more or less proved by them, and which has a fairly good average value on the figures available even without making any allowance for their often including mullock with the ore. Really good values have been frequently obtained throughout, the work done showing no reason to look for any falling off in the average value of the gold contents of the lode down to the depths yet proved. There seems to me no ground for thinking that the block of ore between the 150

and 285 feet levels is at all likely to be less valuable than the stuff stoped above the 150 feet level. Taking this block as 480 feet long and 135 feet high, and allowing an average workable width of 12 feet which is a good deal less than the known average widths would justify, the tonnage developed at 13 cubic feet to the ton (the ore being mostly heavy sulphide ore) works out at 59,815, or roundly 60,000 tons, and there seems every reason to expect this to realise not less than the extractable value of 45s. 6d. above taken as the average of the stoped ground above the 150 feet level. Allowing 20s. per ton for mining and milling costs, which should be ample in the circumstances, and 4s. per ton for new development work to be carried on simultaneously with the extraction of the ore body, the block should return 21s. 6d. per ton of profit, equal to £64,500. In order to obtain this, however, the mine would have to be equipped first with permanent winding plant, and a mill suitable for treatment of sulphide ore would require to be erected. The principal items of permanent machinery equipment as yet on the mine are a 115 h.p. suction gas engine and producer, which drive a fine new belt-driven Ingersoll Compressor, capable of compressing 534 cubic feet of free air per minute.

It is, of course, quite impossible to make any close estimate of the cost of the rest of the required machinery until full plans and details of it have been prepared and settled, especially in the case of the mill, in which the nature of the treatment finally adopted for the ore will greatly control the cost of the plant. It would not be advisable, however, to make less provision than £40,000 for plant in forming a strong company to work this mine. As the owners are offering the whole mine for a sum of £25,000 in cash, the above figures indicate that there is a strong probability that the produce of the ore above the 285 feet level would be sufficient practically to pay for the mine, for its equipment with plant and a mill, and to provide £12,000 of new development to open up the next level below. The outlook for the mine is therefore an exceedingly promising one, and the proposition is decidedly well worth the attention of mining investors.

The sulphide ore has been tested in Kalgoorlie as regards the practicability of obtaining a good extraction of the values, and the reports of these trials show no unusual difficulty to be anticipated in treatment. The best extraction obtained in the tests shown to me by Mr. Johnson was by roasting followed by amalgamation and cyaniding, but the tests were merely on a laboratory scale and more extensive ones on a working scale are advisable before finally settling the treatment best to be adopted. Such trials can be made in Kalgoorlie without much trouble or expense. The choice of processes will probably lie between (i.) roasting all the ore before amalgamation and cyaniding, and (ii.) wet crushing followed by concentration, with cyanide treatment of the raw tailings, and roasting of concentrates followed by amalgamation and cyaniding of the roasted material. Very close comparison of actual working costs, recoveries, and losses at all stages of these processes is necessary to enable decision to be made as to which is the more profitable. Both are capable of giving good results.

Working costs at Ora Banda will probably be much the same as at Kalgoorlie. At present the former place has some advantage in lower costs of mining timber and firewood, and also of fresh and salt water, but suffers a little by being 18 miles from the railway. Mr. Johnson informs me that the new main shaft (6 feet x 4 feet) was sunk to 285 feet for £3 7s. 6d. per foot, including labour in the shaft, timbering, and cost of explosives and candles, and that the contractors are willing to continue at the same price, while he gives the cost of driving (candles and explosives included) at 35s. to 40s. per foot. Costs of winding and compressed air have to be added. Up to the present there has been no water, and therefore no cost for pumping.

As regards the prospects of permanency of the ore-body in depth it does not seem to me that there is any reason to anticipate any change for the worse. The sulphide ore appears to be quite as rich on the average as the oxidised stuff above it and there is nothing to show that the oxidised zone has been a gainer to any considerable extent by secondary enrichment. The sulphide ore is dense and fine-grained, closely resembling in its constitution that from the deeper parts of some of the Kalgoorlie mines, and it is difficult to understand that the values in it can be any other than such as have been in the lodestuff from the time of its first mineralisation. There are grounds therefore for being very hopeful that the ore will extend to a very considerable depth, and that the mine will have a fairly long life.

As shown on the locality plan the lode has been traced westward into lease 1338W by prospecting cuts and shafts on the outcrop. The values in these are mostly low, but some fairly good assays are obtainable and there is much hope that workable ore may be found by extending the levels of the main mine to the westward. At the Gimblet West shaft a good deal of work has been done above the 93 feet level, and the shaft is said to be down 240 feet. The previous owners are recorded as having produced 680.50 tons of ore from these workings which yielded 482.83ozs. of fine gold, equal to 69s. per ton, amalgamation only. This part of the lode, therefore, seems well worth further attention, as it may contain another good shoot of ore. When I saw these workings early in 1910 the prospects seemed decidedly promising, and the lode was much wider than the richer portions, which alone were worth taking by the prospectors. There seemed to be a large body of low-grade ore worth opening up. The adjoining "Victorious" mine has shown it to be possible to mine and mill such soft oxidised low-grade material for costs of from 10s. to 12s. per ton, with a mill on the spot.

I have, etc.,

A. MONTGOMERY, M.A., F.G.S.,
State Mining Engineer.

25th February, 1913.

APPENDIX No. 2.

LOANS AND SUBSIDIES UNDER "THE MINING DEVELOPMENT ACT, 1902," AND THE MINING DEVELOPMENT VOTE: ACTION DURING 1912.

(Nos. in italics represent Nos. in last year's report.)

(*a*) *Advances for Pioneer Mining and Prospecting.*

1. *Sunbeam G.M.L.* 1121*X*, *Kanowna* (*2*).—There is nothing further to report regarding this loan, there being no transactions during 1912. (4748/11.)

2. *Eclipse G.M.L.* 1047*X*, *Gindalbie* (*3*).—During the year 1912 several portions of the plant on this mine were sold and the proceeds credited towards repayment of the loan and interest as shown in tables hereafter. (4718/07.)

3. *Westralia Tasmania G.M.L.* 1665*T*, *and Mt. Noungel G.M.L.* 1745*T*, *Erlistoun* (*5*).—After a long struggle with a very low-grade proposition, returning latterly only 8s. a ton, the owner of the mine has found himself compelled to throw up these leases and look for another property on which to place his battery. (2427/11.)

4. *Carbine South Syndicate, Ltd., G.M.Ls.* 758*S*, 771*S*, *and* 805*S*, *Kunanalling* (*6*).—Interest for 1911 was paid early in the year, and in May the leases were gazetted surrendered conditionally on new leases 840S and 841S being granted. (2866/07.)

5. *Emily G.M.L.* 1804 (*formerly* 1741 *and* 1510, *Cuddingwarra* (*7*).—The only transaction which has taken place in connection with this lease since its surrender in January, 1912, is the sale of certain plant and chattels for the sum of £20. (2066/11.)

6. *Greenbushes Prospecting and Mining Coy., Ltd., Greenbushes: South Cornwall M.L.* 300 (*8*).—In May Messrs. Phillips and party transferred their tribute to Mr. W. C. Mayne, but resumed it again in October. (1932/10 and 997/12.)

7. *Coolgardie Prospecting, Development, and Mining Coy., N.L., Coolgardie* (1910 Report No. 9).—During 1912 inquiries were made as to terms on which the mine and plant formerly belonging to this company could be obtained from the Government, and later on an offer was received for purchase of part of the plant, but no business resulted. (3323/08 and 838/13.)

8. *North End Mines, Ltd., Kalgoorlie, G.M.L.* 4037*E*, *etc., Devon Consols South Extended* (*9*).—There is nothing to report regarding this loan, no work having been done on the mine during 1912. (3461/08.)

9. *Jupiter G.M.L.* 771*M*, *Mt. Magnet* (*10*).—The tribute on this mine was transferred from Mr. S. J. Cash to Mr. D. O'Brien in March, and in June again transferred to Mr. G. Williamson. During the year the loan was reduced by £24 17s. 5d. (2892/08 and 319/12.)

10. *Coolgardie Redemption G.M. Co. G.M.Ls.* 3918 *and* 4052, *Coolgardie* (*11*).—The tributers worked during the first part of the year with very little success and in August gave notice to terminate their tribute. A small amount of plant was sold during the year. Tenders to purchase or lease the mine were again called for but elicited no response. (3642/11 and 2316/12.)

11. *Wheal May Lead Mine, Northampton* (*13*).—A small portion of the plant belonging to this mine has been sold, but no further progress made in realising the securities up to end of 1912. (1807/09.)

12. *Jourdie Enterprise G.M. Syndicate G.M.Ls.* 786*S and* 773*S*, *Jourdie Hills* (*14*).—During the year a good deal of work has been done on this mine and the loan has been somewhat reduced. (2150/11.)

13. *W.E.G. G.M.L.* 505*G*, *Niagara* (*16*).—Plant to the value of £52 12s. 6d. was disposed of during the year by the W.A. Bank. (4286/10.)

14. *Alicia G.M.L.* 254*F*, *Mt. Morgans* (*17*).—This lease has been under exemption for the greater part of the year and in September was gazetted forfeited for breach of the labour conditions. It has since been re-applied for by another party (3520/12). There is little prospect of any part of the loan being recovered. (90/12.)

15. *Lady Florence G.M.L.* 1265, *Cue* (*18*).—Nothing has yet been done towards re-opening the deeper levels of this mine or repaying the loan upon it. (363/06.)

16. *Green and Wheatley, Sinking for Deep Lead at Bulong* (*19*).—No further work was done on this venture during 1912 and the Prospecting Area was abandoned. (2390/00.)

17. *Kalgoorlie North End Development Coy., N.L., G.M.L.* 3880*E*, *Devon Consols, Kalgoorlie* (*23*).—Early in the year the company gave up their option on the mine and possession was taken of the securities mortgaged to the Minister. Leases 3880E and 4146E were forfeited in July and temporarily reserved. The chattels were not sold up to the end of the year though an offer received for them was under consideration. (2255/11 and 3744/12.)

18. *Klondyke Boulder G.M.L.* 604, *Warrawoona* (*24*).—Shaft sinking was carried on, and in February permission was given for crosscutting to start at 170 feet instead of 180 feet. At sixty feet from the shaft the reef was cut showing two feet of good milling stone. The total depth of the shaft was 179ft. 6in., and length of crosscut 104ft. In July the Minister consented to defer payment of the percentage due to him on the first crushing (130 tons for £513) and to reduce his claims on succeeding crushings up to the end of September to 7½ per cent. instead of 15 per cent. A sum of £88 5s. 6d. was repaid during the year from percentages of gold won. In October the Company asked for a further loan of £500 to sink to 250 feet and crosscut there to both east and west reefs, which was approved. Sinking was then resumed, and was in progress at end of the year. (4548/11.)

19. *Brittannia G.M.L.* 953*M*, *Mt. Magnet* (*25*).—Owing to failure of the purchaser of the mine and chattels to carry out his agreement, this was terminated by notice given in June, and fresh tenders called for, but as none were received, a fresh agreement was made with another member of the late party to continue working, in the hope that by carrying on the mine success might be attained eventually. At the end of the year work was in progress. (909/12.)

20. *Water Supply to Hannan's Reward Tributers, Kalgoorlie* (*28*).—During 1912 nothing was done towards repayment of the advances previously made to this party to assist them to purchase water. (1551/10 and 2527/10.)

21. *V's United G.M.L.* 271*F*, *Mt. Morgans* (*29*).—During the year the Crossley oil engine was sold to the Mary Mac G.M. Coy., N.L., under a hire purchase agreement. (2426/11.)

22. *Balkis G.M.L.* 5354*Z*, *Menzies* (*30.*)—A good deal of development work has been done on this mine during 1912. In August the Hon. the Minister granted a further loan of £150 for the purpose of proving if the shoot of payable ore at the 400ft. level continued to a depth, but this loan had not been completed at the end of the year. (3016/11.)

23. *Lady Seddon G.M.L.* 633*B*, *Black Range* (*31*).—Little work has been done on this mine during 1912, the lease being under exemption the greater part of the time pending result of efforts of the owner to form a company to work it. (4556/11.)

24. *Princess Royal Syndicate G.M.Ls.* 222, 653, 784, 1016, 1048, and 1114, Cue (32).—Work was carried on for the first half of the year but was not profitable. In May the syndicate asked for a further loan of £1,000 for new development but this was not agreed to, and operations were then abandoned. At the end of the year arrangements were being negotiated for working the mine on tribute. (2898/11.)

25. *Riverina G.M.L.* 123*U*, *Mulwarrie* (33).—The shaft in this mine was sunk to 236 feet at which depth, on the advice of the Inspector of Mines, the borrower was allowed to open out his level instead of at 260 feet as originally agreed. The ground proved very hard. The level was driven 76 feet and connected with a winze from the 200ft. level, giving a block of stoping ground estimated to contain 2,000 tons of ore of fair value. Towards the end of the year negotiations were in progress to purchase an air-compressor in order to make better progress in the hard stone. (1373/12.)

26. *Champion South G.M.L.* 817*N*, *Nannine* (34).—A further extension of time for beginning repayments was granted this party till January, 1913. Operations proved unprofitable and the party abandoned the mine, but up to the end of the year steps had not been taken to realise the security. (2257/12.)

27. *Great Carbine G.M.L.* 928*R*, *Linden.*—The owner of this mine made application in May for a loan of £225 to assist him in sinking his main shaft and crosscutting at bottom thereof, which was granted after a report by the Inspector of Mines on security taken over the mine and plant by bill of sale and mortgage. In December it was reported that a reef 15 inches wide was cut 30 feet from the shaft in the 200 feet crosscut prospecting about 1½ oz. per ton. (1197/09.)

28. *Stanley G.M.L.* 1271*X*, *Kanowna*: *J. Rollo and M. Gregor.*—In November, 1912, the Hon. the Minister approved of this party being supplied with a pumping plant, of a value of £150, under a hire purchase agreement, to cope with the water in their mine, on security of a lien over the mine and plant, repayments to begin three months after reaching the auriferous material in the lead and to include 15 per cent. of all gold won after each clean up. A new "Waterloo Boy" oil engine and a second-hand Cornish pump were chosen by the applicants and purchased for them. (2376/10.)

29. *Havilah Development G.M.L.* 345*B*, *Black Range.*—Towards the end of 1911 loans up to £600 were authorised to the owners of this lease to assist them in procuring and erecting machinery for it and sinking a main shaft to a depth of 350 feet with the object of cutting the shoot of ore worked in the adjoining Havilah mine. Sinking was carried on steadily during 1912, and had reached a depth of nearly 200 feet at the end of the year. (4689/96, 2981/12.)

30. *The Globe G.M. Syndicate, G.M.L.* 912*N*, *Meekatharra.*—In July, 1912, application was made by this party for loan of £500 to assist them in sinking the main shaft and putting machinery and equipment upon it valued at £436, and advances up to £500 were approved in August, being up to £200 on purchase and erection of machinery, and up to £300 in sinking the main shaft 100 feet below the 130ft. level and crosscutting and driving therefrom, but limited to a maximum advance of £2 per foot, on security of a first mortgage and bill of sale over the mine and plant. The necessary documents were not completed till near the end of the year and no payments were made from the loan during 1912. (3594/09 and 830/13.)

31. *The Bullrush Gold Estates, N.L., Yuin*: *Erection of a Telephone Line, Yalgoo to Yuin.*—In November the Hon. the Minister approved expenditure from the Mines Development Vote up to £300 in supplying telephone material at Yalgoo for a line from Yalgoo to Yuin, to be put up by the company at their own cost. Material to be supplied on hire purchase at cost plus interest at 5 per cent., payable by half-yearly payments of £50. Up to the end of the year part of the material had gone forward, but no accounts had yet been paid. (3715/12.)

32. *P.A.* 485*Y*, *Jenkins, Brown, and party, Bulong.*—This party of prospectors, who desired to do some prospecting at and between the 100ft. and 200ft. levels of the old Queen Margaret mine at Bulong, were assisted with advances not to exceed £300 at the rate of £ for £ expended by themselves, but not to exceed average advances of 10s. per foot, to be repayable from gold won. Work was carried on regularly by the party up to the end of the year with but little result in finding gold. (1435/12.)

33. *Morning Star G.M.L.* 4484*E*, *Boulder.*—The owners of this lease having undertaken a scheme of prospecting a portion of the Boulder Belt not previously tried, were granted a loan of £168 to assist them in purchasing machinery for pumping and winding, and later on in the year further advances of £200 at the rate of £ for £ expended by themselves in crosscutting and driving at the 175ft. level. The ground in the crosscut proved hard for hand work, but was successfully passed through and the

expected lode cut about 110 feet from the shaft, but no values were found in it, and after driving 24 feet on it the venture was abandoned. Part of the plant given as security was sold before the end of the year. (278/12 and 3786/12.)

34. *Lake View G.M.L.* 606, *Payne's Find, Yalgoo Goldfield.*—Assistance was given to the Payne's Find Development Co., N.L., by advancing to them on hire purchase terms a quantity of piping to enable them to connect their battery with the Government well, but unfortunately very soon afterwards the supply in this became so reduced as not to be sufficient for the State battery alone. Later on it was improved, and water supplied to the company's battery. (2372/11.)

35. *Comstock W.A. G.M.L.* 1079*Y*, *Dandall's.*—Advances up to £200 were authorised towards the end of 1911 for the purpose of helping the owner of this lease to sink a shaft to obtain water supply at rates not to exceed one half the total cost, and to be fixed by the Inspector of Mines. Sinking was still in progress at the end of the year, in rather hard country. (427/11.)

36. *Lubra Queen G.M.L.* 734*G*, *Kookynie.*—The Lubra Queen G.M. Co., N.L., made application in May, 1912, for a loan of £500 under Part II. of the Mines Development Act to assist them in repairing the main shaft of the mine, and sinking it 60 feet deeper, and in October applied for a further sum of £500 for sinking a winze and driving to connect with it. Both were approved, the total loans approved being thus £1,000. The first work was carried out satisfactorily, but the second was not yet done at the end of the year. (3751/10.)

37. *The Princess Royal G.M. Co., N.L., Princess Royal G.M.L.* 106, *Dundas.—In November,* 1911, this company approached the Minister for Mines for assistance in testing their mine below the 950ft. level by a scheme of diamond drill boring with the object more particularly of ascertaining if the values in the lode would increase in a belt of felsite country expected to be met with within 300 feet of further sinking. In the upper levels the values were best while the lode was passing through similar felsitic dykes. The mine has produced about £590,000 worth of gold, and paid in dividends £112,000, but of late years has been unpayable. The company then obtained exemption from working the mine for three months, and the matter of assistance was in abeyance till April, 1912, when the proposal was varied by substsituting sinking a winze below the 950ft. level for diamond drill boring. After much consideration and discussion the Hon. the Minister for Mines agreed to make advances up to £2,000 under Part VI. of "The Mines Development Act, 1902," in aid of the proposed work. The work of unwatering the mine was commenced in April, 1912, but sinking was not begun till later. The work of sinking has been carried on during the remainder of the year, and was still in progress at its close. (2735/95 and 3573/12.)

38. *Dostmund G.M.L.* 788*R*, *Yarri.*—In September application was made for assistance in procuring machinery for opening up this mine, which had produced good stone in crushings from above water level, and advances up to £350 were authorised to supply the applicant on the hire purchase system with machinery chosen by him, consisting of a petrol engine, Gould's pump, and friction winch, on security of a mortgage and bill of sale over mine and plant. The plant was supplied in September and October, and was at work by 14th of the latter month. (29/05.)

39. *Sunset G.M.L.* 2240, *Golden Valley.*—Loans up to £100 on the £ for £ basis were granted in April to the company owning this mine, to assist them in proving their ore-body by a winze. The winze was duly sunk 40 feet at a price of £4 per foot with extras £10, but the work resulted unsuccessfully and the company went into liquidation. The sum of £5 17s. was realised by sale of chattels. The balance of the loan may be considered a loss. (499/11.)

40. *Specimen Hill G.M.L.* 1644*T*, *Mt. Weld.*—A loan of £100 was authorised in July, 1912, to the owner of this mine to assist him in doing development work at his 200ft. level to find a portion of the reef supposed to have been displaced by a fault. The work done was first to be approved by the Inspector of Mines. In December a further advance of £150 was approved, the progress and developments being favourable. (2060/05 and 709/13.)

41. *Hawk G.M.L.* 725*G*, *Niagara.*—The owners of this lease had a loan of £90 approved in September, 1911, which later on was increased to £107, to assists them to purchase a boiler, pump, and winch, but payments were not made till 1912. The party experienced a good deal of trouble during the year with water, hard ground, and an error in direction of driving, but expected to cut their reef from their new 150ft. shaft towards the end of the year. (4738/09 and 3703/12.)

42. *Creme D'Or G.M.Ls.* 389*D*, 421*D*, *and* 422*D*, *Day Dawn.*—A loan of £750 was granted to the owners of this mine early in 1912 to enable them to purchase a gas producer plant and other machinery, and in September the advances were increased to a total of £1,000 to allow of purchase of further plant. (881/05 and 2334/12.)

(*b.*) *Assistance in Erecting Batteries and Treatment Plants to be used for Ore-treatment for the Public.*

43. *Spring Hill G.M.L.* 724, *Parker's Range* (*35*).—Difficulty in getting water supply has been a very serious impediment to success with this venture throughout 1912, the year having been a very dry one in the Parker's Range District. Work has been carried on as far as water would permit, but the year has been a hard one to the battery owner. In June expenditure up to £200 was authorised to try to improve the water supply obtainable from the lake, and trenches were cut by the Water Supply Department, but without much result. (3362/11.)

44. *Never-Never G.M.L.* 665, *Yilgarn* (*36*).—Little has been done on this mine during 1912 beyond treatment of the tailings. The Company owning the mine has been trying to sell it or get further means to carry on working. The estate of the late owner is still in liquidation. (4224/11.)

45. *Hidden Secret North, G.M.L.* 4253, *Eundynie* (*37*).—The tribute on this mine expired on the 7th March and the owners then undertook new development work and were allowed for six months to reduce their repayments to 5 per cent. of the value of the gold obtained. Payments of interest and in reduction of the loan were made satisfactorily throughout the year. (3245/11.)

46. *Roebourne Copper and Gold Mines, W.A., Ltd., G.M.L.* 135, *Roebourne* (*38*).—During the year

Messrs. Redmond and party paid the final instalment of the amount of £900 agreed to be paid by them for the Weerianna battery and it became their's absolutely. The balance of the old loan and interest to the Company, £169 10s. 9d., has been written off and the transaction completed. (636/12.)

47. *Lady Pratt G.M.L.* 1228*X*, *Mulgarrie* (*39*).—Progress with repayment of the loan in this case has not been at all satisfactory during the past year, the owners finding difficulty in keeping going at all, much less getting any margin for paying off debts. (4475/11.)

48. *Royal Mint G.M.L.* 549, *Yalgoo* (*40*).—In response to the advertisement for tenders for the mine and plant three tenders were received, that of Mr. J. McGlenchy for £300 payable in monthly instalments of £10 being the highest. A hire purchase agreement was entered into and the mine and plant handed over to him. A sum of £80 was received during the year in reduction of the advances made on this plant. (5046/10 and 1518/12.)

49. *Mulga Queen G.M.L.* 1875*T*, *Duketon* (*41*).—Early in the year negotiations were undertaken to dispose of the mine in London, and in October the sale was completed, since which time the outstanding balance of loan and interest have been repaid to the Department, and the transaction concluded. (1703/11.)

50. *Malcolm Prospecting Coy., N.L., Mt. Malcolm* (*42*).—Work has been steadily carried on in this mine during the year with somewhat varying fortunes, but on the whole a fair amount of promise of ultimate success, and some interest has been paid. (4416/11.)

51. *Randwick G.M.L.* 978*C*, *Mt. Malcolm* (*43*).—During the year this lease was abandoned. An offer of £200 was received for the Cornish boiler but no sale had been effected up to the end of the year. (3551/10.)

52. *Hornsby G.M.L.* 937*N*, *Nannine* (*formerly North Pole and Gibraltar*) (*45*).—*In September,* 1912, the party owning this mill were allowed a subsidy of 1s. per ton on ore crushed for the public. Operations for the year were carried on with much difficulty owing to lack of ore and the battery having got into bad repair. Towards the end of the year negotiations were in progress for selling the mine and plant to the neighbouring Romsey mine. (4337/09 and 3409/12.)

53. *Callion G.M. Coy., W.A., N.L., Callion* (*46*).—Early in the year the Company went into liquidation, and part of the plant was taken possession of by the merchants who had supplied it and the remainder by this Department. Attempts were made to induce local parties to take over the battery for public crushing purposes, but came to nothing. Tenders were invited for purchase of the plant belonging to the Department, but none acceptable were received. The Superintendent of State Batteries could not see his way to utilise the battery as a State plant. At the end of the year the Government interest in the plant was sold to the Westralian Machinery Corporation for £300. (5884/10 and 3158/12.)

54. *Red Hill Westralia G.M. Coy., Ltd., Sons of Erin Battery, Higginsville* (*47*).—No progress was made in this matter during 1912. (1866/07.)

55. *Phoenix G.M.L.* 622*N*, *Quinn's* (*49*).—The party owning this mine separated early in the year and operations came to a standstill in April. The mine was under exemption during all the second half of the year. There is no prospect of the party being able to go on with the venture. (3911/10.)

56. *Lane Mill Syndicate, Cue* (*51*).—In March an application was made for a further loan of £3,000 to instal the Oliver continuous filter system in connection with the Lane mill plant, but this was not agreed to. Arrangements were then set on foot for giving the Lane mill an extended trial under Government supervision, but before these came to any result the owners asked to be allowed to remove their mill to the Chunderloo mine at Yaloginda, which has since been agreed to. See No. 65 hereunder. (2923/10 and 943/12.)

57. *Southern Cross G.M.Ls.* 1076 *and* 1067, *Bulong* (*52*).—Work was carried on during the year in this battery under great difficulties on account of the lowness of grade of the ore, and the party were unable to reduce their indebtedness in regard of the loan. (4726/11.)

58. *Ravensthorpe Battery Coy.* (*53*).—In June the Hon. the Minister approved of an additional subsidy of 1s. per ton on all ore other than low grade for a period of six months as from 1st July. During the year a further sum of £30 was advanced for the purpose of purchasing a pump for the battery. (2325/11 and 3683/12.)

59. *Great Victoria G.M.L.* 719, *Yilgarn* (*54*).—The supply of water within this mine mentioned in last year's report soon gave out altogether, rapidly falling to below the 300ft. level, and in March the owners made application for a further loan to assist them in getting a battery water supply and increase their crushing plant. A winze was started below the 300ft. level which almost at once got into very dense hard pyritic ore, work in which soon had to be suspended for lack of funds. In May a further loan of £1,000 was authorised, to be expended in sinking the winze further to get water and the balance to be devoted to getting a cyanide plant. With much difficulty the winze was carried down over 50 feet without striking the footwall, getting out of the dense sulphide ore, or obtaining a good flow of water. The contractor then threw up his contract, and further sinking remained in abeyance pending results of negotiations to sell the mine. In October Mr. R. Hamilton took an option over the property, and for the rest of the year the owners confined themselves to working the shallow ground and crushing when water was available. (3155/11 and 2675/12.)

60. *Battaglia and party, Battlesville G.M.L.* 931*R*, *Yundamindera* (*55*).—Transactions with this party were not at all satisfactory during 1912 owing to mishaps to the plant and their inability to carry on operations for want of funds. Further assistance was eventually granted, which increased the total advances authorised to £1,000. In September Mr. Battaglia reported that the battery was working again, and it continued to do so more or less throughout the year. (2071/12 and 371/13.)

61. *Red, White, and Blue G.M.L.* 641*B*, *Curran's Find, Youanme.*—Early in December the Hon. the Minister approved of a loan of £1,500 to Messrs. Bellchambers and Martin to assist them in purchasing and erecting a 5-head battery; the loan to carry 5 per cent. interest and to be repayable by 10 per cent. of gross produce of leases beginning three months after starting battery, and 6d. per ton on all stone crushed for the public. The matter was not completed at the end of the year. (1353/10.)

62. *McCahon and party—Cyanide Plant at Mt. Ida Battery.*—This party had erected a cyanide plant alongside the Mt. Ida State Battery, and were treating sands for the prospectors, but found themselves £430 short of being able to meet the total expenditure of £14,165 6s. 8d. incurred for plant and treatment. As their operations were of much service to the district the Minister agreed to advance a sum of £400 on security of a bill of sale over the plant to assist them in continuing treatment operations. In November notice was received from the party that they had ceased operations about three months before for lack of material to treat and could not resume till more sands were accumulated. (363/12.)

63. *Donovan's Find G.M.L. 768, Yilgarn.*—In March, 1912, Mr. G. H. Howlett offered to buy this mine from the liquidator of the Greenmount Mines No Liability, and to erect a battery for public crushing purposes if a loan of £1,000 were allowed to him to assist him in the venture. After a good deal of negotiation it was agreed to lend Mr. Howlett plant to the value of £1,000 on the hire-purchase system, the plant to be selected by himself and erected by him, on condition that he would crush for the public on very favourable terms, not exceeding 8s. 6d. per ton for ore returning under 2oz. of gold per ton. The plant was in running order in September and has proved of very great assistance to the prospectors of the district round it. (3772/07 and 3145/12.)

64. *King's Sound Mining Co., Ltd., "Taylor's Wolfram Reward" M.L. 146H, Derby.*—During 1911 assistance was given to the prospectors of this tin and wolfram mine by way of subsidy of £45 towards cartage of five tons of ore, and in June, 1912, the Company formed to work it applied for a loan of £250 to assist them in erecting plant upon it, which was approved. Part of the plant sent from Perth was lost in the unfortunate wreck of the s.s. "Koombana," and much delay was experienced in getting the plant erected in a place so difficult of access, but eventually the mill was got running by the end of the year. In October a further loan of £250 was authorised on condition of the plant being made available for public crushing. (2322/11.)

65. *Chunderloo G.M.L. 1084N, Yaloginda.*—The *Lane Mill Syndicate* (No. 56 above) having purchased the Chunderloo lease at Yaloginda, obtained permission from the Minister to remove their Lane Mill plant to it from the Princess Royal lease at Cue, and were granted a loan of £550 in aid of removal and erection of the mill plant, provision of winding machinery, and shaft sinking, the former loan on the plant being still maintained, and both loans secured upon the plant and mine. The mine was sampled and found to give very encouraging results. At the end of December documents had not been quite completed. (5947/10.)

66. *Star of Fremantle G.M.L. 645S, Kunanalling.*—About the middle of the year the owner of this mine was granted a loan of £325 in order to complete purchase of his plant, on condition of his giving a mortgage to secure repayment of the loan, and that he would crush for the public on terms prescribed by the Minister. (4422/07 and 3912/12.)

(c.) *Boring.*

67. *Mt. Morgans Diamond Drilling and Exploration Syndicate, Ltd., Mt. Morgans (58).*—Nothing was done in this matter during 1912. (1697/09.)

68. *J. Rollo, Boring on North Lead, Kanowna (61).*—Mr. Rollo did further boring on his own account during 1912 without Government assistance, and in consequence was later on granted some help in getting machinery for a shaft (see Stanley, No. 28). (1016/12.)

69. Violet G.M.L. 835, Golden Valley (*63*).—In February the lease was surrendered in exchange for G.M.L. 2653, but nothing further was done in respect of the expenditure on diamond drill boring. (812/09 and 480/13.)

70. *Boulder Deep Lead Prospecting Coy., Ltd. (64).*—Boring was finished and the plant returned in February, 1912, without any success being reported. (1415/11.)

71. *Diamond Drilling at Cue (65).*—No further boring was done during 1912. The average cost of the boring done during 1911, viz., No. 1 bore 601 feet, and No. 2 bore 530 feet, proved to be £777 14s. 6½d., equal to 13s. 9d. per foot. The country was hard granite and quartz. (3887/10.)

72. *Boring for Coal at Eradu (66).*—A request for further assistance in this work early in 1912 was refused, the Assistant Government Geologist after examination of the locality being of opinion that there was no probability of success of the proposed operations. Boring on lines laid down by the Assistant Government Geologist was, however, approved and carried out departmentally, independently of the Company which did the previous work, but without making any discovery of coal. (3642/10 and 402/09.)

73. *The King's Cairn Mining Company, Ltd., Parker's Range.*—In 1191 this Company applied for assistance in boring with a diamond drill to test the large lode of brown iron ore forming "King's Cairn or Mt. Caudan" at Parker's Range, and assistance was approved at the rate of £ for £ expended by the Company, whose capital was £500. Owing to various delays boring was not begun till February, 1912. Two bores were made, No. 1 304 feet deep at an angle of 60deg. from the horizontal, and No. 2 831 feet deep bored vertically. In No. 1 bore iron ore *talus* was passed through for 47 feet from surface, then weathered clayey rock to 215 feet, where a lode of brown iron ore was cut which proved to be 74 feet in thickness on the line of the bore. The remaining 15 feet bored were in lode material composed of brown iron ore and quartz, but as the bore was found to have passed through the iron ore while still in the thoroughly oxidised zone it was not thought well to continue in that bore. In No. 2 bore there were about 28 feet of iron ore *talus* at 10 to 38 feet from surface, then weathered clayey rock down to 448 feet, where brown iron ore was cut which continued to 495 feet, and then was succeeded by 30 feet mostly of carbonate of iron. The oxidised zone went down to the depth of 495 feet, a very unusual feature in this State so far as yet known. At 603 feet the bore passed into a lode of nearly solid pyrrhotite and went through it 104 feet, and six feet more of the same material were cut from 715 to 721 feet. The remainder of the bore was mostly in micaceous schist country with a good deal of pyrrhotite, magnetite, quartz, and quartzite. It is evident that there is here a huge lode "formation" heavily charged with pyrrhotite and in parts also much magnetite. The pyrrhotite contained no minerals of value except sulphur, the average of the 104 feet bored through being 22.78 per cent. of this element. It could readily be concentrated

to about 14 per cent. magnetite and 82 per cent. pyrrhotite, equal to 31½ per cent. of sulphur, which would be marketable for sulphuric acid making, and probably in actual mining work a richer grade of sulphur ore could be picked out without difficulty. The cost of the boring was £929 1s. 3d., the work being rendered much more expensive than it otherwise would have been by the misfortune of getting the rods broken in the bore, which entailed much cost and loss of time before they were recovered. These very interesting bores and the rocks passed through in them have been reported upon by the Geological Survey of W.A., in a *Bulletin* now in preparation. (1054/11.)

74. *Lord Cardigan G.M.L.* 1042, *Southern Cross.*—A bore was put down with a diamond drill on this lease with the object of testing at depth one of the large "jasper bar" lodes common in the Yilgarn field, portions of which were rich at surface. The boring was done at the expense of the Government entirely, under Section 24 of "The Mining Development Act, 1902," but on condition that the owners of the lease should give security that in the event of good values being found they would undertake to repay the expenditure in boring. The bore went down at an angle of 63deg. from the horizontal, a distance of 830 feet. Lode matter was cut at 192½ft. to 218½ft., 299ft. to 301ft., 320ft. to 321ft., 360ft. to 363ft., 471ft. to 475ft., 490½ft. to 499ft. 10in., 601ft. 2in. to 609ft. 9in., 622ft. 2in. to 624ft. 8in., 629ft. 1in. to 667ft., and 806ft. to 808ft., but assays showed only traces of gold in the cores. The total cost of the work was £852 18s. 8d. inclusive of transport, or £795 19s. 7d. for drilling alone, equal to £1 0s. 6½d. and 19s. 2d. per foot drilled respectively. Labour cost was 8.26s. per foot drilled, fuel 1.14s., water 3.22s., stores 0.82s., diamonds 5.79s., total 19.18s. (3865/10.)

75. *Allerton G.M.L.* 2529, *Southern Cross.*—The owners of this lease made application for the use of the diamond drill while in the Southern Cross district to try their lode below the water level at shallow depth, and this was eventually agreed to, the leaseholders giving security upon their lease for return of the cost if values were proved by the drilling. The lode was struck at 113ft., and passed through at 131ft., but was very poor, though some of the core showed a few specks of free gold. Total depth of bore 155 feet on angle of inclination of 80deg. A second bore, also at 80deg., was then authorised, intended to cut the lode about 200 feet, but did not get it till 261ft., where a lode was passed through for 5ft. 4in. At 283ft. 4in. to 286ft. 10in., more lode matter was cut, containing a little gold, and the bore was then carried down to 338ft., when it was stopped and the drill dismantled and removed. (134/12.)

76. *Purchase of Carbons, Repairs to Drills, etc.*—Expenditure on these items is shown in tables hereunder.

(*d.*) *Miscellaneous Advances.*

77. *Mt. Magnet Municipal Council Water Supply* (*56*).—Very little repayment was made during 1912, and in December this matter was handed over to the Water Supply Department for further collection of moneys owing. (63/05.)

SUMMARY OF EXPENDITURE ON MINING DEVELOPMENT UNDER THE MINING DEVELOPMENT ACT 1902, AND FROM THE MINING DEVELOPMENT VOTE FROM 1ST JANUARY TO 31ST DECEMBER, 1912.

Mine or Owner.	Mining Centre.	Amount.	Total.
		£ s. d.	£ s. d.
A.—Advances in aid of Mining Work and Equipment.			
Klondyke	Warrawoona	249 10 0	
Riverina	Mulwarrie	220 0 0	
Sunset G.M. Co.	Southern Cross	90 0 0	
Comstock	Randalls	48 15 0	
Lubra Queen	Kookynie	500 0 0	
Princess Royal	Norseman	624 5 10	
Specimen Hill	Burtville	78 2 2	
Dostmond	Yerilla	271 15 3	
Jenkins, Brown and Cramp	Bulong	47 9 11	
Hawk G.M.	Desdemona	107 0 0	
Creme D'Or.	Day Dawn	750 0 0	
Morning Star	Boulder	284 19 4	
Havilah Development	Black Range	180 15 8	
			3,452 13 2
B.—Advances in aid of Erection and Equipment of Batteries for Public Crushing.			
Norman, Spencer, and Others	Quinns	50 0 0	
Ravensthorpe Battery Co.	Ravensthorpe	38 8 2	
Battlesville	Yundamindera	331 12 8	
Great Victoria	Southern Cross	641 15 0	
King Sound G.M. Co.	Derby	250 0 0	
McCahon & Herbert	Mt. Ida	400 0 0	
Donovan's Find	Jacoletti	1,000 0 0	
Star of Fremantle	Kunanalling	320 0 0	
			3,031 15 10
C.—Boring Advances.			
Boulder Deep Alluvial	Boulder	66 2 0	
Diamond Drilling	Cue	20 3 0	
Kings Cairn	Southern Cross	929 1 3	
Lord Cardigan	do.	852 18 8	
Allerton Leases	do.	235 3 0	
			2,103 7 11
D.—Miscellaneous Expenditure.			
Preliminary Investigations	Various	127 15 3	
Renewals and Repairs, Diamond Drills	do.	129 10 3	
Rebates, *re* Water Supply	do.	346 7 7	
Well near King' Sound Mine	Derby	160 0 0	
Preliminary Investigations (sampling mines)	Various	114 18 7	
Payne's Find, Pipe Line	Paynesville	98 6 6	
Purchase of Slug of Gold	Kurnalpi	833 1 3	
			1,809 19 5
Subsidies on Carting Long Distances to Batteries.			
Hannibal & Dunstan	Menzies	7 0 0	
Smith	Bulla Bulling	2 5 8	
Commissioner of Railways	Bullfinch	5 10 0	
Wilson, G.	Eucalyptus	18 0 0	
Grenville	do.	13 17 6	
Weinert, L.	Southern Cross	2 10 0	
Collier, R.	Callion	90 6 0	
Schmitz, W.	Meekatharra	12 10 0	
Callagher & Party	Menzies	10 10 0	
Thompson & Coates	Coodardy	13 0 0	
Skipper & Mann	Bullfinch	2 10 0	
Weber, E. P.	Wyman's Well	18 15 0	
Hayden, J.	Meekatharra	3 5 0	
Podger & Party	Linden	8 15 0	
Athlone Option Syndicate	Southern Cross	10 0 0	
Smart & Stride	Marda	14 0 0	
		1 6 0	
		23 15 0	
		4 0 0	
State Batteries.		5 3 0	
Recoups of Crushing Charges deducted in lieu of Cartage subsidies, eight items, viz. :—		3 11 0	
		21 6 0	
		3 18 0	
		26 11 0	
			322 4 2

SUMMARY OF EXPENDITURE ON MINING DEVELOPMENT, ETC.--*continued.*

Mine or Owner.	Mining Centre.	Amount.	Total.
		£ s. d.	£ s. d.
Subsidies to Batteries Crushing for the Public.			
Spencer & Thompson, 151 tons	Berrigrin	15 2 0	
Jacoletti G.M., 637 tons	Yilgarn	47 15 6	
Langford & Smith, 501 tons	Lawlers	50 2 0	
Poole, H., 2,043 tons	do.	204 6 0	
Ware, C. H., 1,577½ tons	Kundip	78 17 6	
Reynolds, H., 1,566½ tons	do.	156 13 0	
Jameson & Party, 65 tons	Gindalbi	8 2 6	
Patterson, W. A., 535½ tons	Parker's Range	26 15 6	
Two Boys Battery, 103 tons	Kundip	10 6 0	
Batagglia & Party, 54 tons	Yundamindera	4 1 0	
Gem Consolidated, 532 tons	Kundip	53 4 0	
Ravensthorpe Battery Company, 551½ tons	Ravensthorpe	35 7 6	
King of the Hills, 188 tons	Diorite	14 2 0	
Stuckey, N. S., 601½ tons	Carrabin	60 3 0	
Gem G.M. Co., 619½ tons	Kundip	71 19 0	
Phippard Bros., 95 tons	Pilbarra	118 15 0	
Edjudina, G.F., Ltd., 107½ tons	Edjudina	8 1 3	
Buhlman, F. T., 698 tons	Mulgarrie	34 18 0	
			998 10 9
Subsidies on Devetapment Work.			
Rufin, P.	Linden	8 2 0	
Do.	do.	6 10 0	
Do.	do.	7 5 0	
			21 17 0
Providing Transport for Prospectors.			
Purchase of Horses, Camels, etc.			253 2 10
Timber Tramway	Cue		15,469 4 10
Purchase of Tailings	Various		16,852 19 10
			£44,315 15 9

Note.—Credits totalling £459 12s. 2d., not shown in this return, and credited to Development of Mining Vote, were made during the year. Net expenditure as per Treasury figures £43,865 3s. 7d.

Item £15,469 4s. 10d., Timber Tramway (Cue) was transferred from Loan Suspense Account to the debit of Development of Mining.

£16,825 19s. 10d. is the amount paid for the purchase of tailings, and is represented by the tailings lying at the various State Batteries through the State.

ADVANCES REFUNDED.
1st January, 1912, to 31st December, 1912.

Mine or Owner.	Mining Centre.	Amount.	Total.
		£ s. d.	£ s. d.
Hidden Secret Gold Mine	Eundynie	690 11 2	
Hornsby Gold Mine	Nannine	27 4 10	
Jourdie Enterprise Gold Mining Syndicate	Jourdie Hills	82 9 6	
Klondyke Boulder Gold Mine	Warrawoona	88 5 6	
Lady Pratt Gold Mine	Kanowna	30 13 1	
Mulga Queen Gold Mine	Laverton	401 8 1	
Southern Cross Gold Mine	Bulong	25 0 0	
			1,345 12 2
Recovered from Sale of Securities.			
Brittannia Gold Mine		20 0 0	
Eclipse Mine		32 5 0	
Greenbushes Prospecting and Mining Co.		68 16 9	
Jupiter Lease		24 17 5	
Lady Agnes		5 0 0	
Roebourne Copper and Gold Mines		200 0 0	
Royal Mint Lease		80 0 0	
Sunbeam Lease		12 0 0	
Sunset Gold Mine		5 17 0	
V's United Gold Mines		60 0 0	
			508 16 2
Miscellaneous Refunds.			
Mt. Magnet Water Supply		8 11 2	
Means of Transport for Prospectors		13 9 4	
Half cost of Boring Kings Cairn		381 8 7	
Cost of Diamonds, Kings Cairn		76 8 7	
Cost of Diamonds, Lord Cardigan		66 4 2	
Battlesville Mine Subsidy		4 1 0	
Amounts received, account purchase of tailings		2,229 19 11	
			2,780 2 9
			£4,634 11 1

"The Mining Development Act, 1902."

Advances written off to 31st December, 1911.

Year Authorised.	Name of Mine or Borrower.	Nature of Work.	Locality.	Amount of Loan and Interest written off.	Date written off.
				£ s. d.	
1902	Manners & Gore	Battery erection	Gabanintha	285 0 4	29/5/05
1903	Cheyne, C. C.	Sinking Shaft	Yandanooka	70 17 10	31/12/04
	Foran and party	Opening deep alluvial lead	Kalgoorlie	150 0 0	14/2/06
	Hannan's Reward & Mt. Charlotte G.M. Co., Ltd.	Boring for reef	Kalgoorlie	383 11 9	31/12/04
	Irwin River Coal and Prospecting Syndicate	Boring for coal	Irwin River	925 6 0	23/3/05
	Jamieson, C. A.	Opening deep alluvial lead	Smithfield	50 0 0	30/6/04
	South Fingall G.M. Co., Ltd.	Boring deep alluvial lead	Day Dawn	1,030 18 0	18/1/04
	Waite and party	Opening deep alluvial lead	Trafalgar	100 0 0	18/4/05
1904	Admiral G.M.L.	Boring for reef	Peak Hill	719 1 1	30/3/06
	Blake, McKinnon, & Muir	Working deep lead	Kanowna	50 0 0	23/9/04
	Bell, Wm.	Battery water supply	Mosquito Creek	520 12 6	31/12/05
	Jones and party	Oversight	Bulong	882 15 9	27/3/11
	Marshall, Geo.	Erection of puddler	Coolgardie	152 17 2	15/2/06
	Ninety-Eight G.M.L.	Sinking shaft	Bulong	262 2 11	13/3/07
	President Loubert	Sinking shaft	Callion	255 18 3	12/6/07
	Stuart, Rollo, & McIvor	Boring for lead	Kanowna	262 11 6	22/5/07
	Tierney and party	Sluicing alluvial	Coolgardie	150 0 0	22/10/04
	Westralian Mining and Oil Corp., Ltd.	Boring for oil	Warren River	618 14 7	20/3/06
	White Flag Consols	Sinking shaft	Wilson's Patch	48 10 5	3/10/06
1905	Battler's Hope	Sinking shaft	Greenbushes	118 18 4	6/6/07
	Brooklyn G.M.L.	Sinking shaft and purchase of machinery	Lennonville	91 1 11	18/6/09
	Chadwick's Reward	Sinking shaft	Koolyanobbing	110 3 5	30/6/08
	Gt. Northern G.M. Co.	Sinking shaft	Kalgoorlie	203 5 0	8/4/08
	Iron King G.M.L.	Water supply	Bullabulling	25 0 0	29/6/05
	Haddon G.M.	Water supply	Southern Cross	71 8 4	22/11/06
	Little Doris G.M.L.	Battery erection	Erlistoun	356 3 0	25/9/08
	Monkland G.M.L.	Sinking shaft	Gindalbie	576 7 6	28/4/09
	Mt. Ida Battery Lease	Sinking shaft	Mt. Ida	313 6 2	29/5/07
	Pakeha G.M. Co.	Sinking shaft	Paddington	149 15 5	24/4/08
	Rollo's Reward G.M. Co.	Sinking shaft	Kanowna	314 16 3	20/4/10
	Trenton G.M. Co., N.L.	Crosscutting main shaft	Day Dawn	621 4 6	4/5/10
1906	Coolgardie Opal G.M. Co.	Crosscutting main shaft	Coolgardie	102 4 6	10/10/07
	Hague & Arthur	Battery erection	Menzies	158 19 7	3/9/08
	Kalgurli G.M. Syndicate	Mining development	Paddington	239 19 11	23/4/08
	Kingsmill, W. J., and party	Driving tunnel	Ravensthorpe	204 15 8	9/3/10
	Lubra G.M.	Purchase of machinery	Kookynie	64 15 10	23/3/10
	Menzies Prospecting and Development Co.	Sinking shaft	Menzies	594 0 11	3/3/09
	M.L. 374, Lost and Found		Greenbushes	64 4 1	22/8/11
	Nicholson, Mahoney, and O'Donohue	Battery erection	Gum Creek	351 14 2	5/2/08
	W.A. Sluicing Syndicate	Water supply	Coolgardie	309 1 3	21/2/07
1907	Coady, J. H.	Making briquettes	Collie	82 3 2	29/4/08
	Corrin, J.	Sinking shaft	Nullagine	195 3 1	26/8/08

	Cross, F.	Sinking shaft	Yarri	50 0 0	28/4/07
	Dellavedora and party	Sinking shaft	Parker's Range	106 13 10	27/11/08
	Elias, T.	Driving tunnel	Greenbushes	245 17 11	24/6/08
	Just-in-Time G.M. Co.	Battery erection	Mt. Morgans	1,011 19 9	3/12/08
	Providence Copper G.M. Co.	Sinking	Goongarrie	22 5 7	14/5/08
	Robinson and party	Battery erection	Mt. Ida	136 14 9	24/6/08
	Reid, G.	Sinking	Peak Hill	25 11 3	22/6/08
	Tierney, Aldridge, and party	Crosscutting	Coolgardie	162 6 3	18/2/09
	Whale, G.M.	Mining development	Niagara	129 18 3	29/12/08
1908	Chamberlain North G.M.	Extending tunnel	Wodgina	77 8 11	14/9/10
	Kanowna Low Grade	Purchase of machinery	Kanowna	93 17 3	16/2/10
	Shekleton, J. H.	Making briquettes		105 9 4	28/6/10
	Roebourne C. and G. Mines	Battery erection	Roebourne	169 10 9	29/10/12
1909	Dreadnought	Sinking Shaft	Menzies	50 0 0	19/7/11
	McLellan & Jmith	P.A. 221 N.B.	Broad Arrow	307 6 2	20/3/11
1910	Manton & Newson	Alathea	Menzies	195 19 11	22/8/11
				£15,128 10 0	

MINING DEVELOPMENT EXPENDITURE.

Advances outstanding at 31st December, 1912.

No. of File.	Name of Lease, Mine, or Borrower.	No. of Lease.	District.	Amount Authorised.	Principal Moneys Advanced.		Principal Moneys.		Interest.		Total Principal and Interest outstanding at 31st Dec., 1912.
					Previous to 1912.	During 1912.	Repaid.	Balance Outstanding.	Paid.	Outstanding.	
	A.—Pioneer Mining and Prospecting.			£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
90/12	Alicia	254F	Mt. Morgans	245 0 0	195 0 0	..	..	195 0 0	4 2 6	54 14 8	249 14 8
4434/08	Brittania (security purchased by E. C. O'Dea)	953M	Mt. Magnet	150 0 0	114 12 6	..	28 0 0	86 12 6	..	9 4 6	95 17 0
3016/11	Balkis	5354Z	Menzies	300 0 0	150 0 0	..	..	150 0 0	7 5 4	7 12 11	157 12 11
2866/07	Carbine South	758S	Kunanalling	500 0 0	401 10 0	..	..	401 10 0	87 11 9	20 9 1	421 19 1
2257/12	Champion South	817N, 1039N	Nannine	400 0 0	400 0 0	..	..	400 0 0	29 11 8	5 17 1	405 17 1
3323/00	Coolgardie P. D. and M. Syndicate	4093, 4117	Coolgardie	1,500 0 0	904 10 5	..	..	904 10 5	19 19 10	67 16 9	972 7 2
1986/10	Coolgardie Redemption	3918, 4052	Coolgardie	1,000 0 0	1,020 16 9	..	32 18 0	987 18 9	..	73 2 8	1,061 1 5
2334/12	Creme D'Or	389, 421, 422D	Day Dawn	1,000 0 0	..	1,000 0 0	..	1,000 0 0	..	23 18 9	1,023 18 9
427/11	Comstock, W.A.	1079Y	Randalls	200 0 0	..	48 15 0	..	48 15 0	..	0 10 0	49 5 0
29/05	Dostmund	788R	Yerilla	350 0 0	..	271 15 3	..	271 15 3	..	2 2 9	273 18 0
1144/12	Eclipse	1047X	Gindalbie	450 0 0	498 19 1	..	130 5 0	368 14 1	62 8 11	..	368 14 1
3166/09	Emily	1510	Day Dawn	400 0 0	372 1 9	..	..	372 1 9	..	44 7 10	416 9 7
977/12	Greenbushes P. and M. Co (security purchased by Phillips and party on tribute agreement)	M.L. 300	Greenbushes	1,200 0 0	1,068 6 10	..	108 0 1	960 6 9	..	109 10 11	1,069 17 8
4689/06	Havilah Development	349B	Black Range	600 0 0	..	180 15 8	..	180 15 8	..	1 10 8	182 6 4
4738/09	Hawk	725G	Desdemona	107 0 0	..	107 0 0	..	107 0 0	..	1 9 10	108 9 10
2150/11	Jourdie Enterprise	786S	Jourdie Hills	1,000 0 0	1,000 0 0	..	597 4 3	402 15 9	116 12 7	10 11 1	413 6 10
319/12	Jupiter (tribute agreement taken over by Huttley and party)	771M	Mt. Magnet	400 0 0	401 0 0	..	65 9 9	335 10 3	5 0 0	45 11 3	381 1 6
1435/12	Jenkins and party	P.A. 485Y	Bulong	300 0 0	..	88 18 5	..	88 18 5	..	0 5 3	89 3 8
2255/11	Kalgoorlie North End Development Co.	3880, 4146E	Kalgoorlie	1,500 0 0	1,500 0 0	..	..	1,500 0 0	20 11 3	41 11 7	1,541 11 7
1101/09	Kanowna Prospecting Syndicate	323X	Kanowna	750 0 0	666 9 3	..	7 0 0	659 9 3	..	..	659 9 3
2825/07	Kingdom Come	M.L. 112	Northampton	200 0 0	204 14 0	..	..	204 14 0	5 8 6	15 11 0	220 5 0
4548/11	Klondyke Boulder	604	Warrawoona	500 0 0	250 0 0	249 10 0	88 5 6	411 4 6	34 5 4	11 5 11	422 10 5
735/10	Lady Seddon	633B	Sandstone	200 0 0	136 0 0	..	..	136 0 0	..	11 13 7	147 13 7
363/06	Lady Florence	1265	Cue	1,000 0 0	1,000 0 0	..	..	1,000 0 0	..	259 19 9	1,259 19 9
3751/10	Lubra Queen	734, 735, 744, 749G	Kookynie	500 0 0	..	500 0 0	..	500 0 0	..	8 12 7	508 12 7
4000/05	Mindeloo	1518	Mindoolah	300 0 0	198 17 0	..	10 0 0	188 17 0	..	8 1 1	196 18 1
278/12	Morning Star	4484E	Boulder	368 0 0	..	284 19 4	..	284 19 4	..	5 14 5	290 13 9
3461/08	North End Mines, Ltd.	4054, 4037, 4039, 4231	Kalgoorlie	1,000 0 0	436 10 0	..	..	436 10 0	..	..	436 10 0
2898/11	Princess Royal	222, 653, 1016, 1048, 1114	Cue	1,000 0 0	1,000 0 0	..	..	1,000 0 0	..	94 16 8	1,094 16 8
3573/12	Princess Royal	106, 840, 972, 187, 587	Norseman	2,000 0 0	..	847 12 10	..	847 12 10	..	5 13 3	853 6 1
1373/12	Riverina	123N	Mulwarrie	500 0 0	158 19 10	220 0 0	..	378 19 10	..	13 11 10	392 11 8
2060/05	Specimen Hill	1644, 1947T	Burtville	100 0 0	..	100 0 0	..	100 0 0	..	0 12 9	100 12 9
697/09	Sunbeam	1121X	Kanowna	1,000 0 0	1,038 4 4	..	291 14 0	746 10 4	116 16 6	45 13 9	792 4 1
499/11	Sunset G.M. Co.	2240, 2253	Southern Cross	100 0 0	..	90 0 0	5 17 0	84 3 0	..	..	84 3 0
2426/11	V's United	271F	Mt. Morgans	672 2 0	578 16 1	..	110 0 0	468 16 1	2 16 5	35 2 3	503 18 4
4286/10	W. E. G.	505G	Niagara	500 0 0	297 13 1	..	..	297 13 1	..	89 10 4	387 3 5
2427/11	Westralia Tasmania	1665, 1745T	Erlistoun	300 0 0	300 4 9	..	51 0 0	249 4 9	64 4 4	12 17 7	262 2 4
1807/09	Wheal May	Loc. 6	Northampton	300 0 0	302 4 6	..	5 15 9	296 8 9	..	20 5 5	316 14 2

	B.—Assistance in Erecting Batteries and Treatment Plants to be used for Crushing for the Public.											
2120/09	Battlesville	931R	Yundamindera ..	950 0 0	732 3 6	331 12 8	..	1,063 16 2	2 18 6	62 5 2	1,126 1 4	
5884/10	Callion	860N	Callion	1,000 0 0	1,000 0 0	..	9 2 2	990 17 10	40 0 4	110 1 2	1,100 19 0	
3145/12	Donovans Find	768	Jacoletti	1,000 0 0	..	1,000 0 0	..	1,000 0 0	..	19 7 8	1,019 7 8	
3155/11	Gt. Victoria Leases	719, 944/5, 1229	Southern Cross ..	2,000 0 0	1,000 0 0	641 15 0	..	1,641 15 0	25 0 10	65 6 3	1,707 1 3	
3245/11	Hidden Secret North	4253, 4266 ..	Eundynie	1,000 0 0	1,000 0 0	..	904 0 0	96 0 0	181 10 0	..	96 0 0	
1343/07	Hodder, E.	M.A. 64 ..	Randalls	253 3 2	253 3 2	..	148 13 0	104 10 2	6 18 4	35 11 3	140 1 5	
4337/09	Hornsby	937N	Nannine	728 16 0	728 16 0	..	87 17 7	640 18 5	44 11 9	32 14 8	673 13 1	
2322/11	Kings Sound Mg. Co.	M.L. 146H ..	Derby	500 0 0	..	500 0 0	..	500 0 0	..	..	500 0 0	
943/12	Lane Mill Syndicate	..	Cue	650 0 0	650 0 0	..	..	650 0 0	3 16 3	62 11 5	712 11 5	
4475/11	Lady Pratt	1228X ..	Mulgarrie	250 0 0	205 4 10	..	87 5 0	117 19 10	22 2 5	3 13 6	121 13 4	
3785/08	Lady Agnes	916Y	Bulong	480 0 0	486 12 3	..	93 4 9	393 7 6	..	27 7 5	420 14 11	
4416/11	Malcolm Pros. Co.	1175C	Malcolm	1,550 0 0	1,550 0 0	..	..	1,550 0 0	294 8 9	200 9 5	1,750 9 5	
363/12	McCahon and party	..	Mt. Ida	400 0 0	..	400 0 0	..	400 0 0	..	10 17 6	410 17 6	
1518/12	Mystery	P.A. 157 ..	Yalgoo	350 0 0	367 5 2	..	313 10 0	53 15 2	..	5 11 0	59 6 2	
3276/10	Never Never	665	Yilgarn	1,000 0 0	1,073 15 9	..	191 16 4	881 19 5	..	177 19 0	1,059 18 5	
3911/10	Phœnix	622N	Quinns	250 0 0	200 0 0	50 0 0	..	250 0 0	17 12 1	12 15 3	262 15 3	
2325/11	Ravensthorpe Battery Co.	..	Ravensthorpe ..	1,300 0 0	1,000 0 0	38 8 2	..	1,038 8 2	..	109 11 0	1,147 19 2	
3551/10	Randwick	987C	Malcolm	560 0 0	577 3 5	..	43 4 6	533 18 11	..	45 3 5	579 2 4	
4726/11	Southern Cross, and Southern Cross S.	1067, 1076, W.R. 27	Bulong	1,000 0 0	1,000 0 0	..	95 15 3	904 4 9	31 12 6	71 7 11	975 12 8	
3362/11	Spring Hill	724	Parker's Range ..	855 0 0	855 16 5	..	215 11 10	640 4 7	164 6 1	57 1 2	697 5 9	
4422/07	Star of Fremantle	645S	Kunanalling ..	325 0 0	..	320 0 0	..	320 0 0	..	7 16 11	327 16 11	
	C.—Boring Advances.											
	Allerton Leases	..	Southern Cross ..	..	..	235 3 0	..	..	..	..	235 3 0	
	Boulder Deep Alluvial	..	Boulder	..	..	66 2 0	..	..	..	..	66 2 0	
	Diamond Drilling	..	Cue	..	..	20 3 0	..	..	..	..	20 3 0	
	Kings Cairn	..	Southern Cross ..	..	..	929 1 3	..	..	..	..	929 1 3	
	Lord Cardigan	..	Southern Cross ..	..	..	852 18 8	..	..	..	..	852 18 8	
	D.—Miscellaneous Advances.											
1746/12	Mt. Magnet Water Supply	..	..	460 17 10	460 17 10	..	155 0 5	305 17 5	..	..	305 17 5	
				39,754 19 0	27,736 8 6	9,374 10 3	3,876 10 2	31,131 0 8	1,411 12 9	2,277 0 10	35,511 9 5	
	A.—*Pioneering Mining and Prospecting*	..	..	23,217 2 0	14,595 10 2	*4,309 6 6	1,531 9 4	17,373 7 4	576 14 11	1,167 6 8	18,540 14 0	
	B.—*Assistance in Erecting Batteries, etc.*	..	..	16,076 19 2	12,680 0 6	†2,961 15 10	2,190 0 5	13,451 15 11	834 17 10	1,109 14 2	14,561 10 1	
	C.—*Boring Advances (for* 1912) ..	..	..	..	..	2,103 7 11	..	..	..	..	2,103 7 11	
	D.—*Miscellaneous Advances*	..	..	460 17 10	460 17 10	..	155 0 5	305 17 5	..	..	305 17 5	
				£39,754 19 0	27,736 8 6	9,374 10 3	3,876 10 2	31,131 0 8	1,411 12 9	2,277 0 10	35,511 9 5	

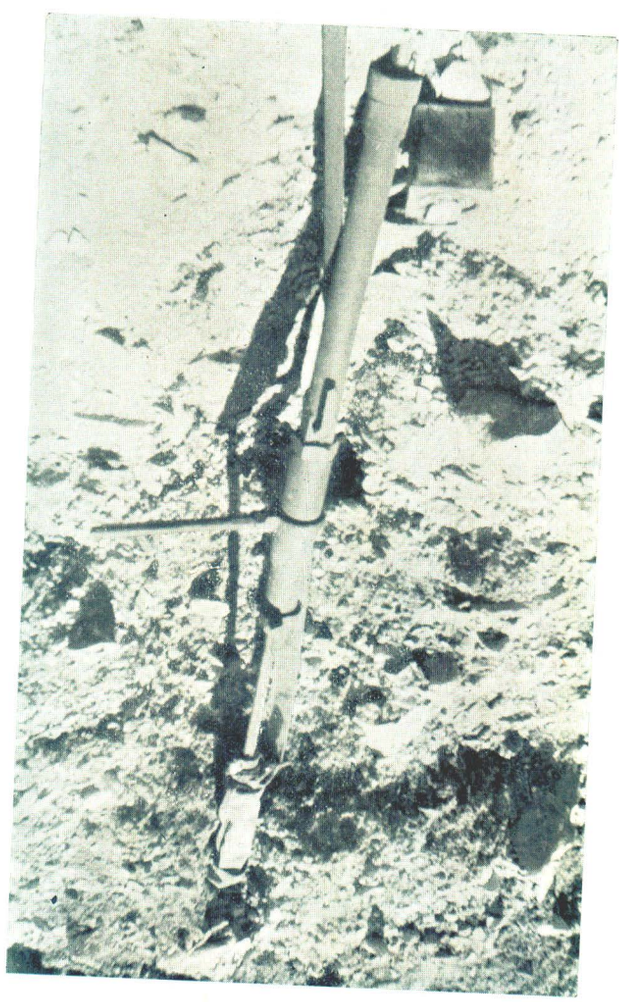
* Summary of Expenditure shows £3,772 13s. 2d. = difference £536 12s. 4d., representing vouchers sent forward for payment, but not scheduled at 31st December, 1912. † Summary of Expenditure shows £2,771 15s. 10d. = difference £250 0s. 0d., representing vouchers sent forward for payment, but not scheduled at 31st December, 1912.

APPENDIX No. III.

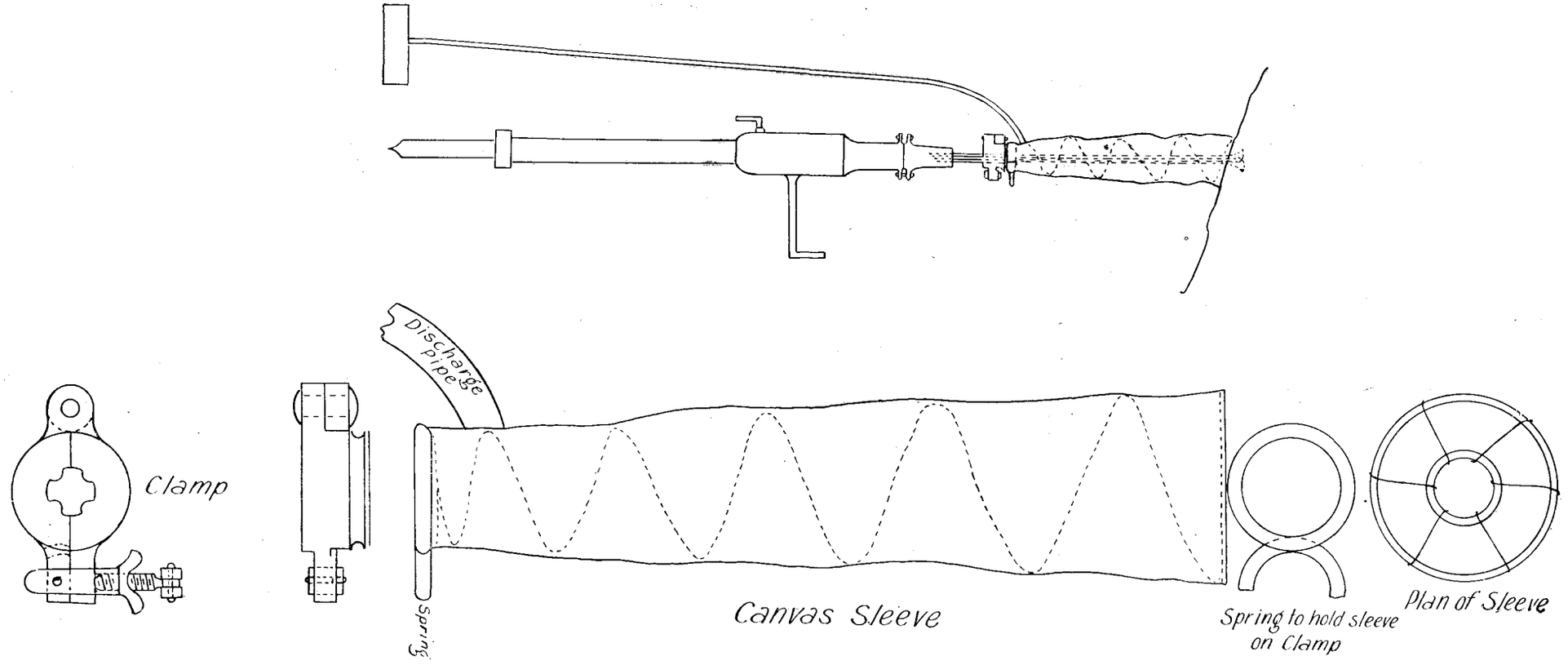
During October, 1911, Mr. J. O. Hudson, Inspector of Mines at Kalgoorlie, forwarded the following report on the Murphy Rock Drill:—

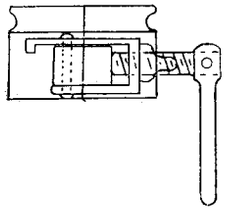
"The drill does not give satisfaction except in uppers. You will note that the drill is of the "hammer type," and that there is no bar used in connection with it. The drill is fitted with a piston at the lower end. When air is turned on, the air forces the piston upwards and the drill is thus kept against the rock. The air being released, the drill descends and a fresh drill can be inserted. Messrs Shaw and Walker of the Lake View and Star G.M. have patented an appliance for preventing dust in connection with this drill. A blue print is attached.

"I have been present at two trials, and the results have been most satisfactory. The last trial was at the 300ft. level of the Boulder Deep Levels. The drill ran ten minutes, bored twenty-one inches, and saved five pounds and a half of dust. There was virtually no dust discernible in the atmosphere. The ground where the drill was operating was sulphide ore, but not nearly as hard as on some of the mines on the field. If this drill will bore in the hard ground, the appliance of Messrs. Shaw and Walker will ensure practically the elimination of all dust in rises. There is no doubt that the appliance is one that is simple and practical, and as far as this type of drill is concerned the results in regard to prevention of dust are all that can be desired."



Murphy Rock Drill with Walker and Shaw's Dust Collector attached.





—WALKER & SHAW'S ROCK DRILL DUST COLLECTOR—

—½ Size—

— Patent applied for 22nd Sept 1911 —

ANNUAL REPORT OF THE BOARD OF EXAMINERS FOR COLLIERY MANAGERS' AND UNDER MANAGERS' CERTIFICATES UNDER "THE COAL MINES REGULATION ACT, 1902."

The Under Secretary for Mines, Perth, W.A.

Office of the State Mining Engineer,
Department of Mines, Perth, W.A.
7th April, 1913.

We have the honour to forward, for the information of the Hon. the Minister for Mines, the Annual Report of the Board of Examiners for Colliery Managers, etc., for the year 1912.

Two ordinary meetings and one special were held during the year under review, on 30th May, 31st October, and 9th August.

Suggested Amendment of "The Coal Mines Regulation Act, 1902.—The Hon. the Minister advised the Board that the amendments recommended by them would be considered when an amending Bill is being prepared.

Reciprocity with other States regarding Certificates under the Coal Mines Regulation Act.—This matter being submitted to the Hon. the Minister, he signified his approval of reciprocity.

During the year first class certificates of competency were issued by the Board, without examination, to A. W. Edwards and A. D. Armstrong, both parties being holders of corresponding New South Wales certificates.

One applicant sat for a 2nd class certificate of competency at the April examination, but he failed to secure the requisite number of marks for a pass.

At the special meeting called to consider an application for restoration of a cancelled first class certificate of competency it was decided to reconsider the question at the meeting of the Board to be held in April, 1913.

On the retirement from the Board of Mr. T. D. Briggs, late Inspector of Mines at Collie, the Board placed on record its appreciation of his services and regret at losing him as a member of the Board.

A copy of the papers set at the examination held in April, 1912, for a 2nd class certificate of competency is appended to this report.

We have, etc.,

A. MONTGOMERY,
State Mining Engineer, Chairman.

A. GIBB MAITLAND,
Government Geologist, Member.

ROBT. McVEE,
Inspector of Mines, Collie, Member.

F. A. LANE,
Acting Secretary.

The Coal Mines Regulation Act, 1902.

EXAMINATION FOR SECOND CLASS CERTIFICATES OF COMPETENCY AS UNDER MANAGER OR OVERMAN.

SUBJECT: VENTILATION.

Thursday, 25th April, 1912, 10 a.m. to 11.30 a.m.

1. What is "natural" ventilation? Why is it commonly insufficient for colliery purposes? (Possible marks, 40.)
2. What are the principal advantages of furnaces as ventilating agents, and the main drawbacks to their use? (Possible marks, 50.)
3. Describe a water-gauge and explain its uses. What pressure in pounds per square foot is indicated by a reading of 2¼ inches W.G.? (Possible marks, 40.)
4. Explain with sketches how to arrange so that a fan at surface may be used either for blowing in or drawing out air. (Possible marks, 50.)
5. Describe how you would test for fire-damp in a mine. What gases are formed as the result of an explosion of fire-damp, and how do they affect men exposed to them? (Possible marks, 60.)
6. The in-going air current is to be split amongst several districts of different sizes. how would you proceed to effect this object so as to get equally good ventilation in all the districts? (Possible marks, 60.)

(Possible total marks, 300.)

SUBJECT: MINING OF COAL.

Thursday, 25th April, 1912, 11.30 a.m. to 1 p.m.

1. How would you secure the roof of a long wall face with hard roof and rather soft floor? (Possible marks, 35.)
2. State fully the precautions necessary in using explosives in a gaseous mine worked on the bord and pillar system. (Possible marks, 35.)
3. On making an inspection of the mine workings before work was commenced on the day shift, you discoved a fire in one of the bords (say in the left-hand level at the Co-operative mine, Collie): state the action you would at once take, and the subsequent operations, to deal with the fire if you were placed in charge of the work. (Possible marks, 60.)
4. Describe a bricking curb and the method of fixing the same. (Possible marks, 30.)
5. If you were under manager or overman of a mine, what precautions would you take to prevent accidents by falls of coal and roof? (Possible marks, 30.)
6. How would you arrange the grades at the top and bottom of a self-acting incline? (Possible marks, 25.)

7. Describe, and show by sketch, the method of timbering you would adopt in a level roadway in a mine where the inclination of the seam is 1 in 3. (Possible marks, 30.)

8. What precautions would you take to protect men working in dip headings from runaway skips? (Possible marks, 25.)

9. Describe how you would take out the pillars in any of the Collie mines you are acquainted with? (Possible marks, 30.)

(Possible total marks, 300.)

SUBJECT: ARITHMETIC.

Thursday, 25th April, 1912, 2 p.m. to 3 p.m.

1. How many tons of coal are there in a pillar 21 yards long, 8 yards 2 feet wide, and 6 feet 4 inches high, taking the weight of the coal at 84½ lbs. per cubic foot? (Possible marks, 25.)

2. What is the cost of 32 tons 13 cwt. 0 qrs. 16 lbs. of steel rails at £8 16s. 6d. per ton? (Possible marks, 25.)

3. How many superficial feet of timber are there in—

20 pieces 16ft. x 9in. x 2in.
14 pieces 18ft. x 6in. x 4in.
60 pieces 14ft. x 6in. x 1in.
40 pieces 20ft. x 12in. x 3in.,

and what is their cost at 17s. 6d. per 100 feet super? (Possible marks, 25.)

4. Add together $7\frac{1}{2}$, $18\frac{5}{12}$, $1\frac{5}{6}$, and $2\frac{1}{4}$, and multiply the sum by $\frac{1}{2}$ of $3\frac{1}{16}$. (Possible marks, 12.)

5. If 18 men fill 648 tons of coal in 6 days, how many men would be required to fill 1,080 tons in 4 days? (Possible marks, 13.)

(Possible total marks, 100.)

SUBJECT: ROADWAYS.

Thursday, 25th April, 1912, 3 p.m. to 4 p.m.

1. Describe, with use of sketches showing dimensions, how you would construct the track for pony haulage in a single-track roadway the floor of which is rather wet and soft. (Possible marks, 25.)

2. In making daily examination of the roads in a mine in which electrically driven machines are employed, what are the points in connection with the electric installation to which you would give special attention in order to see that all is being kept safe for men passing along the roads? (Possible marks, 25.)

3. A roadway one mile in length is to be laid with rails weighing 14 lbs. per yard: how many tons of rails would be required? (Possible marks, 15.)

4. What are the objects for which ballast is employed in construction of railway tracks? Name various materials suitable for use as ballast on colliery railway tracks. (Possible marks, 15.)

5. Describe the construction of a level crossing on two tracks crossing one another at right angles, used for horse haulage. (Possible marks, 20.)

(Possible total marks, 100.)

SUBJECT: THE COAL MINES REGULATION ACT, 1902.

Thursday, 25th April, 1912, 4 p.m. to 5 p.m.

1. What are the provisions of the Act regarding supply to employees of printed copies of the Special Rules? (Possible marks, 20.)

2. What is the duty of mine employees as to reporting accidents to persons? (Possible marks, 20.)

3. What is the requirement of the General Rules as to experience of persons employed in coal-getting? (Possible marks, 20.)

4. What do the General Rules require as to dimensions of travelling roads in which horses are used? (Possible marks, 20.)

5. What is required to be done when inflammable gas is found in any part of a mine in dangerous quantity? (Possible marks, 20.)

(Possible total marks, 100.)

DIVISION III.

REPORT OF THE SUPERINTENDENT OF STATE BATTERIES FOR THE YEAR 1912.

The Under Secretary for Mines.

State Batteries Branch, Mines Department,
Perth, 20th March, 1913.

Sir,

I have the honour to submit my report, for the information of the Hon. the Minister for Mines, on the work performed by the State Batteries Branch of the Mines Department during the year 1912, being the fifteenth Annual Report.

Milling.

There were 282 head of stamps, constituting 35 plants, available for milling operations on the Goldfields. Three 10-head plants (Boogardie, Lennonville, and Tuckanarra) were leased under agreements providing for charges and *modus operandi* similar to those adopted by the Department.

Altogether there were 1,026 parcels of auriferous ore milled. The average size of each parcel was 55.2 tons, 56,636½ tons of ore being milled at 35 plants.

The tonnage milled was 4.6 per cent. less than that treated during 1911 and 36.6 per cent. less than the total handled during 1910.

Schedule 5 shows the details for each plant of the number of parcels treated, the yield by amalgamation, the value of the tailings, and the gross value of the ore.

The average value of the bullion from all centres at which State batteries were operating was unchanged, being 72s. per oz.

At the leased batteries and also at Mt. Ida and Ravelstone, although records were kept relative to the assay value of the tailings, no purchases were undertaken.

The average percentage of amalgamation was 77.1 per cent., an increase of 1.1 per cent. as compared with the amalgamation return for 1911.

The expenditure was £36,171 14s. 8d., or 12s. 9.26d. per ton, an increase of 2.32 pence per ton when compared with the milling expenditure for the year 1911.

The revenue was £27,555 13s. 10d., or 9s. 8.76d. per ton, a falling off of 1.61 pence per ton as compared with the milling revenue for the year 1911.

The loss on milling operations was £8,616 0s. 10d. Only two mills worked by the Department returned a profit, viz.:—Black Range, £78 9s. 1d.; Wiluna, £174 4s. 1d.

With a decline in tonnage of 2,736½ tons, and a consequent advance in the cost of treatment of 2.32 pence per ton, and with the less revenue of 1.61 pence per ton, the loss was £557 10s. 7d. more than last year.

The above-mentioned figures represent the gross expenditure incurred, including Head Office Administration 9.82 pence per ton, renewals and repairs 1s. 4½d. per ton, and general maintenance.

The actual working costs amounted to 9s. 11.6d. per ton of ore milled, or one farthing per ton less than the actual working costs during 1911. (Schedules 1 and 8.)

Tin Treatment.

At Greenbushes there were two plants operative; one at Bunbury end—a 5-head battery and a Huntington mill—and the other at Salt Water Gully—a Chilian mill.

136 parcels of tin ore averaging 39.1 yards each were treated, totalling 5,330 yards, for a return of 48.324 tons of black tin.

The total expenditure amounted to £1,180 7s., equal to 4s. 5.14d. per yard of ore treated, whilst the revenue amounted to £970 7s. 2d., or 3s. 7.69d. per yard, the loss being £209 19s. 10d.

The tonnage handled showed a falling off of 731 tons as compared with the tonnage for 1911, whilst the expenditure showed an increase of 4.79 pence per yard. The revenue showed an increase of 2.78 pence per yard. (Schedules 1 and 8.)

Sand Treatment.

The tonnage of sand treated during the year was very small. Many of the more recent batteries had not been equipped with sand treatment plants. Only 18 leaching plants were available for treatment purposes and at only seven of them were more than 1,000 tons handled per plant. For that reason the treatment only returned a profit of £397 3s., instead of several thousand pounds as recorded in previous years.

The supply of ore to the plants at the various centres fluctuates considerably from year to year, and it so happened during 1912 that a large proportion of the ore offered for treatment was supplied to mills not equipped with leaching plants. When this circumstance was noticed arrangements were at once made for the erection of several sand treatment plants, five of which either commenced operations at the close of the year or very soon afterwards.

Other leaching plants will also be erected. These plants will work off both the sand and slime accumulations and thenceforward treat current tailings.

Only 18,599½ tons of sand were treated, a falling off of 8,845 tons or 32.2 per cent. as compared with the figures for 1911.

The expenditure was £7,713 7s. 9d., or 8s. 3.52d. per ton.

The revenue was £8,110 10s. 9d., or 8s. 8.65d. per ton, the profit being £397 3s.

The actual working costs amounted to 5s. 11.9d. per ton as compared with 5s. 1.9d. during 1911.

Renewals and repairs accounted for £802 8s. 9d. of the expenditure. (Schedules 3 and 9.)

Slime Treatment.

During 1911 the accumulated slime at batteries where slime plants had been erected was worked off, consequently the tonnage available for treatment during 1912 at those centres was small, only 8,085 tons being treated as compared with 23,183 tons during 1911.

The expenditure was £4,739 9s. 5d., or 11s. 8.68d. per ton, and the revenue £4,220 1s. 3d., or 10s. 5.25d. per ton, the loss being £519 8s. 2d.

Included in the expenditure was the sum of £169 4s. 4d. for renewals and repairs.

It has been found that the tonnage of slime at the batteries is too small to ensure satisfactory working costs with small plants of the vacuum or filter press types.

Arrangements have been made for the installation of leaching plants which will be capable of handling both sands and slime at a satisfactory cost of treatment.

Additions and Equipment.

The sum of £837 15s. was spent under this heading from revenue, and is included in the Working Profit and Loss Account for the year.

Following are the amounts set against the several batteries:

	£	s.	d.
Black Range	103	14	11
Burtville	92	6	5
Laverton	14	6	8
Linden	104	16	8
Meekatharra	38	6	8
Mt. Egerton	17	17	1
Mt. Ida (Pipe line)	299	14	1
Mt. Sir Samuel	29	6	9
Mulline	48	10	7
Sandy Creek	5	14	0
Wiluna	3	0	11
Yerilla	46	15	0
Youanmi	33	5	7
	£837	15	0

New Plants.

New 5-head batteries of a high standard, equipped with power plants consisting of gas engines and producers, and all necessary equipment to make them up-to-date from both the customers' and the Department's point of view, were installed at Mt. Egerton and Payne's Find—both being new centres.

At Mt. Ida and Meekatharra similar mills were erected to replace old plants considered to be of no further service.

Plans were prepared and contracts let for the machinery, etc., for similar 5-head mills to be erected at Bamboo Creek, Mt. Keith, Ora Banda, and Norseman, complete with all necessary buildings, including mill houses, engine and producer rooms, smithies, offices, and quarters.

All preliminaries in connection with the supply and delivery of the necessary material for the plants at Bamboo Creek and Mt. Keith were concluded, most of the material being delivered at the respective sites.

Arrangements were also completed for the installation of leaching plants at Linden, Mt. Sir Samuel, Yerilla, Leonora, and Payne's Find, and the work of erection of the first four named was well in hand at the close of the year.

At Mt. Jackson an old battery was leased with the object of putting it into commission to enable the prospectors to test the value of their ore in bulk. The returns have been highly satisfactory and some payable mines have been established.

At Marble Bar a tailings pump and concentrating table were installed for the more efficient handling of the tailings and the recovery of concentrates from the ore.

The old plant at Ravelstone was being remodelled. A new suction gas engine and "Cambridge" producer, a deep well pump and petrol engine and a new battery box were purchased and were in transit to the site at the close of the year. The reconstruction of the mill will be carried out early in the ensuing year.

Schedule 6 details the amounts spent on new work from the Consolidated Revenue Vote and Loan Expenditure Fund, which totalled £19,107 14s.

Improvements to Existing Plants.

During the year it was decided to carry out extensive improvements to various plants, involving an expenditure of £11,106. The most urgent cases only were taken in hand, the various works being enumerated in the following list:—

	Expenditure from	
	Loan	Revenue.
	£	£
Coolgardie—Overhaul and repairs to engine and power plant	..	225
Coolgardie—New battery boxes ..	..	200
Leonora—Renewal of leaching plant..	..	266
Laverton—Shed to cover engine and boilers	..	100
Laverton—Renewal of leaching plant	..	380
Linden—Leaching plant	1,000	
Menzies—Renewal of agitating vats...	..	95
Mt. Sir Samuel—Leaching plant ..	700	
Marble Bar—Concentrating table, Tailings pump	380	
Mulliue—75 mud frames 1¼in. for filter press	..	300
Mulline—General overhaul of filter press plant	..	100
Quinns—Tailings pump and oil engine	170	
Norseman—New 5-head mill and leaching plant	3,500	
Siberia—Overhauling plant	..	100
Payne's Find—Leaching plant ..	1,040	
Mulwarrie—Bins	...	50
Yerilla—Overhaul of mill	500	
Yerilla—Leaching plant	..	500
Ravelstone—Reconstruction of battery	1,000	500
	£8,290	2,816

Expenditure from Loan ..	£8,290
Expenditure from Revenue ..	2,816
	£11,106

The work as above enumerated was completed at Coolgardie, Leonora, Marble Bar, Mt. Sir Samuel, Siberia, and Yerilla before the close of the year, whilst that proposed for Linden, Mulline, Payne's Find, and Ravelstone was well advanced.

The work proposed for Laverton, Menzies, Quinns, and Norseman was not commenced.

In order to keep pace with requirements, a general overhaul and renovation of the older plants should be undertaken each year.

Lighting of Plants.

The batteries were in the past lit with kerosene lamps, mostly of a poor design.

During the three years prior to 1912 six batteries were provided with acetylene plants for lighting purposes.

During 1912 eight other batteries were provided with acetylene plants, and three more were purchased and were awaiting installation.

Next year it is proposed to improve the lighting of several more batteries.

Tailings Purchase.

26,594¾ tons of tailings, having an average value of over 3dwts. per ton, were purchased for £18,471 14s. 4d. nett to customers, as per Treasury Returns.

22,728 tons of tailings assaying over 3dwts. per ton and containing 9,076.8ozs. fine were actually produced during the year, the nett price payable to owners being £16,850 7s. 3d.

4,316.91 tons of tailings having an assay value over 3dwts. per ton and containing 1,616.95ozs. fine were accumulated and not purchased at batteries where no cyanide plants had been installed. After the erection of leaching plants the tailings will be purchased on assay value.

15,612¼ tons of tailings having an assay value of under 3dwts. per ton and containing 1,427.5ozs. fine reverted to the Department under Regulation No. 11.

The percentage of tailings recovered from the ore crushed amounted to 81.7 per cent.

The tailings tonnage recovered is the nett dry weight available for treatment, whilst the ore tonnage is the gross weight of the ore.

Recovery obtained from the Ore supplied for Treatment.

Omitting the ore treated at leased batteries and at Mt. Ida and Ravelstone, where no tailings purchase was undertaken, the other 28 plants treated 52,189 tons of ore having a gross value of £228,303, of which £175,951 was recovered by amalgamation, equal to a gross recovery of 77.3 per cent.

The tailings contained values to the extent of £52,352. 26,594¾ tons of tailings were purchased for £18,471 14s. 4d. nett to the owners, a nett recovery to the owners of 8.1 per cent. of the gross value of the ore. The gross recovery was equal to 14.1 per cent. of the total value of the ore.

4,316.91 tons of tailings worth over 3dwts. per ton have been accumulated and will be purchased when cyanide plants have been erected.

From actual operations completed, however, the customers received a gross recovery of 91.4 per cent. from their ore.

The nett return received by customers was 74¼ per cent., made up as follows:—

Total value of ore—£227,434.

Gross recovery by amalgamation	£175,951	
Less milling charges	25,572	
		£150,379
Amount paid for tailings (nett to customers)		18,471
Nett to customers		£168,850

(Schedule 5.)

The following Synopses show the results obtained during the Year:—

Operations.	1912. Tons.	1912. Expenditure per ton.	1912. Revenue per ton.	1911. Tons.	1911. Expenditure per ton.	1911. Revenue per ton.
		s. d.	s. d.		s. d.	s. d.
Milling	56,636½	12 9·26	9 8·76	59,373	12 6·94	9 10·37
Sand Treatment	18,599½	8 3·52	8 8·65	27,362½	6 5·92	8 9·75
Slime Treatment	8,085	11 8·68	10 5·25	28,183	10 10·57	9 5·32
Tin Treatment	5,330	4 5·14	3 7·69	6,061	4 0·35	3 4·91

REVENUE AND EXPENDITURE, 1912.

Operations.	Tonnage.	Revenue.	Expenditure.	Profit.	Loss.
		£ s. d.	£ s. d.	£ s. d.	£ s. d.
Milling	56,636½	27,555 13 10	36,171 14 8	..	8,616 0 10
Sand Treatment	18,599½	8,110 10 9	7,713 7 9	397 3 0	
Slime Treatment	8,085	4,220 1 3	4,739 9 5	..	519 8 2
Tin Treatment	5,330	970 7 2	1,180 7 0	..	209 19 10
	88,651	£40,856 13 0	£49,804 18 10	£397 3 0	£9,345 8 10

Less Profit	397 3 0
Loss	8,948 5 10
Additions and Equipment ..	837 15 0
Total Loss	£9,786 0 10

THE STAFF.

During the latter part of the year the plants were re-grouped, some managers being allotted the control of two or three plants. As a result of this arrangement seventeen managers, including a relieving officer, controlled 34 plants under departmental control. A transfer of managers was effected, the personnel of the staff being slightly altered with improved results.

With a decline in the volume of treatment operations as much economy was exercised with regard to the numerical strength of the staff as was consistent with efficiency.

The standard of management has undoubtedly been improved, and is at present satisfactory.

Two engineers were in charge of the construction work, which was carried out in a thoroughly satisfactory manner.

The staff at Head Office and the outstations was severely taxed during the second half of the year on account of the large programme of construction and overhaul work in addition to the ordinary operations, and much credit is due to officers for the efficient manner in which they carried out their duties.

SCHEDULES.

The attached schedules set forth in detail the results obtained at the plants for the year or from the inception of the system to the close of the year.

OUTPUT SINCE INCEPTION.

Since the year 1898, when the State battery system was inaugurated, 900,416.44 tons of auriferous ore have been treated for a return by amalgamation of 919,049.69ozs. of bullion valued at £3,340,774.

496,109¼ tons of sand have been treated for a return of £447,072 gross.

101,067¾ tons of slime have been treated for a return of £95,186 gross.

55,265 tons of slime have been sold for £17,400.

56,883½ tons of tin ore have been treated for a return of 771.626 tons of black tin valued at £73,304.47.

The total output from all sources has therefore been worth £3,973,736.

A. M. HOWE,
Superintendent of State Batteries.

SCHEDULE 1.

Return showing the number of tons crushed, gold yield, average per t n in shillings, and total value for year ending 31st December, 1912.

Battery.	Tons crushed.	Gold Yield. Bullion.	Average per ton in shillings.	Total Value
		ozs.		£
Black Range	3,010·00	3,134·60	74·98	11,284·56
Boogardie	2,139·50	2,538·25	85·40	9,137·70
Burtville	1,204·00	1,930·40	115·40	6,949·44
Coolgardie	3,662·00	3,026·68	59·40	10,896·04
Darlot	1,967·50	1,243·25	45·40	4,475·70
Desdemona	80·00	28·36	25·52	102·09
Laverton	561·00	1,027·57	132·00	3,699·25
Leonora	3,253·50	3,673·60	81·29	13,224·96
Linden	2,385·00	1,807·61	55·10	6,507·39
Meekatharra	988·00	664·07	48·40	2,390·65
Menzies	1,367·50	963·50	48·60	3,327·30
Marble Bar	1,199·50	1,745·20	104·74	6,282·72
Mt. Egerton	1,072·50	685·85	46·00	2,469·06
Mt. Ida	1,509·00	1,664·15	66·14	5,990·94
Mt. Jackson	1,608·50	3,091·35	138·20	11,128·86
Mt. Sir Samuel	1,054·00	762·10	52·06	2,743·56
Mulline	2,981·00	5,459·55	39·92	19,654·38
Mulwarrie	1,318·00	1,653·10	90·30	5,951·16
Nannine	360·00	242·35	46·47	836·46
Niagara	2,327·00	2,237·55	69·20	8,055·18
Norseman	1,031·00	968·90	66·08	3,488·04
Payne's Find	2,049·00	2,374·10	83·40	8,546·76
Pig Well	..	..	..	..
Pingin	1,179·00	625·89	38·20	2,253·20
Quinn's	2,618·50	1,611·70	52·00	5,802·12
Sandy Creek	965·00	1,190·60	68·10	4,286·16
Siberia	1,322·50	2,182·06	111·70	7,855·40
Wiluna	4,980·50	2,316·65	33·49	8,339·94
Yarri	2,542·50	1,294·00	36·65	4,658·40
Yerilla	1,338·50	1,893·50	101·84	6,816·60
Youanme	3,917·00	1,051·25	19·32	3,784·50
Lennonville	116·00	79·75	49·50	287·10
Tuckanarra	12·00	19·25	115·50	69·30
Widgiemooltha	..	..	..	..
Randalls	..	..	..	..
Ravelstone	517·50	691·30	96·18	2,488·68
	56,636·50	53,868·04	68·40	193,783·60

TIN PLANTS.

	Tons.	Yield Tons Black Tin.
Greenbushes, Bunbury End ..	4,441·00	41·220
Greenbushes, S.W. Gully ..	889·00	7·230

SCHEDULE 2.

Return showing the number of Tons Crushed, Gold Yield, Average per Ton, and Value since inception to 31st December, 1912.

Battery.	Tons Treated.	Gold Yield. Bullion.	Average Gold per ton.	Value.
		ozs.	ozs.	£
Black Range	51,332·15	55,402·55	1·08	199,645·06
Boogardie	44,619·15	23,981·27	·53	87,726·76
Burtville	27,331·50	59,896·11	2·19	216,931·81
Coolgardie	49,546·00	43,072·92	·87	155,119·59
Darlot	31,574·25	36,578·99	1·10	135,113·15
Desdemona	1,149·50	852·93	·74	3,070·54
Laverton	11,680·25	12,474·86	1·06	46,081·22
Leonora	48,107·20	48,670·09	1·01	178,792·65
Linden	9,928·75	10,861·24	1·09	39,100·45
Meekatharra	55,902·50	70,024·00	1·25	254,765·79
Menzies	53,687·50	43,699·72	·81	157,166·39
Marble Bar	4,153·50	4,759·35	1·14	17,133·61
Mt. Egerton	1,072·50	685·85	·64	2,469·06
Mt. Ida	34,422·90	48,380·61	1·46	177,472·39
Mt. Jackson	1,608·50	3,091·35	1·92	11,128·86
Mt. Sir Samuel	6,207·50	4,657·25	·75	16,766·10
Mulline	71,075·70	92,066·95	1·29	330,621·16
Mulwarrie	27,952·90	32,349·01	1·15	119,713·13
Nannine	10,116·35	5,971·84	·59	21,498·59
Niagara	55,248·00	48,187·02	·87	175,661·47
Norseman	50,349·70	52,861·27	1·05	193,483·04
Payne's Find	2,049·00	2,374·10	1·15	8,546·76
Pig Well	16,666·50	16,712·73	1·00	60,165·81
Pingin	16,021·65	12,354·11	·70	44,474·37
Quinn's	5,302·00	3,089·40	·58	11,121·84
Sandy Creek	8,615·65	15,920·62	1·84	57,414·20
Siberia	12,455·50	13,532·49	1·08	48,642·29
Wiluna	38,314·25	25,927·30	·67	93,483·46
Yarri	36,553·50	25,134·34	·69	90,483·45
Yerilla	9,542·50	9,197·10	·96	30,307·48
Youanme	14,886·50	6,397·29	·43	23,030·24
Lennonville	30,241·39	34,330·64	1·13	128,647·04
Tuckanarra	15,456·85	20,897·56	1·35	76,854·93
Widgiemooltha	5,711·00	2,413·43	·42	8,949·40
Randalls	4,333·45	1,617·96	·37	5,798·20
Ravelstone	10,942·55	10,236·57	·93	38,022·89
Batteries Closed	26,257·85	20,388·87	·71	75,370·83
	900,416·44	919,049·69	1·02	3,340,774·01

——	Tons.	Yield Ton Black Tin.
Greenbushes, Bunbury End	40,382·50	596·276
Greenbushes, North End	15,026·00	163·827
Greenbushes, S.W. Gully	1,475·00	11·523
	56,883·5	771·626

MILLING.

	Tons.	ozs.
Up to 1901 (3 years)	68,791	75·533
1902	39,517	57,255
1903	49,233	58,305
1904	71,616	78,309
1905	85,018	92,327
1906	95,831	94,187
1907	95,280	97,962
1908	95,624	89,875
1909	94,218	83,127
1910	89,278	80,074
1911	59,373	56,265
1912	56,636	53,828

CYANIDING SANDS.

	Tons.
Up to 1902	29,255
1903	32,369
1904	42,559
1905	54,420
1906	60,422
1907	63,778
1908	62,081
1909	61,265
1910	43,915
1911	27,444
1912	18,599

SLIMES TREATMENT.

Up to 1904	691
1905	7,092
1906	[illegible]
1907	8,220
1908	5,818
1909	16,848
1910	28,819
1911	20,821
1912	8,085

SCHEDULE 3.

Sands Treatment 1912.

Battery.	Tons.	Yield.	Value.
		Fine ozs.	£
Black Range	1,750	435·71	1,850·97
Burtville	512	91·60	389·12
Coolgardie	1,521	231·96	985·61
Laverton	169	39·82	169·16
Leonora	225	52·69	223·85
Meekatharra	360	45·08	191·49
Menzies	765	282·66	1,200·89
Mulline	1,592	400·00	1,699·39
Mulwarrie	873½	198·31	842·52
Niagara	1,731	283·29	1,203·35
Norseman	298	65·43	277·95
Pinjin	812	31·64	134·43
Sandy Creek	699	169·46	720·05
Siberia	690	123·72	525·59
Wiluna	2,850	1,234·94	5,146·62
Yarri	1,966	155·96	662·58
Yerilla	304	70·90	301·17
Youanme	1,482	299·80	1,273·68
	18,599½	4,212·97	17,798·42

Slimes 1912.

Battery.	Tons.	Yield.	Value.
		Fine ozs.	£
Laverton	131	25·07	106·52
Black Range	2,423	454·33	1,930·09
Burtville	167	51·06	216·94
Menzies	1,085	289·17	1,228·45
Niagara	2,960	426·92	1,813·75
Siberia	85	38·08	161·73
Wiluna	318	90·92	386·25
Yarri	916	86·77	368·69
	8,085	1,462·2	6,212·42

SCHEDULE 4.

1912.—*Cyanide Totals from Inception.*

Battery.	Tons.	Yield.	Value.
		ozs.	£
Black Range ..	30,173	8,317·89	35,047·12
Burtville	15,558¾	5,142·94	21,429·25
Coolgardie	25,070	4,288·86	17,932·41
Laverton	9,350	1,091·14	4,439·24
Meekatharra ..	33,275	6,860·64	28,524·29
Darlot	23,654	2,699·17	11,042·16
Lennonville ..	24,309	6,592·43	26,653·23
Leonora	27,763½	6,965·47	28,816·36
Linden	4,248	1,345·73	5,717·07
Menzies	30,027½	7,798·51	32681·60
Mulline	40,767	11,423·68	46,305·21
Mt. Ida	3,570	357·97	1,423·64
Nannine	3,650	410·12	1,742·50
Mulwarrie	22,236½	4,254·06	17,430·70
Niagara	34,786	5,676·74	23,534·23
Norseman	36,206½	7,419·67	30,759·63
Pig Well	11,379	2,373·25	9,962·50
Pinjin	11,682	1,242·15	5,252·08
Sandy Creek ..	7,456½	2,397·77	10,052·67
Siberia	5,550	1,201·56	5,105·20
Wiluna	12,133	4,877·24	20,619·30
Yarri	29,638	2,624·06	10,883·20
Yerilla	6,541	769·59	3,269·09
Youanme	6,069	2,066·14	8,776·77
Boogardie	29,432	7,702·28	32,186·47
Duketon	2,083½	250·51	1,025·77
Devon	261½	120·44	511·64
S. Cross	3,471	452·75	1,815·18
Yundamindera ..	4,977	920·33	3,909·25
Randalls	791	56·05	224·80
	496,109¼	107,699·14	447,072·56

1912.—*Slimes Totals from Inception.*

Battery.	Tons.	Yield.	Value.
		ozs.	£
Mulline	16,019¾	5,454·63	18,701·48
Laverton	273	45·24	129·19
Pig Well	340	64·65	274·57
Sandy Creek ..	255½	60·77	258·23
Meekatharra ..	1,980	462·78	1,966·08
Boogardie	1,218	284·63	1,209·07
Leonora	12,440	2,198·09	9,338·73
Norseman	11,671	2,843·10	12,076·78
Black Range ..	13,040	2,604·59	11,064·71
Burtville	1,643	519·00	2,204·71
Darlot	570	52·61	223·55
Linden	419	87·30	370·90
Menzies	21,905½	5,454·53	23,171·45
Niagara	13,379	2,134·93	9,069·98
Siberia	347	104·47	443·73
Wiluna	2,245	787·72	3,346·31
Yarri	2,898	255·31	1,084·63
Yerilla	424	44·55	189·33
	101,067¾	23,458·90	95,186·43

SCHEDULE 5.

BATTERIES.

Return showing Number of Parcels treated and Tons crushed at State Batteries for Year 1912.

No. of Parcels Crushed.	Battery.	Tons.	Yield by Amalgamation. Bullion.	Yield by Amalgamation. Fine Gold.	Gross Contents of Tailings. Fine Gold.	Total Contents of Ore. Fine Gold.	Average per Ton. Fine Gold.	Gross Value of Ore per Ton.
			ozs. dwts.	ozs. dwts.	ozs. dwts.	ozs. dwts.	dwts. grs.	s. d.
43	Black Range ..	3,010	3,134 ·60	2,656 ·44	772 ·13	3,428 ·57	22 19	96 0
27	Burtville	1,204	1,930 ·40	1,635 ·93	226 ·63	1,862 ·56	30 22	130 10
123	Coolgardie	3,662	3,026 ·67	2,564 ·98	606 ·22	3,171 ·20	17 7	72 11
18	Darlot	1,967·50	1,243 ·25	1,053 ·60	202 ·16	1,255 ·76	12 18	54 2
3	Desdemona	80	28 ·36	24 ·16	2 ·95	27 ·11	6 18	28 0
18	Laverton	561	1,027 ·57	870 ·82	217 ·08	1,087 ·90	38 19	164 0
78	Leonora	3,253·50	3,673 ·60	3,113 ·21	951 ·84	4,065 ·05	25 3	106 2
55	Linden	2,385	1,807 ·62	1,531 ·88	687 ·25	2,219 ·13	18 14	78 0
12	Meekatharra	988	664 ·07	562 ·77	214 ·78	777 ·55	15 17	66 3
37	Menzies	1,367·50	963 ·50	816 ·52	426 ·57	1,243 ·09	18 4	77 0
30	Marble Bar	1,184	1,745 ·20	1,478 ·98	203 ·32	1,682 ·30	28 10	127 0
11	Mt. Egerton	912·50	685 ·15	581 ·90	379 ·64	961 ·54	20 0	85 0
35	Mt. Jackson	1,608·50	3,091 ·35	2,619 ·78	399 ·36	3,019 ·14	37 13	158 10
19	Mt. Sir Samuel ..	1,054	762 ·10	645 ·84	159 ·73	805 ·57	15 7	64 6
45	Mulline	2,981	5,459 ·55	4,626 ·71	674 ·75	5,301 ·46	35 13	150 4
39	Mulwarrie	1,340	1,653 ·10	1,400 ·93	304 ·65	1,705 ·58	25 10	107 8
10	Nannine	360	232 ·35	196 ·90	84 ·36	281 ·26	15 15	66 0
14	Pinjin	1,179	625 ·90	530 ·42	65 ·52	595 ·94	10 2	42 5
15	Yerilla	1,338·50	1,893 ·50	1,604 ·70	410 ·01	2,014 ·71	30 2	127 5
59	Niagara	2,327	2,237 ·55	1,896 ·22	437 ·26	2,333 ·48	20 0	85 0
24	Norseman	1,031	968 ·90	821 ·10	207 ·13	1,028 ·23	19 19	83 3
36	Quinn's	2,618·50	1,611 ·70	1,365 ·84	310 ·33	1,676 ·17	12 19	53 5
20	Yarri	2,542·50	1,294 ·00	1,096 ·61	260 ·03	1,356 ·64	10 17	45 0
27	Payne's Find ..	2,049	2,374 ·10	2,011 ·94	368 ·64	2,380 ·58	23 6	98 4
26	Sandy Creek	965	1,190 ·60	1,008 ·91	245 ·44	1,254 ·42	26 0	110 3
30	Siberia..	1,322·50	2,182 ·07	1,849 ·21	300 ·93	2,150 ·14	32 12	137 4
57	Wiluna	4,980·50	2,316 ·65	1,963 ·26	2,339 ·02	4,302 ·28	17 6	73 8
25	Youanme	3,917	1,051 ·25	890 ·88	663 ·52	1,554 ·40	7 22	33 0
936		52,189·00	48,875 ·36	41,420 ·51	12,121 ·25	53,540 ·21	20 12	86 8
44	Boogardie	2,139·50	2,538 ·25	2,151 ·05	..	2,151 ·05	20 2	85 0
30	Mt. Ida	1,509·00	1,664 ·15	1,410 ·29	..	1,410 ·29	18 16	73 7
1	Tuckanarra	12·00	19 ·25	16 ·31	..	16 ·31	27 4	114 6
11	Ravelstone	517·50	691 ·30	585 ·84	..	585 ·84	22 15	95 9
4	Lennonville	116·00	79 ·75	67 ·86	..	67 ·86	11 17	49 2
90		4,294·00	4,992 ·70	4,231 ·35	..	4,231· 35	19 17	83 8
1,026	Total Tonnage treated	56,483						
	Tonnage under treatment	153·5						
		56,636·5						

TIN PLANTS.

No. of Parcels.	Battery.	Yards of Tin ground treated.	Yield.	Average per yard.
			Tons.	lb.
104	Greenbushes, Bunbury End ..	4,441	41·062	20·69
32	Greenbushes, S.W.G.	889	7·262	17·92
136		5,330	48·324	20·3

Schedule 6.

Expenditure from Consolidated Revenue Vote and Loan Expenditure Funds on Erection of State Batteries for Year ending 31st December, 1912, and Totals since Inception.

Battery.	From Revenue.	From Loan.	Totals.
	£ s. d.	£ s. d.	£ s. d.
Kalpini Battery, and removal of Boiler to Kanowna ..	..	0 19 11	0 19 11
Mt. Egerton Battery Erection	..	3,828 2 8	3,828 2 8
Payne's Find Battery, Erection	..	3,155 9 1	3,155 9 1
Meekatharra Battery, Erection	..	2,855 5 1	2,855 5 1
Marble Bar, Installation of Wilfley Table	..	282 16 8	282 16 8
Mt. Jackson Battery, Erection	..	1,177 7 10	1,177 7 10
Mt. Ida Battery, Erection	..	2,029 12 2	2,029 12 2
Wiluna Gas Producer	..	2,344 5 1	2,344 5 1
Mt. Jackson Lease	..	150 0 0	150 0 0
Mt. Keith Battery, Erection	..	990 2 7	990 2 7
Bamboo Creek Battery, Erection	..	822 1 5	822 1 5
Yerilla Battery, General overhaul	..	288 17 3	288 17 3
Mt. Sir Samuel Cyanide Plant	..	562 19 11	562 19 11
Ora Banda Battery, Erection	..	250 16 0	250 16 0
Linden Cyanide Plant	..	129 13 5	129 13 5
Ravelstone Battery Gas Producer	..	239 4 11	239 4 11
	..	19,107 14 0	19,107 14 0
Erection of State Batteries.			
Expenditure to 31st December, 1907	91,981 1 8	..	..
Loan Expenditure to 31st December, 1911	..	198,751 12 0	290,732 13 8
Grand Totals	91,981 1 8	217,859 6 0	309,840 7 8

Schedule 7.

1912.—*Tons of Tailings purchased and Amounts paid Prospectors.*

Battery.	Tons purchased.	Amount paid.
		£ s. d.
Black Range	1,991	1,349 3 8
Burtville	909·50	387 19 6
Coolgardie	1,260	852 17 9
Laverton	300·50	281 18 2
Leonora	2,575·50	1,502 3 11
Meekatharra	40	9 8 0
Menzies	1,251·50	1,020 0 4
Mulline	2,707	1,253 12 3
Mulwarrie	1,173	719 14 10
Nannine	214·50	165 13 4
Niagara	1,030·25	744 17 3
Norseman	1,273	617 4 8
Pinjin	82·50	16 18 6
Sandy Creek	782	491 17 10
Siberia	971·50	450 10 1
Yarri	1,130·50	566 14 3
Yerilla	967	533 16 1
Wiluna	3,184·50	4,336 10 2
Linden	1,838	2,269 7 4
Youanme	2,913	901 6 5
	26,594·75	18,471 14 4

1912.—*Slimes accumulated paid for.*

Battery.	Tons purchased.	Amount paid for
		£ s. d.
Black Range	2,904	3,061 2 1
Boogardie	1,727·50	913 14 4
Burtville	1,137·75	1,366 0 5
Coolgardie	160·25	115 2 8
Leonora	7·50	9 18 6
Meekatharra	1,393	873 6 4
Menzies	36·75	32 8 6
Niagara	751·25	192 8 8
	8,118·00	6,564 1 6

SCHEDULE 8.

ANNUAL REPORT, 1912.

Statement of Receipts and Expenditure for Year ending 31st December, 1912 (excluding Additions and Equipment).

Plant.	Tonnage.	MILLING AND TIN. Management.	Wages.	Stores.	Total Working Expenditure.	Cost per ton.	Repairs and Renewals.	Sundries.	Gross Expenditure.	Cost per ton.	Receipts.	Per ton.	Profit.	Loss.
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	s. d.	£ s. d.	£ s. d.	£ s. d.	s. d.	£ s. d.	s. d.	£ s. d.	£ s. d.
Black Range	3,010	135 0 0	536 10 1	347 16 1	1,019 6 2	6 9·27	169 8 2	162 17 1	1,351 11 5	8 11·76	1,430 0 6	9 6·02	78 9 1	
Boogardie	2,139½	..	..	379 1 9	379 1 9	..	5 18 0	27 10 8	412 10 5	..	561 13 3	..	149 2 10	
Burtville	1,204	93 6 8	292 12 4	229 16 10	615 15 10	10 2·74	165 3 5	126 7 5	907 6 8	15 0·81	673 16 6	11 2·31	..	233 10 2
Coolgardie	3,662	163 0 0	775 14 9	433 1 3	1,371 16 0	7 5·90	455 17 5	235 9 8	2,063 3 1	11 3·21	1,493 12 0	8 1·88	..	569 11 1
Darlot	1,967½	325 0 0	385 2 1	429 15 8	1,139 17 9	11 7·04	142 9 8	165 5 2	1,447 12 7	14 8·58	1,034 13 9	10 6·17	..	412 18 10
Desdemona	80	157 3 3	10 4 0	31 7 10	198 15 1	49 8·25	1 15 0	11 6 11	211 17 0	52 11·54	50 0 0	12 6·00	..	160 17 0
Laverton	561	76 0 0	225 3 0	137 11 7	438 14 7	15 7·68	141 1 10	62 19 3	642 15 8	22 11·00	313 12 0	11 2·16	..	329 3 8
Lennonville	116	..	..	..	..	..	..	..	..	..	15 18 0	..	15 18 0	
Leonora	3,253½	211 13 7	654 7 2	431 5 1	1,297 5 10	7 11·69	138 9 9	223 6 10	1,659 2 5	10 2·40	1,420 15 3	8 8·80	..	238 7 2
Linden	2,385	247 14 8	479 11 7	332 19 8	1,060 5 11	8 10·70	129 0 5	163 8 11	1,352 15 3	11 4·12	1,166 12 5	9 9·39	..	186 2 10
Marble Bar	1,199½	207 17 8	321 3 1	158 9 11	687 10 8	11 5·54	40 14 6	62 7 7	790 12 9	13 2·18	707 3 7	11 9·48	..	83 9 2
Meekatharra	988	75 0 0	314 18 8	101 9 11	491 8 7	9 11·35	23 1 7	61 10 9	576 0 11	11 7·92	473 6 4	9 6·97	..	102 14 7
Menzies	1,367½	70 17 9	276 4 5	238 9 4	585 11 6	8 6·76	147 3 9	98 14 6	831 9 9	12 1·92	605 11 8	8 10·27	..	225 18 1
Mt. Egerton	1,072½	180 0 0	273 7 5	179 11 3	632 18 8	11 9·62	78 3 5	77 9 7	788 11 8	14 8·46	538 15 6	10 0·55	..	249 16 2
Mt. Ida	1,509	312 0 0	473 0 2	252 13 7	1,037 13 9	13 9·02	44 14 5	73 1 3	1,155 9 5	15 3·76	1,150 18 7	15 3·02	..	4 10 10
Mt. Jackson	1,608½	203 18 6	697 13 0	358 1 3	1,259 12 9	15 7·94	84 7 1	170 7 1	1,514 6 11	18 9·95	862 16 1	10 8·73	..	651 10 10
Mt. Sir Samuel	1,054	226 15 0	358 19 0	222 18 10	808 12 10	15 4·12	139 13 7	67 1 1	1,015 7 6	19 3·19	566 12 8	10 9·02	..	448 14 10
Mulline	2,981	204 18 7	863 12 3	543 7 11	1,611 18 9	10 9·76	479 13 7	189 8 11	2,281 1 3	15 3·64	1,667 1 5	11 2·20	..	613 19 10
Mulwarrie	1,318	93 0 6	495 4 5	236 6 6	824 11 5	12 6·14	338 18 0	164 15 11	1,328 5 4	20 1·84	706 7 11	10 8·61	..	621 17 5
Nannine	360	109 8 0	194 18 2	110 14 6	415 0 8	23 0·72	64 14 1	38 12 11	518 7 8	28 9·60	201 4 11	11 2·16	..	317 2 9
Niagara	2,327	66 17 4	606 16 11	469 18 4	1,143 12 7	9 9·93	142 18 11	143 14 5	1,430 5 11	12 3·51	1,156 4 9	9 11·23	..	274 1 2
Norseman	1,031	125 10 0	422 0 1	288 7 5	835 17 6	16 2·56	105 14 3	97 15 4	1,039 7 1	20 1·94	522 9 6	10 1·62	..	516 17 7
Payne's Find	2,049	185 15 4	705 10 5	277 6 0	1,168 11 9	11 4·87	72 11 0	174 5 10	1,415 8 7	13 9·79	1,073 11 1	10 5·73	..	341 17 6
Pig Well	..	..	104 10 8	9 18 5	114 9 1	..	..	5 14 11	120 4 0	..	..	..	..	120 4 0
Pinjin	1,179	77 6 8	388 1 3	201 7 6	666 15 5	11 3·72	117 19 4	102 15 8	887 10 5	15 0·67	604 16 3	10 3·09	..	282 14 2
Quinn's	2,618½	161 12 0	939 5 2	318 4 6	1,419 1 8	10 10·08	45 9 8	172 3 11	1,636 15 3	12 6·01	1,387 5 8	10 7·15	..	249 9 7
20-Mile Sandy	965	114 6 4	244 3 2	322 4 0	680 13 6	14 1·27	33 12 10	92 13 3	806 19 7	16 8·68	676 12 8	14 0·28	..	130 6 11
Siberia	1,322½	145 8 0	474 1 6	263 3 2	882 12 8	13 4·17	167 8 5	89 0 5	1,139 1 6	17 2·71	618 9 8	9 4·22	..	520 11 10
Wiluna	4,980½	205 19 0	1,304 1 11	663 10 0	2,173 10 11	8 8·73	*	233 6 1	2,269 1 0	9 1·33	2,443 5 1	9 9·72	174 4 1	
Yarri	2,542½	126 6 8	444 14 10	421 3 6	992 5 0	7 9·64	356 14 6	163 15 7	1,512 15 1	11 10·80	1,259 1 7	9 10·84	..	253 13 6
Yerilla	1,338½	68 12 3	597 2 2	281 14 9	947 9 2	14 1·88	84 19 2	123 6 11	1,155 15 3	17 3·21	708 6 7	10 7·00	..	447 8 8
Youanme	3,917	158 19 7	623 0 4	249 10 4	1,031 10 3	5 3·19	120 12 8	222 12 1	1,374 15 0	7 0·24	1,209 13 8	6 1·93	..	165 1 4
Ravelstone	517½	81 5 9	118 19 9	4 5 10	204 11 4	7 11·32	5 16 8	217 0 3	427 8 3	16 6·21	254 10 0	9 11·20	..	172 18 3
Tuckanarra	12	..	..	..	..	..	..	..	..	..	0 15 0	..	0 15 0	
Widgiemooltha	..	..	103 1 1	..	103 1 1	..	..	4 19 0	108 0 1	..	..	..	..	108 0 1
	56,636½	4,610 13 1	14,703 14 10	8,925 12 6	28,240 0 5	..	4,044 5 1	4,025 5 2	36,171 14 8	12 9·26	27,555 13 10	9 8·76	418 9 0	9,034 9 10
					*Less Credit	..	137 16 0							
							3,906 9 1							
TIN PLANTS.														
Greenbushes, Bunbury End	4,441	180 0 0	284 19 9	237 13 0	702 12 9	3 1·96	60 9 0	101 9 5	864 11 2	3 10·72	765 1 8	3 5·34	..	99 9 6
Greenbushes, S.W. Gully ..	889	180 0 0	81 9 0	31 8 4	292 17 4	6 7·05	9 1 3	13 17 3	315 15 10	7 1·24	205 5 6	4 7·41	..	110 10 4
	61,966½	4,970 13 1	15,070 3 7	9,194 13 10	29,235 10 6	..	3,975 19 4	4,140 11 10	37,352 1 8	..	28,526 1 0	..	418 9 0	9,244 9 8

SCHEDULE 9.

ANNUAL REPORT, 1912.

Statement of Receipts and Expenditure for Year ending 31st December, 1912 (excluding Additions and Equipment).

CYANIDE AND SLIMES.

Plant.	Tonnage.	Management.	Wages.	Assays.	Stores.	Total Working Expenture.	Cost per ton.	Repairs.	Sundries.	Gross Expenditure.	Cost per ton.	Receipts.	Per ton.	Profit.	Loss.
		£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.		£ s. d.	£ s. d.	£ s. d.		£ s. d.	s. d.	£ s. d.	£ s. d.
Black Range	1,750	96 0 0	105 18 4	23 0 8	120 7 0	345 6 0	3 11·35	22 11 6	91 17 6	459 15 0	5 3·04	787 1 9	8 11·92	327 6 9	
Burtville	512	22 6 8	64 0 0	15 6 0	29 2 0	130 14 8	5 1·27	..	57 1 10	187 16 6	7 4·03	248 6 6	9 8·40	60 10 0	
Coolgardie	1,521	45 0 0	169 3 2	69 2 8	129 4 5	412 10 3	5 5·08	19 16 8	98 13 3	531 0 2	6 11·78	513 8 10	6 9·00	..	17 11 4
Laverton	169	30 15 0	26 6 6	8 6 4	20 9 4	85 17 2	10 5·92	1 10 3	11 6 7	98 14 0	11 8·16	81 19 10	9 8·42	..	16 14 2
Leonora	225	10 0 0	23 2 10	12 9 10	20 6 6	65 19 2	5 19·34	96 3 4	38 17 7	201 0 1	17 10·39	109 14 3	9 9·02	..	91 5 10
Linden	..	..	..	5 7 7	2 9 2	7 16 9	..	..	1 1 4	8 18 1	..	..	..	..	8 18 1
Meekatharra	360	..	32 14 10	0 18 8	34 9 4	68 2 10	3 9·40	..	19 19 1	88 1 11	4 10·72	160 15 6	8 11·18	72 13 7	
Menzies	765	80 19 0	249 2 1	45 19 8	158 0 7	534 1 4	13 11·54	..	133 13 9	667 15 1	17 5·49	744 6 2	19 5·49	76 11 1	
Mulline	1,592	86 10 3	360 12 7	87 17 1	188 13 11	723 13 10	9 1·08	62 8 6	103 8 7	889 10 11	11 2·08	771 4 10	9 8·25	..	118 6 1
Mt. Sir Samuel	..	..	..	2 17 11	..	2 17 11	..	..	..	2 17 11	..	..	..	..	2 17 11
Mulwarrie	873½	52 4 5	186 11 8	57 3 8	124 18 4	420 18 1	9 7·63	32 15 10	87 15 7	541 9 6	12 4·75	428 16 8	9 9·81	..	112 12 10
Niagara	1,731	65 6 1	174 14 11	35 13 0	161 18 4	437 12 4	5 0·67	10 17 9	90 1 8	538 11 9	6 2·67	697 13 1	8 0·72	159 1 4	
Norseman	298	17 10 0	37 1 0	24 11 1	29 13 1	108 15 2	7 3·57	..	28 15 0	137 10 2	9 2·73	129 5 2	8 8·08	..	8 5 0
Pinjin	812	37 13 4	80 0 0	4 3 4	43 4 2	165 0 10	4 0·76	2 17 7	41 12 6	209 10 11	5 1·96	122 4 10	3 0·12	..	87 6 1
20-Mile Sandy	699	42 18 0	95 18 3	33 12 8	51 13 1	224 2 0	6 4·94	35 10 7	49 2 6	308 15 1	8 10·00	339 11 2	9 8·56	30 16 1	
Siberia	690	65 0 0	89 17 11	31 0 9	45 6 9	231 5 5	6 8·44	10 8 11	49 14 6	291 8 10	8 5·35	327 11 11	9 5·92	36 3 1	
Wiluna	2,850	111 18 0	350 10 8	81 14 11	232 17 3	777 0 10	5 5·42	38 15 0	198 8 2	1,014 4 0	7 1·44	1,223 10 5	8 7·03	209 6 5	
Yarri	1,966	93 0 0	171 0 9	44 4 6	95 0 5	403 5 8	4 1·22	18 3 10	118 12 11	540 2 5	5 5·93	539 18 1	5 5·90	..	0 4 4
Yerilla	304	21 5 5	38 2 6	0 19 10	27 12 10	88 0 7	5 9·48	422 8 2	20 4 8	530 13 5	34 10·94	152 0 0	10 0·	..	378 13 5
Youanme	1,482	81 16 8	135 15 0	16 13 5	107 0 11	341 6 0	4 7·26	28 0 10	96 5 2	465 12 0	6 3·38	733 1 9	9 10·70	267 9 9	
	18,599½	960 2 10	2,390 13 0	601 3 7	1,622 7 5	5,574 6 10	..	802 8 9	1,336 12 2	7,713 7 9	..	8,110 10 9	..	1,239 18 1	842 15 1
SLIMES.															
Black Range	2,423	80 0 0	752 15 10	72 7 10	242 13 5	1,147 17 1	9 5·68	1 19 5	135 12 10	1,285 9 4	10 7·32	1,211 10 0	10 0·	..	73 19 4
Burtville	167	25 6 8	43 13 4	2 13 9	26 11 3	98 5 0	11 9·19	0 7 9	23 17 2	122 9 11	14 8·04	83 10 0	10 0·	..	38 19 11
Laverton	131	12 5 0	26 11 0	0 6 8	17 2 11	56 5 7	8 7·10	..	6 1 1	62 6 8	9 6·19	65 10 0	10 0·	3 3 4	
Menzies	1,085	59 9 11	300 15 11	12 4 4	213 14 9	586 4 11	10 9·67	35 12 9	189 14 9	811 12 5	14 11·52	684 6 11	12 7·37	..	127 5 6
Mulline	..	..	26 13 4	..	.	26 13 4	..	53 8 1	..	80 1 5	..	..	..	..	80 1 5
Niagara	2,960	127 8 11	886 19 4	82 15 8	374 19 0	1,472 2 11	9 11·35	1 5 4	187 12 10	1,661 1 1	11 2·66	1,468 13 6	9 11·08	..	192 7 7
20-Mile Sandy	..	..	..	..	..	..	..	..	0 18 8	0 18 8	..	..	..	..	0 18 8
Siberia	85	16 10 0	15 9 1	5 4 0	8 19 9	46 2 10	10 10·27	24 5 4	4 11 9	74 19 11	17 7·75	40 15 10	9 7·17	..	34 4 1
Wiluna	318	30 3 0	173 3 5	6 11 8	44 16 10	254 14 11	16 0·25	27 10 4	56 15 7	339 0 10	21 3·86	334 2 0	..	..	4 18 10
Yarri	916	32 0 0	117 0 0	11 0 11	80 3 0	240 3 11	5 2·92	24 15 4	36 9 11	301 9 2	6 6·98	305 13 0	6 8·06	4 3 10	
Yundamindera	..	..	..	..	..	..	..	..	..	..	..	26 0 0	..	26 0 0	
	26,684½	1,343 6 4	4,733 14 3	794 8 5	2,631 8 4	9,502 17 4	..	971 13 1	1,978 6 9	12,452 17 2	..	12,330 12 0	..	1,273 5 3	1,395 10 5

SCHEDULE 10.

WESTERN AUSTRALIA.

State Batteries.

Balance Sheet from Inception of Scheme to 31st December, 1912.

To Capital Expenditure:	£ s. d.	£ s. d.	By Battery Cyanide and Slimes Plants ..	£ s. d.
From General Loan Fund	217,859 6 0	..	..	109,875 12 8
„ Consolidated Revenue ..	91,981 1 8	309,840 7 8	„ Gross Loss (including Depreciation) ..	371,848 15 9
„ Net Loss (excluding Depreciation) ..	..	171,884 0 9		
		481,724 8 5		481,724 8 5

Profit and Loss Account.

To Expenditure—	£ s. d.	£ s. d.	By Stock on hand ..	£ s. d.	£ s. d.
Head Office and all Batteries as per Treasury	874,710 3 6	..	„ Revenue received..	827,654 3 0	..
„ Sundry Creditors ..	5,522 6 2	..	„ Sundry Debtors ..	3,848 0 8	..
„ Bad Debts	20 9 7	..			841,595 10 3
		880,252 19 3	„ Gross Loss (including Depreciation) ..		371,848 15 9
„ Interest at 3½ per cent., and Sinking Fund at 1¼ per cent. on Capital Expenditure ..	133,226 11 9	..			
„ Depreciation ..	199,964 15 0	..			
		333,191 6 9			
		1,213,444 6 0			1,213,444 6 0

SCHEDULE 11.

Working Profit and Loss Account for the Year ending 31st December, 1912.

To Expenditure as per attached Statement:—	£ s. d.	£ s. d.	By Revenue as per attached statement:—	£ s. d.	£ s. d.
Batteries and Tin Plants	37,352 1 8	..	„ Batteries and Tin Plant Charges ..	28,526 1 0	..
Cyanide and Slimes Plants	12,452 17 2	..	„ Cyaniding and Slimes Charges	12,330 12 0	..
		49,804 18 10			40,856 13 0
		49,804 18 10	„ Loss on working carried down ..	..	8,948 5 10
					49,804 18 10
„ Loss on working brought down ..	8,948 5 10	..			
„ Additions and Equipment (paid from Revenue)	837 15 0	..	By Net Loss on Year's Operations ..	..	9,786 0 10
		9,786 0 10			

DIVISION IV.

ANNUAL PROGRESS REPORT

OF THE

GEOLOGICAL SURVEY

FOR THE YEAR 1912,

WITH ONE MAP.

TABLE OF CONTENTS.

MAP.

Annual Progress Report of the Geological Survey for the Year 1912.

Geological Survey Office,
1st March, 1913.

The work of the Geological Survey during the calendar year 1912 was continued on much the same lines as heretofore, and may be broadly subdivided into geology in its relation to (*a*) Mining (*b*) Water Supply, and (*c*) Agriculture.

THE STAFF.

The work of the Department has been carried out during the period under review by 20 officers.

As a result of the recent reclassification proposals, which have been adopted by the Government, the present organisation of the Survey comprises one Assistant Government Geologist, one Petrologist, one Assistant Geologist, three Senior and two Junior Field Geologists, one Chemist, two Assistant Chemists, two Draftsmen, one Clerk, and one Museum Assistant; of these six are trained Engineers.

During 1912 the Survey lost through resignation the services of Mr. E. C. Saint-Smith, who accepted an appointment on the Geological Survey of Queensland.

Mr. Torrington Blatchford, who formerly acted as Assistant Government Geologist between May 1897 and June 1900, was appointed to the newly created position of Assistant Geologist on the 1st of September.

FIELD WORK.

The field work of the year 1912 has been carried out in different portions of the State in the districts set out in the table attached.

Table showing the Distribution of Field Work for the year 1912.

Goldfield or Land Division.	H. P. Woodward.		T. Blatchford.		E. C. Saint-Smith.		J. T. Jutson.		H. W. B. Talbot.		F. R. Feldtmann.		C. S. Honman.	
	No. of days in the field.	Percentage of working days.	No. of days in the field.	Percentage of working days.	No. of days in the field.	Percentage of working days.	No. of days in the field.	Percentage of working days.	No. of days in the field.	Percentage of working days.	No. of days in the field.	Percentage of working days.	No. of days in the field.	Percentage of working days.
North-West Division	..	..	119	32·5	..	..	..	..	..	..	..	..	..	..
Peak Hill	..	..	..	..	..	..	..	..	7	1·9	..	..	..	..
East Murchison	1	0·3	..	..	..	..	..	..	200	54·6	..	..	..	..
Murchison	136	48·1	..	..	..	..	..	..	2	0·5	..	..	..	..
Mount Margaret	..	..	..	..	..	..	..	..	16	4·4	..	..	..	..
Broad Arrow	..	..	..	..	..	..	125	34·1	..	..	..	..	..	..
North-East Coolgardie	..	..	..	..	..	..	76	20·8	..	..	..	..	..	..
East Coolgardie	..	..	5	1·4	..	..	7	1·9	..	..	283	77·3	170	46·4
Coolgardie	..	..	..	..	31	8·4	..	..	..	..	..	..	94	25·7
Yilgarn	..	..	71	19·4	131	35·8	..	..	..	..	..	..	..	..
Eastern Division	..	..	..	..	..	..	..	..	28	7·7	..	..	..	..
South-Western Division	10	3·5	6	1·6	19	5·2	9	2·5	6	1·6	..	..	19	5·2
Totals	*147	51·9	201	54·9	181	49·4	217	59·3	259	70·7	283	77·3	283	77·3

* Only 283 days were devoted to Geological Survey Work ; during the rest of the year Mr. Woodward acted as State Mining Engineer.

A. GIBB MAITLAND.—Administrative work has naturally taken up a large part of my own time and attention during the year.

A considerable portion thereof was of necessity occupied with the reading and revision of manuscripts, maps, proof reading and other editorial duties, in addition to the current work of the office. Some idea of the labour involved in this very essential editorial work may be gauged by the tabulated return hereunder :—

Table showing Editorial Work, 1912.

Report.	Pages.		Figs.	Maps.
	MS.	Type.		
Bulletin XLII. ..	232	198	50	2
Do. XLIII. ..	130	100	16	0
Do. XLIV. ..	118	80	18	3
Do. XLV. ..	92	61	11	2
Do. XLVI. ..	35	23	0	2
Do. XLVII. ..	135	106	34	3
Do. XLVIII. ..	220	186	53	11
Do. XLIX. ..	206	..	54	10
Do. L.	102	68	7	1
Annual Report, 1911	65	14	0	0
Total ..	**1,335**	**836**	**243**	**34**

Despite these duties opportunity was found for a few short visits to the field officers, for the purpose of going over some of the work which was being carried out.

I also attended, as the representative of Western Australia, the Interstate Conference on Artesian Water Supplies, which sat in Sydney, New South Wales, between the 30th of April and the 18th of May.

H. P. WOODWARD.—During January the Assistant Government Geologist visited Eradu with the object of examining in detail the area over which coal-bearing operations had been carried on.

Owing to the illness of the State Mining Engineer, Mr. Woodward temporarily discharged his duties, during the months of February, March, and the greater part of April, having for this purpose been gazetted Acting State Mining Engineer. Having fulfilled these duties, Mr. Woodward resumed his work on the Survey, spending about four months in the field in the Murchison District.

While engaged upon this field a more or less detailed survey of the two newly discovered tin mining centres of Poonah and Coodardy was made, this being followed by a flying survey of the South-Western portion of the Murchison Goldfield, including the centres of Cue, Day Dawn, Cuddingwarra, Mindoolah, Weld Range, Moyagee, The Island and Mainland, Lake Austin, Webb's Patch, Reedy's Find, Eilya, Tuckanarra, and Stake Well. A short visit was also paid to the Wilgie Mia, or Native Ochre Mine. Mr. Woodward was also instrumental in the discovery of Emeralds at Poonah. On the completion of his field work on the Murchison, Mr. Woodward, acting under Departmental instructions, visited Sandstone with the object of enquiring into the exact nature of a request for the services of a member of the staff to carry out geological work at that centre.

A brief visit was paid to Rottnest in connection with matters arising out of the boring for artesian water being carried on at that centre.

During the year 1912 the Assistant Government Geologist was in the field upon work for the Geological Survey, 147 days, exclusive of the 82 days during which he acted for the State Mining Engineer ; he occupied the position of Acting Government Geologist for a period of 42 days ; was on leave of absence for 31 days, while the remaining 63 days (including public holidays) were occupied in the preparation of reports and making arrangements for field work.

TORRINGTON BLATCHFORD.—A few days during the month of January were spent in the vicinity of Moora, in connection with proposals to bore for artesian water in that locality. The last week in March, the whole of the months of April, May, June, and the first half of July were spent in the Pilbara, West Pilbara, and Ashburton Districts, enquiring into the present condition of Mining, and the methods by which such could be legitimately assisted. The months of August and September were occupied in writing the report thereon, and completing one on the Coolgardie Goldfield. In October, Mr. Blatchford was instructed to proceed to Marvel Loch, Yilgarn Goldfield, and take over the field work from Mr. Saint-Smith, who was transferred to the South-West District in connection with geological investigations in regard to the lime deposits, in the interests of the Agricultural industry. While on the Yilgarn Goldfield Mr. Blatchford continued the work to the south of Marvel Loch, and completed the mapping of the geological boundaries, from the southern limits, Cheritons, as far north as the Victoria Leases.

During the year Mr. Blatchford spent 201 days in the field.

E. C. SAINT-SMITH.—This officer spent 131 days in the Yilgarn Goldfield, and, during the period engaged on the detailed mapping at Marvel Loch, he visited Weston's, Golden Valley, and Southern Cross, in connection with application for State Aid for boring, under the terms of the Mining Development Act. From the 26th of March to the 9th of April Mr. Saint-Smith was engaged in examinations of Mineral Areas at Southern Cross, Ennuin, and Marvel Loch, which it was proposed should be alienated. Four weeks during the months of May and June Mr. Saint-Smith, in conjunction with Mr. J. T. Jutson, was engaged in sampling the mines at Ora Banda, in connection with an application for a State Battery at that centre.

From the 2nd of July to the 16th of October his attention was occupied in the geological survey of the southern portion of the Yilgarn Goldfield when the work was taken over by Mr. Blatchford.

The month of November and a portion of December were devoted to the lime deposits of the South-West Division.

During the year Mr. Saint-Smith spent 181 days in the field.

J. T. JUTSON.—Up to the 6th of February this Officer was engaged upon the writing of reports, preparation of plans for field work, etc. During the period between the 6th and the 15th of February Mr. Jutson was engaged reporting on the occurrence of rutile at Yulgering. On the 19th of April he left Perth for Kanowna, and until the 23rd was engaged in making arrangements for the season's work. The three following days were spent in obtaining a general idea of the surrounding district. Up to the 6th of July Mr. Jutson's time was devoted to a detailed survey of Ora Banda and sampling certain of the mines. Between the 8th

of July and the 5th of August was devoted to investigations at Kanowna, arising out of proposals to carry out some deep boring at that centre. The recent gold discoveries at Kurnalpi occupied Mr. Jutson's time between the 6th and the 15th of August, whilst between the 28th of August and the 3rd of September this officer accompanied me in a rapid traverse through the Kanowna, Gindalbie, Mulgarrie, and Gordon Districts. The Ora Banda survey was continued with more or less interruption, up to the 5th of December, upon which date it was finally completed.

During the year Mr. Jutson was engaged in the field 217 working days.

H. W. B. TALBOT.—With the exception of six days upon which Mr. Talbot was engaged on field work in the Darling Range in connection with the geological map of the Metropolitan Area, the whole of the time up to the 7th of March was devoted to the writing of the report and the preparation of the plans of the previous season's field work.

On March 7th Mr. Talbot left Perth and until August 28th was engaged upon a flying geological survey of a portion of the East Murchison Goldfield, with but a slight interruption in April, when an examination of the Mount Keith neighbourhood was undertaken, with the object of affording information regarding the advisability of erecting a State Battery at that centre.

From the 27th of August to the 13th of September Mr. Talbot was at headquarters, on the 14th inst he left again for Wiluna and on arrival at the latter place continued the flying survey of the East Murchison Goldfield until the 1st of December.

During the year Mr. Talbot spent 259 days in the field.

F. R. FELDTMANN.—The whole of Mr. Feldtmann's time available for field work during the year was spent at Kalgoorlie. The period between the 1st of January and the 30th of April was devoted to completing the first section of the detailed geological survey of the North End of Kalgoorlie.

From the 1st of May to the 12th of June Mr. Feldtmann spent at headquarters writing his report in connection therewith; the 16 days from the 13th to the 28th of June were spent in Kalgoorlie clearing up some points which had arisen in connection with the report, which was completed on the 7th of August. The remaining portion of the year was spent in the field carrying on the second portion of the detailed survey of Kalgoorlie.

In all 283 days were spent in the field during the year.

C. S. HONMAN.—This officer's first field work during the year was between January 22nd and February 3rd, when on examination of the clay deposits between Mundijong and Swan View was undertaken.

A week towards the end of February was devoted to surveying the high-level laterites in the Darlin Range. A more or less detailed survey of the Binduli area at Kalgoorlie occupied Mr. Honman's attention from the 9th of April to the 31st of July.

From the 1st of August to the 3rd of December detailed geological field work in the country between Kalgoorlie and Coolgardie, and 20 miles south of the railway line was undertaken, and a few days in November were spent in an examination of the gold discoveries on the Woodline Rush, six miles north of Bulong. Mr. Honman spent 283 days in the field during the year under review.

LABORATORY WORK.

The Chemical and Physical Examinations required for the investigations of the Survey, and the public assaying, the work for the State Battery Branch, etc., have as usual been carried on by Mr. E. S. Simpson and the officers working under his direction. The work for the State Battery Branch is, as has been the case in the past, carried out by an officer, whose salary becomes a charge upon the State Battery Vote, hence his position does not appear in the classified list of officers of the Geological Survey.

During the year 1912 the total number of samples dealt with in the Chemical Laboratory amount to 1911, as against 1,999 in the previous year, and as may be seen by the attached table, the bulk of the work done for "other departments" has been for the State Batteries Branch.

It is very much to be regretted that the position of Cadet set out in the reclassification proposals of the Public Service Commissioners, adopted by the Government, and the salary for which has been provided by Parliament has not even yet been filled.

The laboratory being in a separate building is a serious drawback, and a great inconvenience in addition to preventing adequate supervision of the work being carried on. It is to be hoped that steps will soon be taken to properly house the whole of the staff and collections of the Geological Survey in one building.

The attached table shows the routine work performed during the year 1912:—

	Public.		Geological Survey.	Other Departments.	Totals.
	Pay.	Free.			
Samples	76	435	199	1,201	1,911
Assays for Gold	68	245	77	1,163	1,553
„ Silver	3	74	4	181	262
„ Copper	2	44	9	41	96
„ Tin	..	39	7	1	47
„ Lead	1	16	..	..	17
„ Arsenic	..	1	..	5	6
„ Iron	..	4	..	5	9
„ Manganese	..	3	..	3	6
„ Nickel	..	2	..	7	9
„ Sulphur	..	1	1	17	19
„ Other metals and non-metals	5	13	6	1	25
Analyses complete	2	2	46	2	52
„ Partial	..	4	27	26	57
„ Proximate	..	6	..	..	6
Mineral Determinations	2	149	65	65	281
Clay tests	..	11	..	..	11
Miscellaneous	..	11	13	3	27
Totals	159	1,060	454	2,721	4,394

Mr. Simpson in reporting to me on the year's operations remarks *inter alia* :—

Owing to the staff being insufficient to cope with the routine work, all research had to be abandoned early in the year. It is generally recognised that one of the most important functions of any Government Laboratory is the carrying out of researches with a view to initiating or stimulating the utilisation of the natural products of the country. It is disappointing therefore that no opportunity was found for carrying out researches previously planned with a view to aiding directly in the exploitation of the mineral wealth of the State. One such, as far as it went, resulted in the discovery of a suitable mixture of local clays for the production of vitrified pipes and other similar ware of better quality than that which was previously made here, and which was largely composed of clay imported from Victoria at considerable expense. The immediate results of this have been :—

(1.) The establishment of a new factory in Perth for the production of such ware.

(2.) The certain material reduction in the near future of the cost of drain-pipes and therefore of sewerage connections and reticulations, accompanied by an improvement in the quality of the pipes used.

(3.) The exploitation of a hitherto unutilised mineral of local occurrence.

Very little time was found for working up accumulated information for publication. Except for minor reports, the only ones so prepared during the year were :—

" Radium-Uranium Ores from Wodgina." Now in the press in Bulletin 48.

" Notes on the Carbonate Minerals occurring in certain Kanowna Rocks." Published in Bulletin 47.

In addition to the above, two papers were, with the Government Geologist's permission, published outside the Department, viz. :—

" Notes on Laterite in Western Australia." (*Geological Magazine*, September, 1912.)

" The Rare Metals and their Distribution in Western Australia." (Natural History and Science Society of W.A.)

The following previously unrecorded mineral occurrences were noted during the year and are of more than passing interest :—

Common Beryl and *Emerald* (precious green beryl) at Poonah, Murchison District.

Scheelite (tungstate of calcium) at Wodgina, N.-W. Div.

Xenotime (phosphate of yttrium) at Nannup, S.W. Div.

Manganocolumbite (niobate of manganese) at Coodardie, Murchison Div.

Aragonite (carbonate of calcium) filling the beds of Lake Clifton, S.W. Div.

Barytes (sulphate of barium) constituting a lode at Tenterden, S.W. Div.

Pyrrhotite (sulphide of iron) forming the major component of a lode 60 feet wide at Parker's Range, Central Div.

Siderite (carbonate of iron) forming a second lode at Parker's Range, Cen. Div.

PETROLOGICAL WORK.

During the year Mr. Farquharson was fully employed in carrying on the work required by the field officers, and in addition making such other miscellaneous examinations as were required for the public.

The rocks collected by Mr. Saint-Smith in his survey of the South-West Division were fully described, and appear in Bulletin 44.

The specimens collected by Mr. Talbot during his reconnaissance of parts of the North Coolgardie and East Murchison Goldfields were thoroughly examined and a petrographical description thereof was embodied in Bulletin 45.

The material acquired by Messrs. Blatchford and Jutson during an investigation into the mining geology of the Kanowna Main Reef Line of Lode was also undertaken, and the results appear *in extenso* in Bulletin 47.

As opportunity offered during the routine work inseparable from an office of the nature of the Geological Survey, Mr. Farquharson was enabled to spend a little time in the field examining the ore-bodies and adjacent rocks at Meekatharra, Southern Cross, and other portions of the Goldfields. A short time was spent by Mr. Farquharson at Kalgoorlie, for the purpose of obtaining sufficient knowledge of the field relations of the quartz-keratophyre and doleritic and gabbroid rock types to collaborate with Mr. Feldtmann in the preparation of a report upon the North End of Kalgoorlie.

A suite of rocks from Ora Banda collected by Mr. Jutson during the course of his survey was examined, as were also those from Coolgardie and Mount Monger acquired by Mr. Blatchford from that neighbourhood.

The specimens from Binduli obtained by Mr. Honman were examined in more or less detail and the results will be embodied in a report upon that work now in preparation.

The taking and printing of the numerous microphotographs accompanying the petrographical reports appearing in the Bulletins published during the year occupied a good deal of Mr. Farquharson's time ; pending proper arrangements being made for this work being done in the Geological Survey Office, the Director of Technical Education was pleased to allow the petrologist free access to the photographic equipment, etc., in the Perth Technical School. The new camera and accessories arrived from England towards the close of the year, and a micro-photographic room is now being fitted up to enable this very necessary work to be done on the premises.

During the course of the year's work 265 rock sections were cut and deposited in the Survey Collection.

Mr. Farquharson commenced his annual leave on the 16th December.

LIBRARY.

During the year, 768 publications have been received from cognate departments throughout the world.

111 volumes were added by purchase and 59 volumes bound.

A new system of rearrangement and classification of the library is about to be commenced as soon as other work connected with the publication of several bulletins has been finally disposed of.

The distribution of the survey publications is naturally carried out departmentally, and the total number of Bulletins, Reports, and Maps sent out during 1912 amounted to 2,216, being a considerable increase on the figures for 1911.

GEOLOGICAL MUSEUM.

The additions to the Survey Collection during the year 1912 amounted to 770, bringing the total registered up to 12,866. The accessions comprised 651 rocks, 115 minerals, and four fossils. 265 microsections were cut during the period under review, bringing the total up to 1,939.

The arrangement of the Survey Collection, housed in the National Museum, remains in the same state as it was last year, and no new specimens have been placed in the show collection as arranged in the gallery.

It is to be hoped that proper steps will shortly be taken as to the housing of the Survey Collection, for the present arrangement precludes the possibility of the department properly fulfilling its functions, besides being in other respects unsatisfactory.

PUBLICATIONS.

During the past year the following publications were issued to the public :—

Annual Progress Report for the Year 1911.

Bulletin 43.—Petrological Contributions to the Geology of Western Australia. I. : by R. A. Farquharson.

Bulletin 45.—Geological Investigations in part of the North Coolgardie and East Murchison Goldfields : by H. W. B. Talbot.

Bulletin 46.—Par of the Yilgarn and North Coolgardie Goldfields : by H. P. Woodward.

Bulletin 47.—The Kanowna Main Reef Line of Lode : by T. Blatchford and J. T. Jutson.

Bulletin 50.—The Geology and Mineral Industry of Western Australia : by A. Gibb Maitland and A. Montgomery.

In addition to the above there are now in the hands of the Government Printer :—

Bulletin 42.—Contributions to the study of the Geology and ore deposits of Kalgoorlie, Part I. : by E. S. Simpson and C. G. Gibson.

Bulletin 44.—The South-West Division of Western Australia : by E. C. Saint-Smith.

Bulletin 48.—Miscellaneous Reports, Nos. 9 to 32.

Bulletin 51.—Contributions to the study of the Geology and Ore Deposits of Kalgoorlie, Pt. II. : by R. A. Farquharson and F. R. Feldtmann.

Bulletin 52.—The Mineral Resources of the North-West : by T. Blatchford.

The following will it is hoped be shortly in the hands of the printer :—

General Index to Reports, 1870–1910.

The Geology of Ora Banda.

The Country to the South and West of Kalgoorlie :

whilst a memoir on—

The Geology and Mineral Resources of Western Australia, accompanied by a four-sheet Geological Sketch Map, on the scale of 1 /1,584,000 is in course of active preparation.

GENERAL.

In addition to the ordinary work of the Department there were made during the year 39 special reports in connection with the alienation of mining lands, and 34 connected with proposals to grant subsidies under the Mining Development Act.

Several requests have been made during the year, for reports upon individual mining properties, by private persons. None of these requests have been complied with, for the reason that it is hardly within the province of the Geological staff to examine and report on individual or private mining properties except when they form part of a larger investigation embracing the district in which the mine may be situated ; exceptions are of course made in those cases in which application for State Aid is made under the terms of the Mining Development Act.

Good progress has been made, in pursuance of the policy for which the staff was increased in 1911, with the mapping of the country in the mining districts, with the ultimate aim of meeting the demand for geological information of outside and lesser known areas and thus tending to direct prospecting into legitimate channels. The attached map shows the work which has been so far accomplished. The geological sketch maps are issued on the scale of four miles to the inch, and each is numbered in accordance with the 300-chain series issued by the Department of Lands and Surveys.

Principal Results of the Year's Operations.

WATER SUPPLY.

Interstate Conference on Artesian Water Supplies.

1. In accordance with instructions I attended. as the representative of Western Australia, the Interstate Conference on Artesian Water Supplies, which sat in Sydney between the 30th April and the 18th of May inclusive, with a short interruption between the 3rd and 8th, when opportunity was taken to visit an important portion of the New South Wales Artesian Water Area, near the Queensland border.

2. The members attending the Conference were as follows :—

E. F. Pittman, Government Geologist and Under Secretary for Mines, New South Wales—Chairman.

J. B. Henderson, Government Hydraulic Engineer, Queensland.

L. Keith Ward, Government Geologist, South Australia.

A. Gibb Maitland, Government Geologist, Western Australia.

A. S. Kenyon, Engineer in Charge of Water Boring, Victoria.

H. H. Dare, Engineer in Charge, Water Conservation and Drainage, New South Wales ; and

R. F. Jenkins, Officer in Charge, Artesian Water Bores, New South Wales.

3. On the 18th May a preliminary report upon the results of the deliberations of the Conference was signed by all the members, subsequently printed and issued to the public.

4. Amongst the more important facts elicited during the course of the deliberations of the Conference were :—

(*a.*) The very large portion of Australia occupied by Artesian Water Areas, and the extent to which the interest of several States are involved in regard to more than one of the known artesian basins ;

(*b.*) The amount of work which has been officially done in this connection in Australia, and the very variable degree of precision of the investigations carried out in the different States of the Commonwealth ;

(*c.*) The very marked and serious diminution both in the flow and pressure of those artesian wells of which periodical measurements have been made under direct Government supervision ; and

(*d.*) The very serious corrosion of bore casings which up to the present time, however, seems confined to certain restricted, though extensive, areas of Australia.

5. The members of the Conference, after discussing fully the source, utilisation and conservation of the Artesian Water Supplies of the Commonwealth, unanimously recommend, *inter alia*, for the serious

consideration of the respective Governments of Australia :—

(*a.*) A uniform system of delimiting the different Artesian Water basins of Australia ;

(*b.*) A hydrographic survey, with the view of arriving, so far as is possible, at an estimate of the water annually absorbed by the respective basins ;

(*c.*) Legislation to prevent an unnecessary multiplication of bores, with the object of effectively conserving for all time the underground water resources of all Australian artesian basins ;

(*d.*) Uniform legislation to ensure the effective control by the States of all exisitng and future bores within all artesian basins ;

(*e.*) No new irrigation enterprises, which depend for their supplies of water upon artesian wells, being inaugurated until certain investigations recommended by the Conference have been carried out ;

(*f.*) A uniform system of casing all artesian wells ;

(*g.*) Investigations into the composition and structure of the metals of which bore casings are made, and into the efficiency of coatings or linings in such casings in so far as their powers of resisting corrosion are concerned ;

(*h.*) The formation of a permanent Interstate Board for the discussion, correlation and recording data in regard to the artesian basins of the Commonwealth ; and

(*i.*) The cost of any special investigations recommended by the present Conference to be borne in equitable proportions by the respective States.

It may perhaps be of interest to note that this Conference virtually forms a part of that great modern scientific movement of the Conservation of Natural Resources which is slowly but surely making itself felt throughout the whole civilised world.

Rottnest Island Bore.

A deep bore in search for artesian water was put down to a depth of over 2,500 feet.

Owing to difficulties in connection with the boring plant operations were stopped, without the (Jurassic) water-bearing sandstones, which are believed to be beneath Perth, having been reached.

The strata pierced in this bore hole were of considerable geological interest and the bore cores were submitted to Mr. Etheridge, of the Australian Museum, Sydney, who reported :—

"The core pieces can be at once divided into two series, Nos. 20ft.-209ft. and 1285ft.-2185ft.

Nos. 20ft.-209ft. are clearly of very recent geological date, probably upraised Post Tertiary marine beds, a chalk-like calcareous deposit. Numbers 1285ft.-2185ft. can only be one of two things, viz., Tertiary or Late Mesozoic. Many of the core portions, comprised within these numbers (except 2021ft.-31ft.) shown on the fractured surfaces broken up shells quite impossible of determination or of significance. On numbers 1480ft.-1541ft. charred vegetable tissue is visible. The small objects on numbers 1575ft.-95ft.A and numbers 1595ft.-2021ft.A puzzle me very much. If they be not fragments of a Crustacean integument, I do not know what they are. Numbers 1595ft.-2021ft.B are certainly portions of one of the higher Crustacea. Numbers 1595ft.-2031ft.C I believe to be one of the valves of an Entomostracan. Numbers 1595ft.-2021ft.D is, I think, a very elegant and small example of a *Pinna*. Of the several little objects under No. 1595ft.-2021ft. I know not what to make, unless they are small bivalve shells, and yet they seem too delicate and thin for this to be the case. I at first took them to be an *Estheria,* but have failed to detect the characteristic sculpture of that genus.

The objects, so far as they go, are all new to me. The character of the matrix is similar to that of some of our Lower Cretaceous beds, but of course, matrix alone is not of much value. I think it will be quite safe to assume the age of the deposit to be not older than that mentioned." . . .

AGRICULTURE.

Limestone Deposits of the South-West.

An examination of the principal limestone deposits in portion of the South-West District was made in the interests of Agriculture by Mr. E. C. Saint-Smith.

This officer submitted the following preliminary report. The localities visited were—Pinjarra, Capel, Busselton, and Waroona.

At *Pinjarra* there is an apparently extensive deposit of limestone on the property of Mr. Paterson. This deposit has already been reported upon and sampled to a limited extent by Messrs. Mann, Government Analyst, and H. P. Woodward, Assistant Government Geologist. There is nothing to add to their reports other than that before any action in the direction of purchase be taken the deposit should be systematically bored and analysed. By far the greater portion of the deposit is soil-covered, and the exact delimitation of the area over which the limestone extends can only be determined by boring operations. The deposit is situated right on the railway line, about 1½ miles north of Pinjarra railway station.

A fairly extensive deposit of limestone also occurs in the district between "Ravenswood" and Mandurah ; the material here is also for the most part sand and soil covered.

Capel.—On what is known locally as the Tuart Reserve, about three miles West of Capel, there is a very extensive deposit of Coastal Limestone which outcrops to a few inches above the surface in odd places. This deposit is largely composed of shells. Where any considerable outcrop was visible the loose blocks were collected and burnt for lime with, it is stated, good results. As this deposit could be worked without the initial cost of purchase, being on a Government Reserve, and also appears to be of fairly pure composition in parts, it should, in my opinion, be bored and accurately mapped.

Busselton.—Around Busselton are several deposits of coastal limestone which find their greatest development in the Yallingup district and Southwards thereof, but in view of the more conveniently situated deposits at Capel, Pinjarra, etc., I am not of opinion that much attention need be paid to these Southerly situated occurrences for the present, seeing that similar material more centrally situated is to be found all along the coastline between Busselton and Perth.

Lake Clifton, Waroona.—Lake Clifton is situated about 14 miles West of Waroona, and about three miles from the ocean. It is approximately 10 miles in length and half a mile in average width.

At the time of my examination in December, the water was only slightly brackish, but I am informed that by the end of summer it is noticeably more saline though not nearly so salt as the ocean water. In winter the water is practically fresh.

The lime occurs in the form of a very loose white material forming the bed and shores of the lake. Trials of the depth of the deposit were made by me with a pole across the centre of the lake at frequent intervals, from which it is certain that a minimum average depth of 13ft. 6in. of the material

is present. The lime is for the most part quite impalpable and has been produced by an accumulation of tiny gasteroped shells, exfoliated shells, shell fragments, and chemically precipitated lime, the last mentioned substance forming apparently the bulk of the deposit. Associated with this material are numerous diatoms.

Partly surrounding the lake, more especially along its Western side are ridges of Coastal Limestone, the material from which finds its way into the lake during the heavy winter rains; as the summer approaches the lake shrinks considerably in volume, with the result that the water becomes supersaturated with lime and chemical deposition takes place.

Judging from a cursory examination of the shores of the lake, I have little doubt but that an extension of the deposit will be found to occur to the West of the lake on the Government reserve.

Where resistance to the further passage of the pole through the lime was met, an examination of the bottom surface of the pole indicated the existence of a thin deposit of guano beneath the loose lime.

Mr. Claude Newnham of the Boulder Farm, Waroona, has a lease (No. 411/41A) of about 700 acres of the central portion of the lake bed, but the deposit certainly extends far beyond his lease boundaries. The existence of the lime here had apparently not been detected previously to Mr. Newnham's discovery, and some credit is due to that gentleman for the persistence with which he sought for suitable lime deposits in his district for agricultural purposes; the actual fact that the water-covered bed of the lake was one immense deposit of lime might easily have escaped the notice of a geologist.

A strong smell somewhat resembling that of phosphoretted hydrogen is given off when the lime is disturbed below the surface.

Especially along the Eastern shore small circular patches of fairly compact lime are forming as the result of the growth of colonies of small organisms, but the deposit appears to be entirely superficial.

Owing to the receding of the water of the lake in the summer months, the lime forming edges of the lake becomes dried and is inclined to form small soft lumps, but this feature disappears with the return of the winter months.

A carefully averaged sample of the centre of the lake was secured by me from a depth of one foot below the surface of the deposit; this sample has been reported upon by Mr. Simpson, Chemist and Assayer, in the following terms:—

The material submitted was a fresh marl composed mainly of carbonate of lime precipated partly by organic and partly by inorganic chemical agencies in a very finely divided state. An analysis on a sample dried at 100°C showed the presence of:—

	Per cent.
Lime, CaO	48·88
Carbon dioxide, CO_2	37·07
Organic matter (including Nitrogen, 0·32 per cent.)	8·93
Silica, $Si O_2$	1·61
Magnesia, MgO	1·01
Iron oxide and Alumina	·24
Sulphur trioxide, SO_3	·39
Phosphoric oxide, P_2O_5	·09
Salt, NaCl	2·02
	100·24

Approximately 47 per cent of the lime is present as carbonate (84 % $CaCO_3$), the small remainder being present in combination as sulphate and as a salt of one or more organic acids.

The variety of carbonate of lime in the sample is not calcite, which is that found in almost all limestones, but aragonite. This is of importance in connection with the utilisation of this material as a fertiliser since aragonite is known to be more susceptible to the attack of rain water and ground water than calcite. The minute size of the particles of aragonite will ensure a maximum activity in the soil.

A considerable percentage of nitrogenous organic matter is present, the value of which as a fertilising agent must not be overlooked.

The silica shown by analysis exists almost entirely in the form of siliceous skeletons of diatoms and fresh water sponges.

The proportion of salt in the marl will naturally vary with the season, being dependent entirely on the quantity and degree of concentration of the water associated with the deposit. It will be least during the rainy season, and highest at the end of summer.

A considerable deposit of somewhat similar material occurs in Martin Tank, Salt Lake, and a group of small salt lakes near by, but owing to the heavy amount of saline matter present I do not consider that much attention need be directed to these occurrences in view of the more accessible deposit in Lake Clifton itself. In view of the possible deterioration of the lime by the deposition of salt at the end of the summer, I would suggest that the material be raised during the early part of the season in order that the extra supply of water may be present in the lake; at this portion of the year the salt present would be in solution and would therefore be practically absent from the lime itself.

At the present time this deposit is, of course, too far removed from a railway for cheap transport, but in the event of the construction of the suggested Pinjarrah to Brunswick Junction loop line it would only be about 1½ miles from the latter, to which it could be easily connected by a spur line.

The working of the deposit presents no difficulties whatever as the material could be cheaply taken out either by a dredge or by means of a sand pump or other similar appliance; staging would need to be erected on which the material could be dried before being removed.

Taking into consideration the fact that there are many millions of tons of lime cheaply available and in an excellent physical condition for direct application, there is no doubt but that in Lake Clifton the State has a remarkably fine asset which will very materially assist in the utilisation of the extensive swamp and other lands in the South-West and elsewhere. In my opinion the material forming the lake bed is all of a very similar composition to that of the sample referred to previously, but careful systematic sampling of the deposit is recommended before any serious attempt is made to exploit the deposit.

MINING, ETC.

The Country North of Lake Way.

The principal results of Mr. Talbot's field work in the country to the North of Lake Way are set out in the preliminary report which he has prepared and which is given *in extenso*:—

The following is a short description of the country examined during the past season.

In addition to the Wiluna greenstone area,* the boundaries of which were mapped to its southern limits and northwards as far as the Gascoyne River, three greenstone areas have been placed upon the maps with some degree of accuracy. The most westerly of these † lies about 20 miles to the S.-W. of Wiluna. Its southern point reaches the Wiluna-Nannine road at the Bore well, at its northern end it disappears under the sedimentary series which extends westwards from the Finlayson Range and, in all probability, it is only a branch

* Lands Department Lithos. 53/300, 60/300 and 71/300.
† Lands Department Litho. 60/300.

from the main Wiluna belt, which lies a few miles to the eastwards. The point at which it bifurcates cannot, however, be seen owing to the covering of sedimentary rocks.

The Wiluna greenstone area * commences a few miles to the S.E. of Mt. Keith. It runs N.N. Westerly in a narrow zone through Kingston to near the "Quartz Blow" on the Lawlers-Wiluna Road. There the Western boundary swings round to the W.N.W. to Diorite Well on the Wiluna-Nannine Road. It then turns northwards again and is seen at intervals underlying the sedimentary series, as far as Thadunganna Pool on the Gascoyne River. This is not the northern limit of the belt as greenstone hills were visible to the North of the pool. There is a marked change in the type of rock in this belt to the Northwards of Wiluna. At Wiluna and to the Southwards of that place large areas are occupied by indurated schists traversed by acid and basic dykes and there are numerous quartz reefs and also a large number of bands of ironstone which coincide with the general strike of the country, and I am of opinion that many of these ironstone outcrops are the capping of lodes some of which may prove to be auriferous. To the Northwards of Wiluna the rock is all of the massive type and there are but few quartz reefs and those seen appeared to be of a particularly hungry character.

What may be called the Barlows belt† lies about thirty miles to the East of Wiluna. At Barlows it is only about five miles in width but from here the Western boundary turns to the West North-West to the May Queen Leases from which point it turns to the North-West and the belt finally pinches out about fifty miles to the North West of Barlows. This belt runs in a narrow zone South Eastwards from Barlow's to a point about five miles South of Maitland Peak (or Mt. Joe as it is known locally). Here it widens out considerably to the Westward but turns back on its original course again at Beats Well on the Sir Samuel-Barlow's Road. Southwards from this point the belt is about 12 miles in width and it extends Southwards beyond the limits of my travels in that direction.

Mining has been carried on in three localities on this area.

1. In the vicinity of Collavilla.
2. Around Barlow's, and
3. At Bronzewing.

All the leases have, however, been abandoned.‡ None of the old workings were accessible, but from what I could gather from a surface examination I formed the opinion that few of the reefs worked were of any width, and a want of linear continuity appeared to be characteristic of all of them.

Throughout this belt there are a large number of bands of ferruginous quartz-schists and these all conform to the general strike of the country, viz., a little to the West of North.

The Northern point of the most Easterly belt† lies a little to the West of Long. 121deg. 30min. in Lat. 26deg 24min. S. This area runs in a general Southerly direction past the Stirling Peaks and Mt. Carnegie to beyond the Erlistoun Creek. Its Southern limit was not reached by me. A little prospecting work has been done in the vicinity of Mt. Eureka, but none of the country seen gave much promise of becoming important from a mining point of view.

The country between these greenstone belts is occupied by granite of which there are several types. These will be fully described in the detailed report to be written later.

The most interesting geological feature seen during the season's field work was the large area of sedimentary rocks occurring in the vicinity of Charles Wells Creek and Lake Carnegie‖ these consist of sandstones, shales and limestones. This sedimentary formation, on its Western and Southern edges rests upon granite and outliers of this latter rock are seen in places in the Princess Range. At the Northern boundary of the sedimentary area the beds are seen resting unconformably upon the upturned edges of the belt of metamorphic slates which were fully described in Bulletin 39§. The basal beds consist of soft fine-grained sandstones overlain by grey and blue shales as the belt is followed Eastward thin bands of limestone, about an inch in thickness, are seen interbedded between the shales. A series of excellent sections of these shales and limestones were seen in a traverse made down Charles Wells Creek. As the Creek is followed eastward the limestone beds become thicker and more numerous and near the crossing of the Wongawall track a bed of limestone about five feet thick was seen. The shales and limestones are overlain by coarse flaggy sandstones and quartzites. These latter form isolated hills and rough broken ranges and the quartzites are invaribly found on the tops of these. These are of no great thickness and represent sandstones indurated by the deposition of secondary silica drawn to the surface by capillarity. This surface induration is quite common throughout the interior of the State, in fact it is only rocks seen in cliff sections that are not more or less indurated. The amount and direction of the dip in the beds forming the sedimentary series described above varies in different localities. In some places they are almost horizontal and the greatest angle at which the beds are inclined is about twenty degrees. This latter dip, however, is seen only in the vicinity of faults or local folds of which a few were seen. The mean dip of the beds is about 5deg. and the prevailing direction is to the North-East.

These sedimentary rocks extend far beyond the limits of my travels to the Eastward, and it would be of interest to have their extension in that direction mapped as there may be a possibility of artesian water being found near the centre of the area. This, however, would not be of much value as the area described is watered by numerous large water holes and springs, and water of good quality can be obtained at a shallow depth by sinking.

The area mapped during the season's field work embraces portions of the Lands Department Lithos. Nos. 52/300, 53/300, 60/300, 61/300, and 71/300.

A series of the limestones were submitted to Mr. Etheridge, of the Australian Museum, and in one of them [12505] from a locality seven miles South of Wongawall, on the East Murchison Goldfield, this gentleman recognised "in the less dense portion there is certainly a queer half obliterated polygonal structure which to my eye, may be the remains of a coral, such as a minute *Favosites*, but it is altogether too problematical to speak definitely."

The Northern Portion of the Kalgoorlie Goldfield.

Mr. Feldtmann mapped in detail an area at the extreme Northern end of the productive portion of Kalgoorlie, so far as at present understood.

In the course of this work some important data have been brought to light, as set out in the digest, which Mr. Feldtmann has prepared :—

From the beginning of the year until the 30th April I was engaged in completing the field work for the first section of this work, which included roughly that portion of the field which lies to the North of the Kanowna railway line and East of the Menzies line, embracing about one square mile, taking in the Golden Zone, Mystery, and Kapai lines of lode.

Surface features including shafts were surveyed by means of the tacheometer, which appears to be an ideal instrument for work of this nature, and were mapped on a scale of 100 feet to the inch. A careful examination was made of such underground workings as were accessible and where no mine plans were available these were drawn on a scale of 50 feet to the inch.

Outcrops within the area mapped being chiefly conspicuous by their absence, accurate mapping of geological boundaries was a matter of some difficulty and for this I had to rely mainly on the underground work.

General Geology.—The results of the detailed examination showed the area to consist for the most part of rocks of gabbroid or doleritic origin, now largely represented by amphibolite, which forms the country rock of the Golden Zone line of lode. On the Western side the amphibolite is generally of fairly coarse grain, carrying a large proportion of felspar. There is also a considerable extent of reck forming the country of the Mystery and Kapai ,lines of lode composed chiefly of talc and chlorite, possibly representing a more highly altered portion of the amphibolite.

Of later origin than the amphibolitic rock is a pale grey or pinkish rock consisting largely of albite felspar which occurs for the most part in dyke-like masses. This rock has been classified as a quartz-keratophyre ; it intrudes the previously mentioned rocks and would appear to be closely connected with some of the ore bodies, particularly along the Mystery line of lode.

Lateritic deposits are common within this area, several being of considerable thickness and containing a high percentage of iron.

The lower lying country is for the most part covered by soil of no great depth.

Ore deposits.—The line of lode which runs through the New Reefers, Golden Zone, and Napoleon Leases, is of different character to the formation of the central and eastern portions of the map. It is composed chiefly of silica, which has metasomatically replaced the country rock along a line of shearing. It averages from two to four feet in width.

* Lands Department Lithos., 52/300, 61/300 and 71/300.

† Lands Department Lithos., 52/300 and 61/300.

‡ The existing leases at Collavilla are on the granite area to the West of the main greenstone belt.

‖ Lands Department Lithos., 61/300.

§ Geological Survey Bulletin No. 39, Perth : By Authority, 1910.

The main formation which runs through the Mystery and adjoining leases consists chiefly, in the oxidised zone, of kaolinic material, and is of considerable width ; it contains numerous veins and stringers of quartz striking across the lode, which generally carry values. There is also a series of flat tourmaline-bearing quartz veins which as a whole, are non-auriferous. Stringers and lenses of ironstone are common in the oxidised zone. It is possible that much of the gold in the upper levels is of secondary origin.

The Kapai or eastern line of lode is closely associated with one of those haematite-quartz rocks generally known as " jasper bars " which are so common on these goldfields.

But little gold is found in the haematite-quartz rock itself, the best values being obtained from cross leaders of quartz running roughly at right angles to the " jasper," and also in kaolinic material on the walls of the latter generally on the Western side.

As in the case with the Mystery line of lode, the Kapai line appears to owe much of its gold contents in the oxidised zone to secondary concentration, and neither appear to present the same possibilities at depth as the Western line.

The fieldwork in connection with the second section of the work was commenced on the 8th August. This section will complete the detailed examination of the North End of the field. Since the above date, my attention has been mainly devoted to the mapping of surface features generally.

This portion of the work was completed early in December, and the examination of the underground workings was then commenced.

The Country between Kalgoorlie and Coolgardie.

With the object of linking up mining centres, Mr. Honman mapped, in a more or less broad way, an area between these two centres, and brought several important facts to light. This officer summarises his work in the preliminary report which is as follows :—

A—Binduli mapped in detail, comprises an area of 16 square miles, extending two miles north of Binduli Railway Station, and three miles south of the same, and in an easterly and westerly direction from the Kurrawang conglomerate ridge, to within four miles of Kalgoorlie. Mr. C. G. Gibson, a former officer of the Survey, has already mapped the area in a broad way, and his classification of the rock areas is entirely confirmed by the detail work done last year. Mr. Gibson divided the rocks into two groups, viz. :—Porphyries and Sedimentaries. The Sedimentary Rocks occupy a considerable area of the country under review, about eight square miles. The topographical features compose a conglomerate ridge bearing 340° and running across the Coolgardie road at 16 miles 30 chains from Coolgardie, also a ridge of massive porphyry and schists bearing 325° to 330° crossing the railway line near the Binduli Railway Station. The general slope of the country is to the South where it terminates in breakaways and salt lakes. Two miles north of the Railway Station the country attains its highest elevation, and is very sandy ; it falls very gradually northwards for many miles, and culminates in salt lake country ; it consists of sand covered with mallee and spinifex.

The office work is not as yet far enough advanced for the formation of any final conclusions as regards the geological structure and history of the area, but the following features are brought out by the field work :—

The strike of the bedding planes does not necessarily coincide with the strike of the schistosity or cleavage.

The presence of conglomerate schists and slates in the porphyry area. The slates are apparently interbedded with the schistose porphyry.

The sedimentaries outside and west of the porphyritic area have a consistent dip to the west at a high angle, which becomes more pronounced in a westerly direction.

The conglomerate formation is persistent right across the area and the conglomerate series is at least half a mile thick.

There are two systems of fissuring in which quartz veins have formed :—

(*a.*) Vertical coinciding with shear and cleavage planes caused by pressure at right angles to the strike of the cleavage.

(*b.*) Flat, though with a slight southerly ; the fissures are small and discontinuous

The quartz veins occur both in the schists and the massive-porphyry. In both they have been found to carry gold which from report averages about 10dwts. to the ton, but the veins are small and the porphyry is too hard to enable them to be worked profitably.

B.—*An area between Coolgardie and Kalgoorlie.*—This comprises 350 square miles and has been mapped broadly with the object of bringing out the structural relations of the different rocks.

The topographical features are controlled by the geological formations. The greenstone areas which occupy about 100 square miles are characterised by hilly country composed of long rugged hills with their longer axes coinciding with the dominent strike of the rocks which varies from 300 deg. to 340 deg. The granite and porphyry areas compose prominent rises characterised by flat-topped bosses of granite and porphyry. The sedimentary rocks with the exception of the conglomerate and quartzite occupy the depressions and flanks of the ridges. The conglomerates north of the lake which stretches from near Boulder towards Coolgardie form two well defined parallel ridges which are two miles apart and represent the eastern and western legs of the huge syncline. These encroach on the lake country which extends for about 14 miles in a south-westerly direction from M.H.L. 47E to within 7 miles of Coolgardie. This lake is separated from Hannans Lake by a prominent greenstone ridge and it is three miles wide in places. The northern margin of the lake is bounded by breakaways which in places exhibit excellent geological sections, while the southern edge is composed of sandhills and a white powdery deposit locally known as " Copi." The area comprises four main groups of rocks :—Sedimentary, Greenstone, Porphyry, and Granite.

No opportunity has yet occurred of definitely working out the relative ages of the respective rock groups, but when the necessary office work is more advanced the facts observed in the field can be properly studied and correlated. At the present stage the following statements can be provisionally made :—

An important syncline exists between Coolgardie and Kalgoorlie about 8 miles wide, the axis of which is very close to the Kurrawang Railway Station. The syncline has a strike of 340 deg. and if anything pitches very slightly to the North. The presence of this syncline suggests that the country is composed of big folds whose bedding planes have been destroyed by great lateral pressures producing schistosity and cleavage.

The Binduli porphyries persist with an almost uniform width for 24 miles passing through Wongi and are associated with sedimentary beds.

The conglomerates can be followed for over 15 miles along their strike.

Where the porphyries abut the greenstone rocks to the east they contain large phenocrysts of orthoclase which weather out in perfect crystals up to 1½ inches long.

Greenstone bands occur in the sedimentary rocks close to Mungari Railway Station, which make into a larger greenstone formation to the South striking 340 deg. and becoming wider while connecting with the greenstone area of which Mt. Herbert and Mt. Marion form prominent hills in the Hampton Lands and Railway Syndicate's Location 53.

Granite is intrusive into the sedimentary series and has transmuted those in close proximity into micaceous and chiastolite schists. This has given the Coolgardie rocks a strike bearing more to the west of north than the main sedimentary area. It is probably to this intrusion that the highly metamorphosed state of the sedimentary rocks and the great abundance of tourmaline in the whole area is primarily due.

A greenstone area occurs at the western end of location 53 and is probably continuous with that at Coolgardie.

A study of the conglomerates in the field shows conclusively that the bedding of the rocks is independent of the schistosity or cleavage, the elongation of the pebbles corresponding with the latter.

The whole area is intensely metamorphosed resulting from lateral pressure exerted in an easterly and westerly direction, and accentuated, if not actually caused, by the granite intrusions at the 8-Mile on the Coolgardie Road and at the Water Reserve 2956 in Location 53.

Petrological Work.

A brief synopsis of the results of the Petrologist's work during the year is given in his own words below :—

Most of the results of the year's work in detail either are now in the press or have already been issued in Bulletin form. Little more, therefore, is called for in these pages than a brief statement of the broad facts elicited in the examination of the rocks from the various districts. The more important localities from which specimens have been collected during the year are as follows :—

The North Coolgardie and East Murchison Goldfields.
The Kanowna Main Reef Line.
The North End Kalgoorlie Field.

Ora Banda.
Coolgardie, Mount Monger, and Gibraltar.
Marble Bar.
The Binduli and Kalgoorlie Area of Mr. Honman.
Southern Cross.
The Oroya Black Range Gold Mine.

North Coolgardie and East Murchison Fields.—The majority of the rocks from this district, as described in Bulletin 45, are epidiorites or amphibolites of which, while some bear no trace of original structure, others indicate clearly from the presence of ophitic structure, an igneous origin from doleritic or gabbroid rocks. Since the absence of definite structure in some hornblendic rocks is common in areas that have undergone strong dynamic metamorphism, it is probable that all described are of igneous origin.

For economic reasons, these outcrops deserve careful prospecting, for consideration of many other fields in the State has shown that auriferous formations occur both as quartz reefs in amphibolite or more altered rock and as lodes in the altered zones near the contact of the greenstones with, commonly, the granite.

There occur also a somewhat sugary quartzite, a ferruginous quartzite without banding and a mica schist. To these, though the clastic structures have not been certainly identified and the field evidence of the relationships of the rocks is necessarily small, it is probable that a sedimentary origin is to be assigned. A serpentine with silvery biotite has also been described from the district (*see* Bull. 45).

Kanowna Main Reef Line.—As will be seen by reference to Bulletin 47 already published, the rocks of this area are of several kinds :—(*a.*) Greenstones that have all been more or less completely altered chemically and probable dynamically with the production of talc, chlorite, sericite, magnetite, quartz, and ferriferous and other carbonates. In most cases the alteration has proceeded to such a degree that all traces of original structures have been obliterated. The secondary minerals, however, which usually include talc, chlorite, ferriferous carbonate, some iron ores and brown-yellow rutile suggest an origin from basic igneous rocks.

The green fuchsite-magnesite-quartz rock that I have already described from Meekatharra is well developed in the area, but, as before, there is not sufficient evidence to enable any definite pronouncement to be made as to its origin. It is noteworthy, however, that recently at Meekatharra in the Ingliston Extended Mine a white quartz reef is being worked at a profit in this rock.

(*b.*) The dyke rocks.—These include quartz-porphyries of slightly differing varieties and an albite-porphyrite. Of the former some are fresh, others to a greater or less extent carbonated, and in some cases so altered as to possess but few original structural characters. Evidence of earth-movements over the area subsequent to the consolidation of the rocks is afforded by striated and slickensided surfaces on the specimens, by undulose extinction and cracks in individual crystals. Especially worthy of mention are two specimens with xenolithic enclosures ; both are more or less normal quartz-porphyries, one with an enclosure of a green chromiferous schist-illustrated in Bulletin 47, page 40—the other with small patches of greenish chloritic material which proves to be closely similar in structure and composition to the albite porphyrite that occurs in the field. There is another specimen with soft greenish spots, the origin of which is fully discussed in the text of the Bulletin.

The albite-porphyrite has been described from this field for the first time.

(*c.*) There are a number of rocks not classified on account of the impossibility of obtaining even relict structures. Further information with regard to these will be found in Bulletin 47.

North-East Kalgoorlie.—The importance of the survey of this area, lies in the fact that there is being gained in a less altered portion of the Kalgoorlie field information that must be of great value when the more chemically and mineralogically altered portions come to be considered. As shown in Bulletin 51, the main points which have emerged from an investigation of this area are these :—

The earliest rocks, and those that form the greater portion of the area, are greenstones, which comprise masses of doleritic or gabbroid type, others of amphibolite without doubt derived by extreme dynamic metamorphic action either from the former or from similar rocks, and talc-chlorite rocks which probably represent the extreme phase of chemical and dynamic alteration both of the dolerite and of the amphibolite. The movements which contributed to the production of the hornblende of the amphibolite from the augite of the dolerites or gabbros not only produced a shearing in the rocks themselves, but developed actual fissures in the rock masses in two series at right angles. Along several lines, moreover, the shearing and crushing stresses were probably greater than along others, with the result that distinct lines of weakness were produced in the rocks.

At a later date, along these lines and various fissures in the mass, there were intrusions of a highly acid dyke rock rich in soda and with frequent hornblende phenocrysts—on albite-porphyrite or quartz-keratophyre. A peculiar feature of the latter is that it possesses in places distinct xenolithic enclosures of chloritic schists, between which and the enclosing rock there does not appear to have been any sensible assimilative action.

Accompanying the acid intrusive were boric vapours which not only caused the production of tourmaline in the keratophyre and in the quartz leaders, but which in association with other gasses exerted a pneumatolytic action on the surrounding rocks.

There is evidence of distinct secondary enrichment in the lodes, a feature which, however, Mr. Feldtmann has enlarged upon in the Bulletin on the area.

Ora Banda.—From such an examination has as already been made of the rocks from this locality, the main types prove to be :—Serpentine, a fresh hypersthene-gabbro or norite, hornblendite, amphibolised dolerite, zoisitised dolerite or gabbro and the so-called "native cat" rock. This latter has a green, rather fine-grained base with irregular yellowish white patches composed of granular epidote, zoisite, and some clear albite. The rock has a porphyritic appearance and has been put down as a saussuritised gabbro. That there is a true porphyritic facies, however, I discovered recently when examining a dump on the mine. There I obtained specimens, the counterparts of which had not been forwarded by the Field Geologist. These showed large dark-coloured fairly fresh idiomorphic felspars in a ground-mass of epidote, calcite, chlorite, etc. In most cases the felspars were in process of decomposition to epidote and other minerals. The rock may, therefore, be put down as a saussuritised gabbro-porphyrite. The amphibolised dolerite is identical with that from the North End Kalgoorlie.

Some secondary silicification appears to have taken place in the area, for specimens have been obtained of brown quartz and chalcedonic silica enclosing greenish chromiferous chlorite.

Marble Bar.—These specimens consisted chiefly of serpentine and opal serpentine.

Coolgardie, Mount Monger, and Gibraltar.—A large number of rocks were collected from these localities. The specimens include amphibolite, garnet and biotite-amphibolite, hornblende-schist, hornblendite, epidorite gabbro, norite, hornblende gneisses, granite, aplite and pegmatite, quartz-porphyries and porphyrites, mica gneiss, graphitic schist, sericite schist and banded ferruginous schist.

The amphibolitic varities are essentially similar to those that have been described in the Bulletin on Southern Cross. The granites vary from the normal yellowish-grey type, through hornblende granite to gneissose hornblende-granite, and in the normal type veins of aplitic and pegmatitic modifications appear to be not uncommon. The gabbroid or doleritic rocks include a saussuritised amphibole micropegmatitic quartz dolerite, a saussuritised quartz gabbro and an ophitic quartz dolerite, some specimens being identical again with the amphibolised quartz dolerite from the North End Kalgoorlie and other places.

A fresh norite occurs in dykes, exactly similar to that described from Cue, from Ora Banda, and from other localities in the State. The porphyritic rocks comprise quartz-porphyries of several varities, and some specimens of more basic composition with silica slightly under and slightly over 60 per cent., which have been put down as quartz-porphyrites.

One porphyry specimen is closely akin to Spurr's alaskite, described from the Yukon district in Alaska, and, as in many places, this alaskite is gold-bearing, being one of the final stages in the development of gold-quartz veins from granitic rocks, it may repay the attention of prospectors.

There are some examples of schistose or foliated rocks—discussed in the Bulletin on the district—which may possibly be of sedimentary origin derived by consolidation and foliation from arkoses siliceous sediments in the basic detrital material.

Binduli, etc.—The collection so far examined from Binduli and the vicinity, consists mostly of the following groups of rocks :—(*a*) acid porphyries generally pinkish in colour, and varying from felsites with felspar phenocrysts to rocks which agree in character with granite porphyries ; (*b*) basic rocks of doleritic type ; (*c*) a peculiar group of highly schistose green rocks, mostly altered to a considerable extent. In certain cases—of the more highly schistose and altered varities—these latter specimens are practically indistinguishable from altered sheared porphyrites, but in one specimen, the characters are entirely consistent with the origin from a quartzose-felspathic-chloritic sediment that has been very considerably sheared. The felspar shapes are mostly angular, the quartz crystals are partly angular and partly rounded, frequently cracked. When account is taken of the fact that Mr. Honman has proved the presence in the

area of large developments of conglomeratic beds, of contact altered sediments now represented by chiastolite schists, mica schists, etc., there is no room for doubt that this specimen is a much sheared arkose or fine-grained chloritic conglomerate. It is highly probable, also, that the other very similar green schists are but more severally altered phases of the same rock.

One important feature of the felsitic pink porphyry of group (*a*) is the fact that there occurs a sheared sericitised modification of it, in many respects almost identical with the so-called "fish rock" of the Golden Mile. It will be remembered that Card, in a careful study of some of the Kalgoorlie specimens, came to the conclusion that one of the original rocks of the field was an acid intrusive, and I am at present strongly of the opinion that this pinkish porphyry with few quartz phenocrysts is the rock which, passing through the sheared sericitised phase in which original structure is fairly plain, appears as the sericite-quartz-carbonate rock of the Golden Mile.

Southern Cross.—The oldest series of rocks in this field appear to be hornblende schists, etc., and the sedimentary rocks near Hope's Hill. Whether the latter are younger or older than the former, there is at present no means of discovering, but there is a presumption in favour of the younger age.

Before the movements took place, which affected the greenstones, there was an acid intrusion into the latter represented now by small foliated quartz porphyry dykes. Then came a large batholitic intrusion of granite which probably caused the contact metamorphosism of some sediments with the production of garnetiferous phyllite and mica schist. Great movement then seems to have taken place in the greenstone area and the effect of it extended some distance into the granite mass. Apophyses of the granite penetrated the greenstones with the production of pegmatite dykes, and granitic quartz reefs. The granite is the normal yellowish-gray biotite microcline granite, seemingly similar to the old Granite of South Africa. There is indubitable evidence that most, if not all the greenstones are but modifications by pressure and heat of rocks of doleritic and gabbroid origin, and though St. Smith makes two series of greenstones, the the Older and the Newer, the latter may be merely a zone of the older series that has been less strongly affected by dynamic action. An origin of one or two of the specimens of the older series from volcanic ashes is at least possible.

The auriferous reefs are found mostly in the schistose or older greenstones, the pegmatitic and quartzose opophyses of the granite being non-auriferous. The area is dealt with fully in Bulletin 49.

Oroya Black Range.—The examination from specimens from this district has been worthy of note owing to the proof obtained of the existence of a doleritic basalt in the andesitic and glassy phases at Sandstone, identical with that in the Great Fingall Mine at Day Down. The rock occurs in each case as a dyke, and is probably the youngest rock in the field, being younger even than the lode formation.

I have, etc.,

A. GIBB MAITLAND,

Government Geologist.

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INDEX—*continued.*

The Hon. P. Collier, M.L.A.
Minister for Mines.

MAP OF
WESTERN AUSTRALIA

Showing
4 Mile to 1 Inch Series of Geological Sketch Maps.
Annual Report 1912.

Scale of English statute miles.
50 40 30 20 10 0 50 100 150 200

EXPLANATION

Published ..... shown thus ...
Field Work completed ..... „ .....
Field Work in progress ..... „ .....

NOTE. The numbers on the maps correspond with those of the 300 chain per inch series issued by the Department of Lands & Surveys.

111 W. PILBARA G.F.
110 PILBARA
109
108
113
112
115
114
97 E. PILBARA G.F.
98
99
GOLDFIELD
39
42
NORTH
35
YILGARN
24
80
81
71
70
60
61
EAST MURCHISON
53
52
7

BUCCANEER ARCHIPELAGO
DAMPIER ARCHIPELAGO
KIMBERLEY
HALL'S CK
WYNDHAM
ONSLOW
ASHBURTON
GASCOYNE
PEAK HILL
MURCHISON
YALGOO
COOLGARDIE
DUNDAS G.F.
PHILLIPS R.
MT MARGARET
NTH EST COOLGARDIE
ARCHIPELAGO OF THE RECHERCHE
THE GREAT AUSTRALIAN BIGHT
INDIAN OCEAN
SOUTH AUSTRALIA

Tropic of Capricorn

Cable from Singapore
Cable from Banjoewangie
Mail Steamers from London
Interstate Steamers to Adelaide
Mail Steamer Route to Adelaide

Longitude 121° East of Greenwich.

A Gibb Maitland
Government Geologist

J.M.K.

H.J. Pether, Government Lithographer, Perth, W.A.

DIVISION V.

SCHOOL OF MINES OF WESTERN AUSTRALIA.

DIRECTOR'S REPORT.

The Under Secretary for Mines.

School of Mines,
Kalgoorlie, 18th March, 1913.

I beg to forward, for the information of the Hon. the Minister, my report for the year 1912.

Class work in all subjects has been maintained up to the standard of previous years, and although the attendance during the first term showed an appreciable decrease, the falling-off in numbers during the year was smaller than usual, and at the end of 1912 there were as many individual students in attendance as at the end of the previous year. The fact that on the average the students attended more classes and gained a greater number of passes at the examinations than formerly is a very encouraging feature of the work of the year just completed. There has been an increase in the number of students in attendance at the Preparatory Classes, and a higher percentage of these students have obtained certificates.

The extra support given to the Preparatory Classes, which lead directly up to the regular class work of the School, shows that the importance of obtaining a sound knowledge of the underlying principles before proceeding to the work of the Associateship courses is being recognised to a greater extent, and augurs well for the future.

Owing to the erection of class-rooms for Elementary Science at two of the State schools in the district, the Science Classes in Physics which were formerly conducted at the School of Mines for the benefit of State school scholars have been discontinued.

A noteworthy addition to the School equipment is the Suction Gas Producer Plant and Experimental Engine, the erection of which was completed at the end of 1912, and which will be in readiness for the new year's class work. The Producer is constructed to burn charcoal, and is provided with all the necessary appliances for purifying the gas. The 13½ H.P. Experimental Engine has been specially constructed for experimental purposes, and is specially fitted with the valve gear and fittings usually found only on larger engines. By means of this equipment students will be made familiar with the theory, construction, and operation of Producer Gas Plants, and will have opportunities of studying the comparative economy of fuels and gases, and of making engine tests under various conditions.

The Plant has been erected under the direct supervision of the Lecturer in Mechanical Engineering, and has been installed at a minimum cost, and constitutes a most valuable addition to the Engineering equipment.

Already a considerable number of inquiries have been received from students desirous of taking a special course of instruction in Gas Engine practice, and a short course of lectures and practical work has now been outlined which will give students very valuable instruction and enable them to gain a certificate covering the class work through which they have passed.

In the Assay laboratory an electrically driven sample crushing plant has been erected and has already proved of great utility in reducing the time and labour involved in the preparation of assay samples.

Under the system by which the School makes free assays of material obtained from Crown lands not held under lease for mining purposes, a considerable amount of useful information has been given to prospectors. During the year these free assays and mineral determinations reached a total of 511, made up as follows:—

Assays for gold and silver	434
Assays for Copper	25
Determinations of rocks, minerals, etc.	52
	511

The assays and mineral determinations have all been made by responsible members of the staff, who have spared no pains to insure accuracy in the results and to give full information to the prospectors.

The Museum has been kept open to the public on each afternoon throughout the year, but Sunday is the chief day for visitors. It is to be regretted that during the year some of the larger samples of mine ore, valuable as specimens but of small intrinsic value, were stolen at night. This is the second occasion on which the Museum has been broken into, and it has been found necessary to appoint a night watchman.

A tabulation made of the occupations of the students enrolled during the first term of 1912 shows that 50 per cent. of the students are engaged on the mines, approximately 38 per cent. are in offices or industrial works of various kinds in Kalgoorlie, Boulder, and the surrounding district, while the remainder are scholarship students and others devoting their whole time to study. The School offers to those who do not intend to engage in mining pursuits opportunities of gaining a considerable amount of scientific know-

ledge which will prove of great value to them in many directions, but it is a distinctive feature of the School that a high percentage of its students are actually connected with the mining industry, and that the majority of the others who have not yet entered upon a mining occupation are studying with the object of doing so as soon as opportunity offers.

Many of the students attracted to the School bring with them to the lectures a wide experience of the practical operations of mining, and so make rapid progress. They are quickly able to improve their positions outside, and there is a constant demand for men trained at the School. In addition to the local positions of smaller value held by students of this School, the following more important appointments have been made during 1912:—

M. F. Burrows, Metallurgist and Surveyor, Whim Well Copper Mine, N.W. Coast.

R. Banks, lately Assayer and Surveyor, Royal Standard, now at Mt. Morgans.

W. E. Davies, Engineer of prospecting parties, Nigeria, West Africa.

J. Gabel, Surveyor, Taquah Exploration Company, Ashanti, West Africa.

The Annual Demonstration was held somewhat later than usual—on March 21st. His Worship the Mayor (Mr. C. Cutbush) presided, and was accompanied on the platform by the Hon. T. Walker, Minister for Education; Mr. R. D. McKenzie, M.L.C.; the Director, Mr. F. B. Allen, and the Assistant Director, Mr. T. Butement.

The Mayor referred to the good work done by the School in the past, he expressed his faith in its continuance and urged the students to take every advantage of the opportunities of advancement now being afforded. The Director described the manner in which the Preparatory Classes were linking together the work of the State schools and that of the School of Mines, and made reference to the proposed extension of the Engineering equipment by the addition of a producer gas plant and an experimental gas engine. The Minister for Education then gave an interesting address in which he made mention that he had been commissioned by the Minister for Mines to say that the School would receive as liberal treatment as the finances would permit, and he expressed his high appreciation of the efficiency of the School and the high standard of instruction maintained. As a member of the Senate of the University, he assured the students that the School would in no way be dwarfed but that its good work would be recognised by the higher institution. The agricultural and mining industries could work side by side, and it behoved the State to foster scientific education in order that the wealth of the country might be developed.

The ninth Annual Dinner of the Students' Association was held on Saturday, December 7, 1912. The President, Mr. C. A. Hendry, occupied the chair, and among those present were the Resident Magistrate (Mr. W. A. G. Walter), Mr. R. D. McKenzie, M.L.C., Mr. A. E. Green, M.L.A., the General Manager of the Golden Horseshoe (Mr. J. W. Sutherland), the General Manager of the Ivanhoe Gold Mine (Mr. R. B. Nicholson), the General Manager of the Chaffers Gold Mine (Mr. J. Boyd Aarons), the Inspector of Mines, Mr. J. O. Hudson, the Editor, *Kalgoorlie Miner* (Mr. E. H. Irving), the Superintendent, Boulder Technical School (Mr. J. F. Lynch), the Acting Director (Mr. T. Butement), and the Staff of the School. Apologies were received from the Hon. P. Collier (Minister for Mines), Mr. R. Hamilton, and Mr. R. S. Black, and from Mr. F. B. Allen, the Director, who was in England.

During the evening a suggestion was made by Mr. Sutherland that an experimental laboratory for metallurgical work should be provided in which tests might be made in the direction of the reduction of treatment costs, and this received the support of subsequent speakers.

THE WORK OF THE SCHOOL.

The School of Mines was established in the first place to give instruction to those engaged in mining occupations. Laboratories have been equipped, and the classes arranged so as to give a thorough technical and practical training in Mining, Metallurgy, and Engineering.

In addition, the School offers to youths who do not intend to engage in mining pursuits, many opportunities of gaining some secondary education before they enter upon the serious business of life. The Preparatory Classes are very suitable for boys of 14 years and upwards who have just left the State schools, and afford an introduction to Science which will be of great value to these youths whatever may be their future occupations. The advanced classes will enable students to obtain a training in the earlier portions of a University Course, and when by affiliation of the School of Mines with the University of Western Australia work done at the School of Mines receives recognition, considerable benefit will result to the students resident on the goldfields.

The general work of the School embraces Courses in Mining, Metallurgy, and Engineering, in each of which students may gain an Associateship. Mathematics, Chemistry, and Physics, which enter into each of the courses, form the foundation upon which the work of the School is built, and the departments of Mining and of Metallurgy, the ones first inaugurated, possess very complete equipments in laboratories and apparatus. A thorough training in theory and practice has thus been provided which has enabled students to qualify themselves to occupy responsible positions.

The Engineering Classes, developed at a later date, are now well organised and form a very important section of the School work. A practical course of instruction has been arranged in Electrical Engineering. The rapidly increasing demand for the electrical driving of sections of mining and manufacturing plants and for the reduction of maintenance costs, requires that the student should be thoroughly familiar with the various classes of machines and their operation under all conditions of load, and tests dealing with the efficiency, regulation and registration of the machines and instruments used in the electrical distribution of power are regularly conducted by the students as part of their course work.

Twelve months ago a Mechanical Engineering Laboratory was erected and equipped with an experimental engine, a boiler, a surface condenser, an absorption dynamometer, steam engine indicators, a Carpenter's calorimeter, and all the necessary appliances for the determination of steam consumption, mechanical efficiency, and the conditions for maximum economy. In all large mining centres the question of economy in power production, leading to the reduction of working costs, is receiving increased

attention, and it is of the highest importance that the mining engineer should possess thorough knowledge of all questions bearing upon the economical running of the engines under his charge, and also that he should be able to locate and remedy defective conditions which lead to losses in actual practice. Students of the School are given practice in taking indicator diagrams, in testing the quality of the steam by means of the steam calorimeter, and in carrying out actual working tests on efficiency, which, together with periodical visits to the engine rooms of the mines, will give the students a thorough grounding in the fundamental principles of mechanical engineering.

During the year a gas producer plant has been installed, and special classes dealing with the theory and practice of gas producer plants will now form a feature of the School work.

The classes in Geology, Mineralogy, and Petrology, which form an essential part of the Courses in Mining and Metallurgy, have been suitably provided with apparatus and material, and the Museum contains representative collections of rocks and minerals which are set out in such a way as to be of educational value to the students and a source of interest and instruction to prospectors and the general public.

To meet the requirements of those who are unable to undertake a full course for an Associateship, partial courses have been arranged in several sections of the School work.

The Scholarships offered by the Mines Department fully meet the requirements of the local students and also afford youths resident outside of the Kalgoorlie district facilities for attending the School and obtaining a training in School of Mines subjects. The School has been fortunate in securing valuable gifts of prizes and scholarships from those interested in the work of the institution, and the mine managers have afforded students every opportunity of gaining practical experience in the mines and batteries, and have shown their appreciation of the work of the School by their readiness in giving employmeut to the students.

The students continue to secure responsible positions, which in many cases have been obtained directly as a consequence of the technical training given at the School, and the fact that the students who have been through a set course of study at the local School of Mines are so well able to take their place in outside practice is encouraging to the younger students and is a good criterion of the standard of instruction maintained in all the courses.

The students have an active Students' Association, a Science Society, a School Magazine, and several Sports Clubs, all of which have been instrumental in binding together students who otherwise do not often come into very close contact with one another.

Practical Classes.—As far as possible, prominence has been given to practical work in connection with School classes. Students have excellent opportunities of gaining practical experience in Chemistry, Assaying, Metallurgy, and Engineering in the well equipped laboratories. Models for the Mechanics, Engine-driving, and Mining classes, suitable collections of rocks and minerals for the Geology and Mineralogy classes, and instruments for the Surveying class, enable the lecture work to be thoroughly well demonstrated. A special testing room has been set aside for Practical Electricity, while increased accommodation has been provided for the practical classes in Physics. Field practice in Surveying is regularly carried on throughout the year, and in Geology the students make periodical excursions into the country and so gain a fuller understanding of the class work as well as an intimate knowledge of the geology of the district.

Examinations.—The examinations held annually in connection with the Diplomas and Certificates issued by the Mines Department are conducted by Co-examiners appointed by the Minister for Mines. The appointment of outside examiners for the written papers has tended to maintain a high standard of work at the School. The practical examinations, covering the whole work of the students throughout the year, as well as the final test questions, are left in the hands of the staff.

Under the system by which the School makes Free Assays of material obtained from Crown lands not held under lease for mining purposes, a considerable amount of useful information has been given to prospectors. The assays and mineral determinations have all been made by responsible members of the staff, who have spared no pains to ensure accuracy in the results and to give full information to the prospectors.

A demonstration of students' work takes place usually at the commencement of the first term, and the Annual Dinner is held by the Students' Association regularly at the close of the School year.

Throughout the year the Assistant Director and the members of the School Staff have rendered excellent service, and the thanks of the Director are due to them for their cordial co-operation in the proper conduct of the work of the School.

During my visit to Great Britain and the Continent, in the latter half of 1912, I visited a number of Schools of Mines and kindred institutions, and gained an insight into the methods there adopted which will be of assistance in directing the destiny of the local School of Mines.

I have, etc.,

F. B. ALLEN,
Director, School of Mines.

DIVISION VI.

OPERATIONS OF THE "INSPECTION OF MACHINERY ACT, 1904."

Office of the Chief Inspector of Machinery,
Treasury Buildings,
Perth, W.A.

ANNUAL REPORT OF THE CHIEF INSPECTOR OF MACHINERY AND CHAIRMAN OF BOARD OF EXAMINERS FOR ENGINE-DRIVERS FOR THE YEAR ENDING 31st DECEMBER, 1912, WITH STATISTICS.

The Under Secretary for Mines, Mines Department, Perth.

Sir.—

I have the honour to submit, for the information of the Hon. the Minister for Mines, the following report on the operations of the "Inspection of Machinery Act, 1904," in the districts proclaimed thereunder, together with statistical tables for the year ending 31st December, 1912.

The operations reported on will be dealt with under the following divisions:—

(1.) Inspection of Boilers.
(2.) Inspection of Machinery.
(3.) Machinery accidents to persons.
(4.) Engine-drivers' Examinations, and enquiries.
(5.) General.
(6.) Extracts from Inspectors' Reports.

DIVISION I.

Inspection of Boilers.

The number of useful boilers on the registers at the end of the year was 2,992, showing a decrease of eight (8) as against last year's figures. The decrease is wholly accounted for by the writing off the registers of fifty-six (56) boilers. Forty-four of these were condemned permanently, six were converted into tanks, etc., and six were sent out of the State. There were forty-eight (48) new registrations, and the difference between the 56 written-off registers and the 48 new registrations accounts for the decrease of eight.

New Boilers Registered.

Forty-eight (48) boilers were registered during the year, and this is the smallest number of new registrations recorded for several years past. The boilers comprise the following:—Water Tube five (5), Locomotive seven (7), Locomotive (portable) eight (8), Locomotive (stationary) two (2), Cornish three (3), Return Multitubular Underfired two (2), Gas-fired Cylindrical Dish-ended three (3), Cylindrical Multitubular heated by waste gases from suction gas plant one (1), Vertical (stationary) fourteen (14), Vertical (portable) two (2), Digester one (1).

Forty-two (42) of the above boilers were imported from the United Kingdom, and two from America. The remaining four (4) were made in this State.

Boilers constructed in this State.

The four boilers constructed in this State consisted of three (3) Cornish, and one (1) Locomotive (stationary). These represent only 8.3 per cent. of the new registrations. As pointed out in previous years, I should like to see a much larger number of boilers made in this State, and although many of the types of imported boilers cannot be made here on account of patent rights, there is no reason why all of the small vertical boilers should not be locally made.

The following return shows the classification of the various useful boilers on the registers at the end of the year:—

RETURN No. 1.—*Return showing Classification of the various Types of useful Boilers in each District on 31st December*, 1912.

Types of Boilers.	DISTRICTS.											TOTAL.	
	South-Western.	Coolgardie and Yilgarn.	Dundas.	East Coolgardie.	North-East Coolgardie.	Broad Arrow.	North Coolgardie.	Mt. Margaret.	East Murchison.	Murchison, Peak Hill, and Yalgoo.	Pilbara and West Pilbara (Not proclaimed).	1912.	1911.
Lancashire	17	5	..	48	3	..	*9	9	3	19	..	113	114
Cornish	76	88	21	156	30	12	78	†86	68	114	..	729	735
Semi-Cornish	16	4	1	5	2	..	4	..	4	24	..	60	62
Vertical, Stationary	247	77	15	84	15	16	59	67	45	75	..	700	709
Do. Portable	59	4	..	2	..	1	2	..	..	7	..	75	74
Do. Multi-Stationary	21	1	..	11	1	..	1	2	3	4	..	44	45
Do. Multi-Portable	10	..	..	..	..	..	1	2	..	..	..	13	14
Do. Patent Tubular	6	..	..	..	..	..	..	..	..	..	..	6	6
Loco. type, Rectangular Firebox, Stationary	58	15	1	15	4	5	6	9	4	13	..	130	133
Loco Type, Rectangular, Firebox, Portable	256	16	6	15	4	..	5	7	4	13	..	326	334
Loco. Type, Circular Firebox, Portable	127	1	..	2	..	..	1	..	..	..	..	131	127
Locomotive	61	10	..	12	3	..	..	8	6	3	..	103	96
Water Tube	97	18	3	109	..	..	3	20	10	..	..	260	254
Return Multitubular, underfired, Stationary	70	16	2	43	3	4	7	5	7	9	..	166	171
Return Multitubular, underfired, Portable	1	3	..	3	..	1	1	..	..	2	..	11	11
Return Multitubular, internally fired, Stationary	28	4	..	3	1	..	..	1	..	7	..	44	42
Return Multitubular, internally fired, Portable	1	..	..	..	..	..	..	..	..	1	..	2	2
Egg-ended and other types not elsewhere specified	15	9	..	4	..	1	..	..	..	1	30	60	53
Digesters	16	..	..	3	..	..	..	..	..	..	..	19	18
Total Registrations useful Boilers	1,182	271	49	515	66	40	177	216	154	292	30	2,992	3,000
Useful Boilers out of use on 31-12-12	300	151	25	241	48	32	104	130	93	218	..	1,342	1,347

* Including four underfired Lancashire Boilers.

† Including two Hooker's Patent Cornish.

Operations in the various Districts.

From Return No. 2 it will be seen that the number of thorough inspections made is sixty-two (62) less than during the previous year, and the number of working inspections is ninety-five (95) more. The shrinkage in thorough inspections occurs in the Goldfields districts. In the South-Western District there is an *increase* of twenty-four (24) thorough inspections, and seventy-five (75) working inspections, as against last year's figures. The total number of inspections made in all districts, including thorough and working inspections, was 1,780, as against 1,747 during 1911, thus showing an *increase* of 33 inspections during 1912.

Of the total of 1,780 inspections made, 1,000 were in the South-Western District, made up of 848 thorough, and 152 working inspections. The total new registrations for the year amounted to 48, of which 40 were in the South-Western District. The work in this district in connection with boilers is, it will be seen, increasing considerably. A reference to Return No. 5, and Report for 1911, will show that the work of machinery inspection is also increasing rapidly in this district.

The total number of certificates granted was 1,595, as against 1,612 in 1911, showing a decrease of 17. As there was an increase of 39 in the number of certificates granted in the South-Western District, and an increase of 24 granted in Coolgardie and Yilgarn, that is 63 in all, it follows that there was a *decrease* of 80 in the other Goldfields Districts.

The number of boilers permanently condemned is again high. This, however, does not mean that there has been any undue deterioration during the year. The cause is fully explained later on under the heading "Boilers temporarily and permanently condemned."

The amount paid to Revenue from *Boilers* is £3,560 2s. 6d., as against £3,851 18s. 6d. in 1911, thus showing a decrease of £291 16s. The decrease in Revenue accruing from boiler inspections is due to:—

(a.) Slightly fewer certificates having been issued during the year than in 1911.

(b.) The fact that during 1911 certain sums earned during previous years, but not paid to Revenue through delinquencies, were credited to Revenue from a defalcation grant, thus unduly swelling that year's Revenue.

(c.) Inspectors explained that greater advantage than is usual was taken in the past year of the reduced fees for the inspection of two or more boilers examined at the same time, and they also state that many of the larger boilers have been out of use, and their places filled temporarily by smaller ones, with, of course, correspondingly smaller fees.

RETURN No 2.—*Return showing Operations in each of the Proclaimed Districts (Boilers only.)*

—	Districts.											Totals.	
	South-Western.	Coolgardie and Yilgarn.	Dundas.	East Coolgardie.	North-East Coolgardie.	Broad Arrow.	North Coolgardie	Mount Margaret.	East Murchison.	Murchison, Peak Hill, and Yalgoo.	Pilbara and West Pilbara (unproclaimed.)	1912.	1911.
Total number of boilers registered and capable of being used as steam generators	1,182	271	49	515	66	40	177	216	154	292	30	2,992	3,000
New boilers registered during the year ..	40	4	..	2	..	..	1	1	..	..	..	48	74
Inspections for year—													
Thorough	848	110	22	274	17	8	73	100	54	69	..	1,575	1,637
Working	152	5	8	1	1	..	13	11	7	7	..	205	110
Boilers condemned during year—													
Temporarily	54	..	..	..	..	..	4	8	4	..	..	70	62
Permanently	18	1	..	1	..	..	..	1	22	1	..	44	141
Boilers converted into tanks, air receivers, etc., during year	..	..	..	..	..	..	4	2	..	..	..	6	2
Boilers sent to other States during year ..	6	..	..	..	..	..	..	..	..	..	..	6	..
Number of notices for repairs issued during the year	264	19	..	25	3	3	16	16	16	21	..	383	310
Number of certificates issued including those issued under Sec. 30 during the year	827	117	24	274	18	8	73	100	71	83	..	1,595	1,612
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Total amount of fees for 1912	1,710 5 7	251 0 5	51 15 0	705 15 0	30 5 0	8 0 0	180 10 3	252 19 4	161 5 0	208 6 11	..	3,560 2 6	..
Total amount of fees for 1911	1,782 3 6	208 15 0	67 10 0	755 15 0	62 10 0	17 0 0	207 19 6	296 18 0	202 15 0	250 12 6	..	..	3,851 18 6
Number of Inspectors	3*			2			1		1†			7	7

* Assisted by Inspector Lee in Northam and surrounding district, and by Inspector Churchill in Northern part of South-Western Districts.

† Note—The work in this district has been divided between the Inspectors at Geraldton and Leonora.

The amount of fees outstanding at the end of the year was much smaller than it has been for some years. With very few exceptions, all outstanding fees were overdue only about one month. Every effort is being used to get in Revenue promptly, final notices being sent out in all cases where monies are due over a month.

Boilers Temporarily and Permanently Condemned.

During the year forty-four (44) boilers were permanently condemned as being unfit to use as steam generators. This number, though not so high as last year, is unduly large, and is accounted for by eliminating boilers which have been lying disused for years, waiting for repairs which the owners have now come to the conclusion it would not pay them to make. A large number of such cases has been dealt with, and such boilers have been written off as permanently condemned.

The number temporarily condemned during the year was seventy (70), as against sixty-two (62) in 1911. Many of these have since been put into commission, the necessary alterations having been executed.

The following Return shows the number of temporarily or permanently condemned boilers per 100 inspections made during 1912:—

RETURN No. 3.—*Showing number of Temporarily and Permanently Condemned Boilers per 100 Inspections made during 1912.*

Year.	Temporarily.	Permanently.
	Per cent.	Per cent.
1899	2·64	1·42
1900	2·21	·498
1901	4·35	·511
1902	5·00	·958
1903	2·43	·697
1904	3·08	·389
1905	2·84	·388
1906	3·98	·960
1907	4·36	·802
1908	3·18	·599
1909	2·89	·797
1910	4·49	1·382
1911	3·54	8·070
1912	3·93	2·471

Maintenance and Care of Boilers.

The interest taken in maintaining boilers in an efficient condition is, I am pleased to note, an increasing one. Owners are beginning to find that it does not pay to let their property deteriorate through neglect, and are realising that when repairs are necessary, it is the worst kind of economy to employ unskilled and amateur labour.

There are still a few instances where boilers are kept working 24 hours a day, and almost 365 days a year. Such instances chiefly occur in small successful gold mines, and the plea is that they are so busy getting gold that they cannot afford to stop for cleaning or proper overhaul. I am convinced that in almost every such case it would pay to obtain a spare boiler, or even stop the works entirely for an occasional day or two, rather than continue running as at present.

Bad feed water continues as a strong element of difficulty in the proper maintenance of boilers in this State. Much of the water in outlying goldfields is heavily mineralised, and boilers worked with such water require very frequent cleaning. In almost all such cases the installation of an efficient water treatment plant would be found economical. As I have repeatedly pointed out, the proper place to treat feed water is outside the boiler and not in it.

In this connection I might mention the case of one of our largest gold mines. The boilers, for years, were a source of constant trouble, anxiety, and expense. At last it was decided to instal a water treatment plant, and the work was duly carried out. There was at once a marked improvement in the condition of the boilers. Prior to the instalment there were constant repairs to be made, and the expenses in connection with cleaning were enormous. The District Inspector recently reported: "The condition of these boilers is now maintained so well that a matter of a month's extra running is immaterial. After seven months' run night and day, one of the boilers recently examined had little more than a little light dust on some new flue sections. This is an excellent illustration of economy due to properly treating feed water."

The great importance of clean heating surfaces, both internal and external, is not, I regret, generally recognised by boiler owners. The saving in fuel, with clean surfaces, as against dirty ones coated with soot externally, and deposit internally, is enormous, and is an item that boiler owners simply cannot *afford* to overlook. In spite of all this, however, the old practice continues in a large number of cases; many owners still run their boilers for periods far too long, considering the nature of the feed-water and the sooty deposit in the flues.

Explosions—Interesting Defects.

There is, I am pleased to say, very little to be recorded under this heading. I am again able to say there has been no explosion during the year. Many serious defects have been detected which might easily have led to an explosion, but they have always been discovered in time to prevent any serious consequences. These defects have been of the usual commonplace type, and call for no particular comment.

Four cases occurred during the year which present rather more than usual interest—

(1.) A portable boiler of locomotive type was being tested by hydraulic pressure after considerable repairs had been executed. When the pressure reached 120lbs., there was a loud report which appeared to come from the left side of the firebox. The pressure was maintained for about twenty minutes and nothing further happened. All flat surfaces were gauged, and no distortion was found. The inspector then proceeded to investigate the cause of the report, and found by sounding with a hammer, that three of the water space stays in the first vertical row of stays from the face plate were fractured. The probable cause of fracture was crystallisation of the metal, as the stays were not reduced by corrosion. The incident shows the importance of occasionally testing boilers of this class by hydraulic pressure. In my last year's report I referred to a similar occurrence during 1911.

(2.) A small vertical boiler on a Mill Pumping Station was found with the shell crown badly bulged. The boiler is of a very usual type, and was quite suitable for the pressure for which certificate was issued. The bulging undoubtedly occurred through considerable overpressure, though no evidence could be procured on this point. The defect was discovered by the Engineer of the Mill happening to notice that the safety valve was out of plumb, and on looking into the cause he discovered the bulging, and at once stopped the boiler. As no engine is attached to this boiler, it was not necessary to employ a certificated driver for it, and the man in charge could not, or would not, give any satisfactory explanation. If the pressure had been allowed to increase to a very slight extra extent, there would probably have been an explosion to report. Thanks to the Mill Engineer's observation, this was averted. The pressure gauge was found to be correct, and the fact of the attendant not noticing the great rise in pressure which must have occurred in order to produce the bulging shows much negligence on his part. I am of the opinion that both safety valves had been rendered inoperative, but sufficient evidence was not forthcoming to warrant a prosecution.

(3.) A locomotive boiler made by a well known English firm failed in a rather peculiar manner. The firebox tube plate was found bulged over a considerable area about the lower tubes. All tubes were beaded over and ferruled. On close examination being made, it was found that the beads all appeared perfect and ferrules were all in place. There was no appearance of "draw" at smoke box end. The bulging of the plate was therefore difficult to account for. The Inspector had several ferrules knocked out and found that in each case the beading came away with the ferrule, the tubes having fractured circumferentially about ⅛in. to ¼in. back of the beads. The case was an interesting one, inasmuch as we have no record of similar failure. The tubes were carefully examined and were found rather light, but of apparently good quality. Samples were submitted to the makers of the boiler for their inspection and explanation, but their reply has not yet been received.

(4.) The remaining case was also a locomotive boiler by the same makers. It failed in much the same way, and called for no further special remarks. Both boilers were effectively repaired.

Prosecutions under the Act.

The only prosecution during the year in connection with boilers was for non-payment of the inspection fee. Judgment was obtained.

No case has been reported to me of working boilers without a certificate, or of other infringement of the Act in connection with boilers, which would justify prosecution.

DIVISION II.

Inspection of Machinery.

From Return No. 4, showing the various sources of power-driving machinery in the State, it will be seen that the steam engine still holds its own, electric motors take second place, followed by oil engines (under which are classed many small petrol and benzine engines), suction gas engines, ordinary coal gas engines, compressed air engines, and machinery driven by hydraulic power in the order mentioned.

In the South-Western and East Coolgardie Districts the number of groups driven by electric motors is considerably in excess of the number driven direct by steam engines, and in the South-Western District the number of groups driven by oil engines is gradually approaching that of steam-driven groups.

During the year thirteen (13) new suction gas engines have been installed, and judging from the marked improvements in some of the newer plants, it appears likely that this power is destined to fill an important place in power producing in this State. Several of the "suction" or "producer" gas engines are now being run entirely on Collie coal, with an almost complete absence of trouble from tar. In some of the newer producers on the "down draught" principle, the tar trouble seems to have been completely eliminated, and engines working off such producers require very little cleaning and run very economically. The State is very fortunate in possessing coal which is so suitable for use in this class of engine.

With regard to oil engines in outlying country districts, the situation has not altered since last year, there being a large number still unregistered that it has been impossible to visit and inspect. The present staff is quite inadequate to keep up the work in connection with the older centres, and cannot attempt to do more than keep up the work in connection with the older registrations. As explained in last year's report, small oil engines are being very largely used by agriculturalists, and as a rule are not registered until an inspector finds time to visit the owner and point out to him the necessity of doing so. While work is so far behind-hand in connection with present registrations, nothing can be done in the direction of looking up new work.

RETURN No. 4.—*Showing Classification of the various sources of Power-driven Machinery in use or likely to be used again, in each District, for the Year ending 31st December*, 1912.

	Districts.										Totals.	
	South-Western.	Coolgardie and Yilgarn.	Dundas.	East Coolgardie.	North-East Coolgardie.	Broad Arrow.	North Coolgardie.	Mt. Margaret.	East Murchison.	Murchison, Peak Hill, and Yalgoo.	1912.	1911.
Number of groups driven by steam engines	539	123	35	134	19	10	94	116	106	102	1,278	1,390
Number of groups driven by oil engines	356	11	1	4	2	..	23	7	20	30	454	432
Number of groups driven by ordinary gas engines	75	..	..	..	..	..	..	..	..	..	75	60
Number of groups driven by suction gas engines	29	9	2	13	6	4	10	18	14	16	121	108
Number of groups driven by compressed air	..	4	..	19	..	..	..	..	..	3	26	24
Number of groups driven by electric motors	668	22	3	378	..	..	8	53	..	15	1,147	1,006
Number of groups driven by hydraulic pressure	12	..	..	..	..	..	..	..	..	..	12	16
Totals	1,679	169	41	548	27	14	135	194	140	166	3,113	3,036

Amongst the most interesting developments during the year are the following:—

(a.) The Kalgoorlie Electric Power and Lighting Co. installed a new Barometric Condenser, capable of dealing with 50,000lbs. of steam per hour. At the same place foundations are being put in for a new 750 K.W. Parson's Mixed Turbo generator, and foundations for a new 100 H.P. Parson's Turbine Engine direct coupled to centrifugal pumps for circulating water.

(b.) The old cast iron drums of the main shaft winding-engine at the South Kalgurli mine have been replaced by cast steel ones, thus securing greater strength, and doing away with much of the centrifugal action due to the old heavy drums.

(c.) The Bullfinch Proprietary Co. has installed two large water tube boilers, and a cross compound air compressor by the Ingersoll Rand Co. They have also equipped their shaft with a duplex, horizontal, direct driven winding engine, with cylinders 14in. x 30in., manufactured by the Austral Otis Co. of Melbourne.

(d.) At the Victorious Mine, Ora Banda, four (4) Huntingdon Mills, and three Ridgway Filters, driven by a Tangye Producer Gas engine of 108 H.P., have been installed. Also a rock-breaker driven by a 35 H.P. Gas Engine of same make. The winding-engine and compressor are steam driven from a large water tube boiler.

(e.) At Burbanks Main Lode Mine the plant has been reinforced by a Cross Compound Two Stage Air Compressor, by Walker Bros., of Wigan, and a Bellis and Morcom high speed engine, direct coupled to a Mather and Platt 100 K.W. Generator will soon be ready for work. The boiler power has been increased by the addition of a double drum Babcock and Wilcox water tube boiler. Other additions, including a Lowcock Economiser, surface condensor, water purifying apparatus and oil separators will shortly be added.

(f.) A new winding engine of thoroughly modern construction is at present being installed at the Sons of Gwalia Gold Mine, to replace an engine that was undoubtedly unequal to the increased work latterly imposed upon it, and was consequently condemned by this Department except for use under restricted conditions, and that only for a limited time. At the time of writing this report the new engine is almost completed, and will probably be ready for the official test about the middle of April.

The new engine is by Fraser and Chalmers, Ltd., and is a direct-acting, double-drum engine. The cylinders are 27in. diameter with 60in. stroke, and diameter of drums is 10ft. It is fitted with Corliss valve gear and governor. The post brakes, friction clutches, and reversing gear are all operated by steam, and the disc brakes are operated by foot levers. Both drums are loose on shaft, and are operated by friction clutches.

The cut-off gear has a range from zero to 7/8 of the stroke, and is operated by the Seymour patent late tripping arrangement, which has the advantage of securing an equal cut-off at each end of the stroke at all points of cut-off.

There are two sets of post brakes operated by weighted steam brake engines of Fraser and Chalmers design, which includes the Whitmore patent self-adjusting variable load appliance, thus enabling the driver to apply any desired load to the brakes, ranging from zero to the full load. The brakes are applied by the weights and released by steam. This arrangement, of course, enables a driver to apply the brakes in case of steam failure through a burst pipe or other cause.

The disc brakes are connected by means of substantial wayshaft and levers to foot levers on the platform. The depth indicators consist of cylinders spirally grooved, and fitted with necessary pointers. The cylinders are driven by cut gearing from each drum, and will indicate to a total depth of 5,000 feet. An automatic safety stop is to be provided in connection with the indicator gear, coupled to the governor, and so arranged that, should the engine be running at a higher speed than normal, when arriving at the end of the journey, the throttle valve will be automatically closed, and the brakes gradually applied. It is safe to predict that this engine will give a good account of itself, and, fitted as it is, it should be almost impossible to have anything like a serious accident with it.

This mine has also installed during the year a 330 H.P. Crossley Duplex Suction Gas Engine, with 24in. x 32in. cylinders, direct coupled to a British Thompson Houston 3 Phrase Generator. The plant is doing excellent work up to the present.

(g.) At the Lancefield Gold Mine a start has been made to erect a larger winding engine in consequence of the one formerly in use having been condemned as unfit to use for mining purposes. Unfortunately the erection is not at present being proceeded with, owing to the mine having been temporarily closed.

(h.) The Gladsome Syndicate at Comet Vale is installing extensive and up-to-date additions to their plant, consisting of a large Stirling Water Tube Boiler, a vertical mill engine, and a vertical air compressor, with complete condensing plant.

(i.) The Sand Queen in the same district is installing a large Cornish boiler, and a compound condensing air compressor.

(j.) Several new passenger lifts have been erected during the year—all in Perth. All of these are equipped with specially fitted doors, so electrically connected that cages cannot be moved until all doors are closed. The doors are also fitted with automatic locks so fitted that they cannot be opened unless the cage is opposite the door which is to be used.

RETURN No. 5—*Showing operations in each of the proclaimed districts (machinery only) during year ending 31st December, 1912.*

—	Districts.										Totals.	
	South-Western.	Coolgardie and Yilgarn.	Dundas.	East Coolgardie.	North-East Coolgardie.	Broad Arrow.	North Coolgardie.	Mount Margaret.	East Murchison.	Murchison, Peak Hill, and Yalgoo.	1912.	1911.
Total registrations useful machinery	1,679	169	41	548	27	14	135	194	140	166	3,113	3,036
Total inspections made	1,042	67	16	360	8	5	55	52	53	67	1,725	1,812
Certificates (bearing fees)	704	19	5	291	1	4	20	22	18	28	1,112	1,069
Certificates, steam (without fees)	321	48	11	69	7	1	35	30	35	39	596	711
Notices issued "Machinery dangerous"	198	1	4	47	..	..	5	..	4	6	265	162
Total amount of fees for 1912	£ s. d. 273 14 0	£ s. d. 6 9 6	£ s. d. 4 5 0	£ s. d. 175 5 0	£ s. d. 3 10 0	£ s. d. ..	£ s. d. 8 0 0	£ s. d. 14 15 0	£ s. d. 11 15 0	£ s. d. 16 10 0	£ s. d. 514 3 6	£ s. d. ..
Total amount of fees for 1911	237 0 0	4 15 0	3 10 0	205 10 0	3 0 0	0 15 0	11 15 0	15 10 0	7 0 0	13 15 0	..	502 10 0
Number of Inspectors *	3			2			1		1		7	7

* *See* note on Return No. 2 *re* Inspectors.

The above return shows the operations in connection with inspection of machinery and the revenue derived from this source. The number of registered plants at the end of the year was 3,113, as against 3,036 at end of 1911, showing an increase of 77. The latter figure, however, does not give an adequate idea of the number of *new* registrations during the year. It will be seen on comparing the returns for this year with those of 1911 that there are 107 less registrations in Murchison and Yalgoo, and 15 less in East Murchison, thus making the number of actual new registrations 199 for the year. Of this number 143 were registered in the South-Western District.

The number of inspections made was 1,725, as against 1,812 during 1911. The decrease occurs in the various Goldfields Districts, there being an actual increase of 137 in the South-Western District. The number of certificates granted was 1,708, and the revenue derived from these certificates was £514 3s. 6d., being a slight increase on last year's returns.

Dangerous Machinery.

The number of notices issued during the year in connection with the proper guarding of machinery was 265, thus showing a considerable increase on last year's figures. This is partly accounted for by the larger number of new registrations during 1912, and by the fact that Inspectors are gradually finding weak spots which, in the light of accidents occurring, and further experience, appear to require more careful guarding than had at first been thought necessary.

There is still great difficulty experienced in devising anything like an efficient guard for circular saws and various other wood-working machines. Saws, especially, being used for all sorts and sizes of timber, are next to impossible to satisfactorily guard. If guards are ordered and fitted, it is often found that the men using the machine will not use them, saying that they prefer to take the risks rather than be bothered with lifting and altering guards to suit various sizes of work. On the whole, most of the machinery of the State is better guarded and better cared for than in previous years. This remark applies with particular force to passenger lifts, the safe guards in many of which are now so perfect as to render them almost "fool-proof."

Prosecutions.

On the 9th July proceedings were taken against the Swan Brewery Co., Ltd., for—

(1.) An offence against Section 44 of the Act, for working certain machinery for which a certificate was not in force, and were fined £2, and £1 3s. costs.

(2.) An offence against Section 50 of the Act, for not having reported an accident which occurred in connection with aforesaid machinery. For the latter offence they were fined £3 and 2s. costs.

On the 17th July the South-Western Timber Hewers' Co-operative Society, Ltd., were charged with not having reported an accident which occurred on their premises, constituting an offence against Section 50 of the Act. They were fined £2 and £1 3s. costs.

DIVISION III.

Machinery Accidents to persons.

Return No. 6, which is an innovation in my annual report, gives a list of all accidents to persons injured by "machinery" which have been reported to this Department, and a short *precis* of the cause of each accident.

RETURN. No 6.—*Return of Accidents for Year ending 31st December*, 1912.

Name and Address of Owner.	Name of Injured person.	Age.	Class of Machinery causing Accident.	Date.	Nature of Injuries.	Remarks.
1.—South Kalgurli G.M.	Benjamin Turner ..	22	Belting	January 2 ..	Cut on scalp	Repairing a belt the injured man stepped backwards and brought his head into contact with another belt.
2.—Locke's Furniture Factory, Fremantle	Clyde Grant	14	Planing Machinery	January 15 ..	Loss of left hand	Probably fainted and fell forward putting his hand against knives.
3.—Ivanhoe Gold Mine	Wm. Geo. Rosekelly ..	24	Winding engine ..	February 9 ..	Broken finger	Got hand caught by big end of connecting rod, wiping down when engine in motion.
4.—Ivanhoe Gold Mine	Robert Kay Scott ..	19	Pulleys	February 9 ..	Bruised and cut elbow ..	Whilst oiling battery bearing got elbow caught by projecting flange inside rope driving pulley.
5.—Timber Corporation, Ltd., Greenbushes	John Thos. Hughes ..	53	Steam winch ..	February 10 ..	Crushed foot	Injured man had been in ill-health and was sitting on a box driving winch, his feet supported on a block of wood. The block slipped forward through vibration and big end of connecting rod caught his foot.
6.—Great Boulder Gold Mine ..	Thos. Regan	40	Vacuum Filter ..	February 11 ..	Crushed hand	Got hand caught between frame and guide pulley while freeing a hose.
7.—Associated Gold Mine	Robert McFadzean ..	24	Push conveyor ..	February 18 ..	Bruised finger	Got finger under travelling wheel of conveyor.
8.—Kalgoorlie Electric Power and Light Corp.	Owen Bannon ..	16	Hot water tank ..	February 25 ..	Scalded leg	Tank used to receive drainage from engine and pump drain cocks. Man slipped on greasy plank and got his leg into tank.
9.—South Pole Woodyard ..	Harold Henry Walton	16	Circular saw ..	February 26 ..	Left thumb severed and palm lacerated	Slipped on pile of sawdust and fell forward, his hand in contact with saw.
10.—Thomas Bow, Armadale ..	Norman Wm. Watson	27	do.	March 2 ..	Severed thumb and four fingers	Helping to push a short log through saw, and misjudged distance, saw came through back of log and his hand.
11.—Gt. Fingall Consolidated ..	Frank Christensen ..	25	Belting	March 4 ..	Bruised foot	Putting belt on pulley with a rope. Rope caught his foot and dragged it between pulley and belt.
12.—Wiluna G.M., Ltd.	T. Shannon	Not ascertained	do.	March 5 ..	Two ribs fractured	Was putting belt on pulley in motion with a bar.
13.—Swan Brewery Co., Ltd. ..	Thos. Twyford ..	25	do.	March 8 ..	Twisted knee	In reaching an awkwardly placed valve, man slipped and fell with his leg between belting and engine pulley.
14.—Wiluna G.M., Ltd.	H. Bramley	Not ascertained	Mixer	March 12 ..	Not stated ; not serious ..	Got into mixer in motion to get a key which had dropped into mixer. Ladder slipped causing man to fall.
15.—Great Boulder Perseverance G.M.	John N. T. W. Marsh	18	Geared wheels ..	March 13 ..	Crushed thumb and two fingers	While adjusting a water valve near geared wheels of furnace rabbles, got shirt caught by wheels, in trying to pull it out got hand caught.
16.—Neil McNeil, Surrey Chambers, Perth	Madge Metcalf ..	38	Passenger lift ..	April 18 ..	Cut finger and bruised leg ..	Was entering lift at top floor when some unknown person illicitly started lift by reaching through door on ground floor.
17.—Golden Horseshoe G.M. ..	Roy Nelson Burgess ..	19	Conveyor belting ..	April 30 ..	Laceration of arm	Got arm caught between edge of conveyor belting and idler pulley and a vertical post.
18.—Great Boulder Perseverance ..	Alfred Hammond ..	57	Conveyor Belting ..	May 10 ..	Laceration of arm. Died from shock. *Fatal.*	Probably slipped on a step, and throwing out arm to save himself got it caught between belt and vertical post.
19.—Kalgurli G.M.	Frank Merton Midgeley	22	Winding engine ..	May 11 ..	Scalp wound	Put head in a dangerous position without warning driver.
20.—Lake View and Star, Ltd. ..	John Willis	42	Exhaust steam ..	May 17 ..	Scalded face and arm ..	Water rushed out of atmospheric valve to jet condenser.
21.—Prince's Buildings, Perth ..	Wm. Edward Folley	22	Passenger lift ..	May 21 ..	Cut and bruises on head. ..	Put head over protecting wire netting and got it struck by cage

RETURN No. 6.—*Return of Accidents for Year ended 31st December, 1912*—continued.

Name and Address of Owner.	Name of Injured person.	Age.	Class of Machinery causing Accident.	Date.	Nature of Injuries.	Remarks.
22.—Great Fingall Consolidated ..	Ignacio Vladitch ..	15	Belt conveyor ..	May 26 ..	Injuries to head proving *fatal*	Had been playing near conveyor belt, and was found with his head jammed between belt and pulley. No information available as to how he got there. Not employed on mine.
23.—Youanmi G.M., Ltd.	J. H. Robinson ..	30	Pump	June 1 ..	Crushed finger	When barring round geared wheels the wheel slipped and crushed finger.
24.—Hainault G.M.	John P. Henderson	24	Condenser	June 4 ..	Scalds on back and arms ..	By opening atmospheric valve of jet condenser there was a sudden rush of hot water causing injuries.
25.—South-West Timber Hewers' Ass., Holyoake Mill	Jas. Edward Smith ..	27	Docking Saw ..	June 5 ..	Shoulder severed. *Fatal.* ..	Balance weight fastening broke and allowed saw to swing forward. It severed man's shoulder.
26.—Lake View and Star, Ltd. ..	Arthur Nicholas ..	42	Shafting	June 11 ..	Cuts and bruises	Got clothes wound upon shaft while oiling.
27.—Ivanhoe G.M.	Joseph Scott ..	35	Belting	June 12 ..	Crushed hand	A rope attached to a belt which was being removed got wound round shaft and tightened the belt in shaft carrying hand with it.
28.—Whittaker's Mill, N. Dandalup	Harry Rowe ..	38	Geared wheels ..	June 15 ..	Flesh wound on leg and fracture of small bone	Got trousers caught in cogs.
29.—Locke's Furniture Factory, Fremantle	Sydney Jones ..	29	Wood shaper ..	June 24 ..	End of finger severed	Carelessly got finger too close to cutters.
30.—Sons of Gwalia, Ltd.	David McCreath ..	37	Blow off cock on boiler	June 30 ..	Scalded on face, back, and shoulders	Blow off cock opened by fireman just after blowing down another boiler, while injured man was in an empty boiler.
31.—M. H. Longmire, Katanning ..	Malcolm Longmire ..	35	Circular saw ..	July 10 ..	Fractured jaw	Piece of wood flew from saw and struck hin in the face.
32.—Perth Mantelpiece and Shop Fitting Co., Perth	Ronald Haydock ..	19	Buzzer	July 11 ..	Tips of two fingers severed ..	Hand slipped and came in contact with blades.
33.—Kalgurli G.M.	Daniel Mead	31	Winding engine ..	July 15 ..	Loss of first and third fingers	Got fingers caught between big end of connecting rod and crank disc.
34.—Ivanhoe G. M.	Richard Robert Barnett	31	Belting	July 19 ..	Fractured thigh and leg	Caused by driving rope on rock breaker fouling and breaking, while Machine being turned by hand. The broken rope knocked the two men down and caused the injuries
35.—Ivanhoe G.M.	William Garland ..	34	do.	July 19 ..	Cuts on chin and mouth	
36.—Golden Horseshoe	John Vincent Cohen	28	Grit Mill	July 23 ..	Finger nail torn off	Got finger caught cleaning nozzle while in motion.
37.—Hoffman Steam Pressed Brick Works, Bellevue	Norman Caldwell ..	16	Drilling machine geared wheels	July 24 ..	Loss of one finger	Put finger in geared wheels.
38.—Sons of Gwalia	Albert Saunders ..	38	Circular saw ..	July 28 ..	Cut fingers	Whilst cutting wedges got fingers caught by saw.
39.—Swan Saw Mills, Lowden ..	Joseph Nettleton ..	26	do.	August 1 ..	Lost four fingers left hand ..	Tried to lift out packing board before saw stopped.
40.—Cassidy Hill G.M.	Samuel Knowles ..	48	Belting	August 15 ..	Cut fingers	Got fingers caught while throwing off belt.
41.—City Case and Box Mfg. Co., Perth	R. J. Banfield ..	29	Circular saw ..	August 23 ..	Lost one finger and lacerated thumb	Hand slipped and came in contact with saw.
42.—Lake View and Star, Ltd. ..	Julius Wm. Saunders	35	Belting	August 25 ..	Scalp wound	Probably got under belt to scoop up some waste oil and raised his head too soon, a Jackson's Belt fastening struck him.
43.—Youanmi G.M.	Thomas Keown ..	37	Crane	August 28 ..	Bruised foot	Liner plate dropped off crane.
44.—Golden Horseshoe G.M. ..	John Charles Neville	37	Circular saw ..	August 30 ..	Cut and bruised fingers ..	Wood twisted and threw finger against saw.
45.—South Kalgurli G.M.	Thomas B. Byrnes ..	42	Wheeler pan ..	September 1 ..	Broken leg	Tripped on stick on a Wheeler Pan platform, fell on to a belt and thence to floor.

RETURN No. 6.—*Return of Accidents for Year ended 31st December*, 1912—continued.

Name and Address of Owner.	Name of Injured person.	Age.	Class of Machinery causing Accident.	Date.	Nature of Injuries.	Remarks.
46.—West Australian Newspaper Co.	P. Jones	Not ascertained	Printing machine ..	September 2 ..	Crushed fingers	Got fingers caught between rollers. Could not trace this man, age unknown.
47.—Great Boulder G.M.	Henry Poole	26	Geared wheels ..	September 16..	Crushed hand necessitating amputation	Thread of lubricator broke causing hand to slip into geared wheels.
48.—South Kalgurli G.M.	Richard J. Jones ..	17	Steam hammer ..	September 18..	Crushed thumb	Put hand on anvil of steam hammer thinking it had stopped.
49.—Beigel's Brewery, Bunbury ..	Walter Jas. Scott ..	15	Pump	October 15 ..	Loss of thumb	Got hand caught by pump crosshead, oiling whilst in motion.
50.—Bunning Bros., Bunbury ..	Henry Gibson ..	43	Circular saw ..	October 15 ..	Loss of third and fourth fingers left hand	Hand slipped while adjusting packing piece.
51.—State Battery, Norseman ..	John Halfric	Not ascertained	Battery	October 15 ..	Lacerated hand	Got hand caught between tappet and cam through not releasing his hold of lifting stick.
52.—Whittaker's Mill, N. Dandalup	Sedley Schofield ..	38	Wood working ..	October 17 ..	Cut finger	Got finger too close to cutter.
53.—Lake View and Star, Ltd. ..	James Kemp Tait ..	47	Circular saw ..	October 24 ..	Flesh wound on finger ..	Firewood which he was cutting slipped and threw finger against saw.
54.—Silverthorne & Adair, Kalgoorlie	L. Britten	15	do.	October 24 ..	Thumb and 1st finger severed ..	Hand slipped and saw caught same.
55.—South Kalgurli G.M.	Walter Ruddick ..	Not ascertained	Ore treatment plant	November 5 ..	Twisted ankle	Slipped whilst attending to bearings.
56.—Moonlight G.M., Wiluna ..	T. Nulsen	18	Battery	November 6 ..	Flesh wound on hand ..	Whilst fixing feeder rod a cam caught back of hand.
57.—Hainault G.M.	James Thomas Ward	35	Rockbreaker ..	November 7 ..	Crushed finger	Crowbar slipped while barring round fly-wheel of rockbreaker.
58.—Hainault G.M.	William Jackman ..	23	Filter press ..	November 14..	Crushed toe	Wheel on filter press tightening screw fell off through loose key.
59.—Sons of Gwalia G.M.	H. K. Peters ..	24	Gas Engine ..	November 14..	Cut neck, bruised thigh, arm, and shoulder	Fixing splash plate while engine in motion.
60.—Associated G.M.	Rowland Hill ..	32	Pulley	November 18..	Strained arm	Got arm caught by pulley.
61.—Grose Bros., Lennonville ..	E. Wright	Not ascertained	Oil engine ..	November 24..	Wound on arm	Shirt became entangled in engine governor.
62.—Westralia United Goldfields, Ltd., Linden	J. T. Ritchie ..	do.	Gas engine ..	December 7 ..	Crushed finger	Got finger caught in machinery through carelessness.
63.—Millars' Timber and Trading Co., Ltd., Perth	Thos. Jas. Aram ..	30	"Sticking" machine	December 7 ..	Loss of three fingers	Table of machinery dropped $\frac{1}{4}$in. through faulty adjusting screw. Knives perforated wood and caught fingers.
64.—Gt. Boulder Perseverance G.M.	Wm. Meyers	Not ascertained	Steam pipe ..	December 10 ..	Burn on arm	Accidentally placed arm against steam pipe.
65.—Gt. Boulder Perseverance G.M.	Thos. Frost	39	Band saw	December 11 ..	Cut finger	Timber being cut caught against another piece of timber and threw hand on saw.
66.—Golden Horseshoe G.M. ..	Leslie Adams ..	32	Circular Saw ..	December 17 ..	Bruise	Whilst working at saw a piece of timber struck him on hip.

It will be seen that in a large number of cases the accidents were caused by pure carelessness on the part of the persons injured. It is difficult to altogether condemn men for attempting to put belts on pulleys in motion, and similar actions, as this kind of thing is usually done in order to save an employer's time, and the fact of men doing these things shows that they take an interest in their work. It is, nevertheless, a reprehensible practice. One man may be able to put a belt on a certain pulley in motion any number of times, and possibly no other man in the same works could do it with safety. The man who does it successfully is setting an example that possibly no one else can emulate without danger.

I regret to report that three (3) of the accidents in the return referred to were fatal, viz., Nos. 18, 22, and 25. There were no witnesses to Nos. 18 and 22, and it is only a matter of surmise as to how these accidents occurred.

The direct cause of accident 25 was the breaking of a piece of wire rope used to attach a balance weight to the chain which was fitted to the frame of a docking saw. The duty of the balance weight is to pull back the saw automatically after it has made a cut. In this particular case the weight used was a piece of rough cast iron scrap, weighing about 120 lbs. A hole was drilled through the casting, and edges of same were left rough. These sharp edges chafed through the wire rope, causing weight to drop and allowing saw to swing forward. Had the saw been properly hung it could not have swung far enough forward to do any harm. It was badly fixed, and was not fitted with any guard, and there was no stop to prevent its excessive forward motion. The saw was a recent addition to the plant, and had not been seen by any Inspector. The deceased man was an experienced hand with this class of saw. He was not actually using it at time of accident, but was merely walking past it, when the rope broke, and saw swung forward and nearly severed his right arm through the shoulder, causing his death in a few minutes.

It came out in evidence at the inquest that the deceased remarked five minutes before the accident happened that the piece of wire rope "did not look too good." It was suggested to him that engine should be stopped and rope replaced, but he replied that it "would do till the foreman came round." This is another instance of men taking altogether unnecessary risks.

Since the accident, plant has been inspected and proper precautions taken to prevent the possibility of a recurrence of such an accident. The owners of the plant did not report the accident, and were prosecuted for a breach of Section 50 of "The Inspection of Machinery Act, 1904." They were fined £2 and costs.

RETURN No. 7.—*Return showing number of persons injured or killed by machinery accidents, and class of machinery causing accidents, in each district during the year ending* 31*st December*, 1912.

Class of Machinery causing Accidents.	DISTRICTS.										
	South-Western.	Coolgardie and Yilgarn.	Dundas.	East Coolgardie.	North-East Coolgardie.	Broad Arrow.	North Coolgardie.	Mt. Margaret.	East Murchison.	Murchison, Peak Hill, and Yalgoo.	Total all Districts.
Circular Saws and Band Saw	6 (1)	..	..	6	..	..	..	1	..	..	13 (1)
Buzzers	1	..	..	..	..	..	..	..	..	..	1
Other Wood-working Machines	4	..	..	..	..	..	..	..	..	..	4
Ore-treating Machinery—Crushers, Ball Mills, Roasters, etc.	..	..	1	7	..	..	..	..	2	..	10
Belting	1	..	..	6 (1)	..	..	..	..	1	1	9 (1)
Belt Conveyors	..	..	..	2	..	..	..	..	..	1 (1)	3 (1)
Geared Wheels	2	..	..	2	..	..	..	..	..	..	4
Fly Wheels and Pulleys	..	..	..	2	..	..	..	..	..	..	2
Shafting	..	..	..	1	..	..	..	..	..	..	1
Winding Engines	..	..	..	3	..	..	..	..	..	..	3
Suction Gas Engines	..	..	..	..	..	..	1	1	..	..	2
Oil Engines	..	..	..	..	..	..	..	..	..	1	1
Steam Winches	1	..	..	..	..	..	..	..	..	..	1
Steam Hammer	..	..	..	1	..	..	..	..	..	..	1
Passenger Lifts	2	..	..	..	..	..	..	..	..	..	2
Printing Press	1	..	..	..	..	..	..	..	..	..	1
Crane	..	..	..	..	..	..	..	..	1	..	1
Scalds	..	..	..	4	..	..	..	1	..	..	5
Pumps	1	..	..	..	..	..	..	..	1	..	2
Totals for 1912	19 (1)	..	1	34 (1)	..	..	1	3	5	3 (1)	66 (3
Totals for 1911	20	1	..	33 (2)	..	..	1	21 (5)	2 (1)	3	81 (8)

The figures in parentheses denote fatal accidents.

Twenty-eight (28) of the above were classified as minor accidents, being chiefly cuts, bruises and strains; thirty-five (35) were serious, most of them involving loss of fingers or other serious injury; and three (3) were fatal.

An analysis of the above table shows:—

(a.) That there were 15 accidents less than in 1911.

(b.) That there were five fatal accidents less than in 1911.

(c.) That circular saws accounted for over 19 per cent. of the total number of accidents and one of the fatal accidents.

(d.) That adding together accidents due to "belting" and "conveyor belts," over 18 per cent. of total accidents and two fatal accidents come under these headings.

(e.) That over 28 per cent. of the total number of accidents occurred in the South-Western District, and over 51 per cent. in the East Coolgardie District.

(f.) That the accidents in the South-Western District amounted to 1.13 of the total number of registrations in the district, and that those in the East Coolgardie District amounted to 6.20 per cent.

It is satisfactory to note that in the majority of cases no extra protection that could have been devised would have prevented the accidents recorded; and the fact that the total number of accidents from such admitted danger points as geared wheels, fly-wheels, and pulleys, and shafting was only four, two, and one respectively, shows clearly that, where it was possible to devise satisfactory guards, this was evidently done.

Mishaps to Machinery.

During the year there were several mishaps to machinery, which fortunately did not involve injury to person. The most interesting of these were as follows:—

(a.) At the Union Flour Milling Co., Kellerberrin, a 74 H.P. Crossley suction gas engine failed, owing to the fracture of the bolts in crank pin brasses. The piston, brasses, and connecting rod were destroyed.

(b.) At the Eureka Flour Milling Co., Cottesloe, a very similar occurrence happened to a 140 H.P. engine of same class, by the same maker; this accident also involved a new piston, connecting rod, and brasses.

(c.) At Two Boys mine, Kundip, one of the bolts in the crank pin brasses fractured in a 30 H.P. Wilson oil engine. The other bolt seems to have held. The brasses got more or less adrift, and dropped sufficiently to cause collision with the frame of the engine, through which a large hole was punched. No further damage was done.

(d.) At the Mines Water Supply Branch at Davyhurst, an accident occurred to an oil engine through one of the nuts on a crank pin brass bolt working off. The other bolt bent, and the piston and rod were blown out of the cylinder, and the cylinder liner was cracked.

The above four (4) accidents are all due to the failure of the bolts in crank pin brasses. The first three were probably caused by crystallisation of the bolts, and the last by omitting to take proper precautions in securing the nut on same. In all internal combustion engines these bolts are subject to very severe shock and crystallise rapidly. A spare set of bolts should always be kept on hand, and these should be changed, say, every six months if engine is in constant work. The bolts which have been at work should then be carefully annealed. In my last year's report I referred very fully to the proper shape and treatment of these bolts. With regard to securing bolts properly, locknuts should always be provided, and a stout split-pin inserted close up to outer nut. It is most important to keep these crank pin bearings set up as tight as they will run without heating, as a knock, which in a steam engine would be of no importance, may very quickly spell disaster. In all four cases a good deal of damage was done, which might easily have been averted by ordinary care. Each one of the accidents might have caused the death of the attendant, had he happened to be in the line of fire.

(e.) A somewhat extensive smash occurred to the engine at the Coolgardie State Battery in the early part of the year. The engine is a Tandem compound by Thompson & Co., Castlemaine, with cylinders 8½in. and 15¼in. with stroke 24in. The cause of accident was curiously enough due to one of the bolts in crank pin brasses coming out. The bolt was undamaged, which is clear proof that the nuts worked off and bolt dropped out before the smash occurred, and this is evidence of considerable carelessness on the part of the driver in charge. The remaining bolt collapsed, and when engine was stopped, the following damage was discovered:—The crank shaft was bent in the main bearing, the connecting rod was badly bent, the crank pin brasses were broken to pieces, and crank pins scored. The trunk of the engine was cracked through 4in. behind main bearing. The back end of H.P. cylinder was knocked out, the fracture occurring in the cylinder casting, and the back cover of L.P. cylinder had a piece knocked out about 6in. diameter. All this damage would probably have been averted had the bolts been properly secured by locknuts with split pin behind same.

(f.) At the North End mine, Kalgoorlie, an accident happened to an 8in. x 12in. duplex geared winch. The engine was only fitted with one foot brake, and no indicator. Owing to lack of indicator and the flimsy nature of the brake, the Inspector refused to allow the winch to be used for hauling men, but granted a certificate for other purposes. The engine was then winding from the 270ft. level—the lowest level. Shortly afterwards engine was used to sink to 500 feet, and the spur wheel fractured. It was secured with stout clamps, but when seen by the inspector there was movement in the key and the cracks were not drawn together properly. A new spur wheel was ordered. The management has now decided to replace the engine by a new one.

(g.) At the Eclipse mine, Kalgoorlie, a 12in. x 24in. geared duplex winding engine broke down, probably through the breaking of a tooth in the pinion wheel. This tooth possibly stuck in the hollow between two teeth, and next revolution broke a large piece out of the spur wheel and two more teeth out of the pinion. The broken spur wheel was renewed, and the pinion temporarily studded until a new one was ob-

tained. This engine had been working at too great a speed, and this, in connection with the frequent reversals, probably strained the teeth which broke. An opinion was expressed by the inspector that as the engine was scarcely up to the work required of it, it would be policy to replace it by a stronger one. Subsequently means were taken to distribute the haulage better, and as the Company intimated that later on they intended erecting an engine on another shaft the engine was allowed to continue working. A new drum shaft was put in to replace the old one, which was round and had keyways cut in it for the clutch feathers. These were continually working loose. The new shaft was made with a square portion in centre for clutches to slide on. In a very short time this shaft broke through on spur wheel side of nearest clutch. The broken shaft had a sharp corner where square part started. It was replaced by a new shaft of best mild steel with good fillets between square and round portions, since which it has not given any trouble.

(h.) At the Great Fingall gold mine, Day Dawn shaft, a curious mishap occurred. The driver was changing gear, skip was at brace and brakes on. The skip which was attached to the loose drum got away and ran to the bottom; the rope then broke off at drum and fell on top of skip. The occurrence appears to have been due to the fact that the rope had just been oiled. The oil was probably too thin and splashed on to the brakes, causing them to slip. No damage was done except to property.

(i.) At the Black Range Mining Co.'s main underlay winze, which is virtually the shaft from No. 3 to No. 12 level, an empty skip was being lowered on the north drum, the engine being a double drum air winch, and one man was being hauled up in the south drum. When the north skip was three levels down the engine began to race. The driver stopped the south drum by turning off the air and applying the brake. He then tried to stop north drum but could not do so, and it went to the bottom without doing any damage. On examining into cause it was found that the shaft was broken inside the drum 20in. from the end. An old flaw was discovered which had been previously unsuspected. The flaw was directly in the centre of shaft and was 1in. in diameter. Of course until the fracture occurred detection was impossible. It was most fortunate that the man being hauled up was not in the north skip.

DIVISION IV.
ENGINE-DRIVERS' EXAMINATIONS, INQUIRIES, AND PROSECUTIONS.

During the year four examinations were held in Perth, two in Bunbury, two in Kalgoorlie, one in Albany, and one in Cue.

The personnel of the Board is the same as in 1911. There were 15 meetings of the Board held in Perth for the purpose of dealing with applications, inquiring into overwinds, and other reported misdemeanours of engine-drivers, and minor matters.

The actual examinations held by the Travelling Board at the various centres occupied 27 days, and the time occupied in travelling to and from the various centres was 12 days. The time spent in Perth reading and marking examination papers, and signing certificates was 13 days, so that in all 67 days were occupied in connection with this business.

It will be noted that in 1911 it was reported that there were 41 "Meetings of the Board." These figures included the time occupied by all meetings, examinations, reading of papers, etc. (Of course there was no travelling during that year) so that there were twenty-three days more occupied in 1912 than in 1911.

In addition to examinations actually held, two examinations were advertised to be held at Leonora, Norseman, and Sandstone, and one at Lawlers, but in each case there was an insufficient number of applicants to justify holding the examination. The candidates at these places were then duly notified of the date of the next examination to be held at the nearest centre. In many cases applicants availed themselves of this opportunity. In cases where such opportunity was not availed of, the application was held over until such time as the candidate had an opportunity of presenting himself at his own or some other centre.

Two hundred and sixty-six (266) applications were dealt with during the year and one hundred and seventy-seven (177) certificates were approved of, as against one hundred and ninety-seven (197) in 1911. The most noticeable fact *re* these certificates is the small number of *First Class* Certificates issued during the year. For a detailed return of certificates issued see Return No. 8.

TABLE No. 8.—*Showing total Number of Engine-driver's Certificates (all Classes) Granted in 1912.*

Class of Certificate.	Number Granted.	
	1912.	1911.
1st Class Competency (including Certificates issued under Regulation 27 and Sec. 63 of Act)	10	14
2nd do. do. do. do. do. ..	39	47
3rd do. do. do. Section 63 of the Act	61	63
Locomotive and Traction Competency	18	23
Traction Competency	10	10
Interim	26	30
Copies	13	10
Totals	177	197

The revenue collected from engine-drivers' fees was £228 1s., as against £295 5s. during 1911. In this case, as in the case of boiler revenue, the decrease is perhaps more apparent than actual, as the revenue from this source was considerably swelled in 1911 by a sum earned in previous years being paid into revenue out of a defalcation vote.

The new regulations, which were gazetted on 1st March, 1912, have been found satisfactory, and have conduced to a better understanding amongst applicants of the requirements of the Act, and the conditions under which certificates were granted.

In the early part of the year the Hon. Minister granted permission to the General Secretary of the Engine-drivers' Association, and the branch secretaries at Perth and Kalgoorlie, to enter upon any building or premises in or upon which machinery is working, and inspect the certificate of the person in charge of an engine.

I am not aware to what extent this permission has been availed of, but I am pleased to note that there has not been any increase in the number of drivers reported for driving without certificates.

Inquiries, Prosecutions, etc.

I am again able to report that there has been no official inquiry with regard to breaches of the Act by engine-drivers during the year.

A few cases of carelessness have occurred, fortunately without serious consequence. The drivers in such cases have been cautioned, and the occurrences have been recorded.

The only cases deserving any notice are as follows.—

(a) At the Ivanhoe Gold Mine, Kalgoorlie, a skip got stuck in the shaft whilst being lowered. In the meantime the driver changed the gear to lower to a different level, started the engine and did not notice the absence of "load." This resulted in a considerable quantity of slack rope being lowered on to the top of cage. When the engine was reversed, the rope kinked and broke. The driver was censured and cautioned to be more careful in future.

(b) At the Ingliston Consols Extended Gold Mine, Meekatharra, while the cage in the South compartment of main shaft was resting on the bearers at the 625ft. level, and the driver was raising the cage in north compartment, the south drum began to revolve rapidly, and all the rope ran off drum and went down the shaft. The driver omitted to secure the brake, which slipped and caused the mishap. The driver was discharged, and has left the State. The damage was fortunately confined to the rope and head gear hand rail.

(c) At the Sons of Gwalia G.M., Leonora, a peculiar accident happened, which accentuated the now acknowledged fact that this engine was not powerful enough for its work (see my remarks on this subject earlier in this report). The driver states that he had a new driver with him, whom he was instructing in the use of the engine. The north skip was being filled at the No. 12 bin, when suddenly the brake slipped and skip was lowered about three feet. The driver at once turned steam on and managed to stop it. The south skip was at the tip. Finding he could not start the engine, he lowered the north skip slightly in order to get engine into a better starting position, and still could not start. By this time the south skip was as high as it could go. He then applied the brake hard on north drum and secured it. He took a slight strain on south rope to free clutch, declutched, and took brake off. When south skip started to come down the north skip at once started to run, and went to the bottom, doing considerable damage. Fortunately the damage was confined to property and no person was injured. The driver had been on this engine for over six years, and he stated that the only reason he could give for the north drum brakes not holding was that the ropes had been greased on the day of the accident and that some oil may have got on brake path.

The Board considered that the driver was not at fault, as had the engine been capable of starting the load at any position of the cranks, the mishap would not have occurred.

The faulty engine is now being replaced by a new and more powerful engine of modern construction, as already mentioned in this report.

DIVISION V.

General.

Winding Engine Safety Appliances, Efficiency of Brakes, etc.

I may here mention that the following standard method of testing winding engine brakes has been adopted by this Department since October, 1909, and all Inspectors have been notified as follows:—

"As the matter of winding engine brakes has called for considerable attention recently, please note that in future the following standard method of testing same is to be adopted and particulars of test entered in the machinery register when issuing certificates:—

1. As nearly as possible balance the weights of cages and ropes in the shaft.
2. Set the engine with both cranks on the engine side of the crank circle and at an angle of 45 degrees to the horizontal as nearly as possible.
3. Put both brakes hard on.
4. Apply full steam with the reversing lever set first in one and then the other of its extreme positions.

"The brakes should thus hold the engine under full steam with no more slipping than one foot. If the engine fails to stand this test satisfactorily, issue necessary notice in writing for same to be altered accordingly.

"Please note that in addition to testing brakes with cages balanced in shaft, it is also advisable that each drum be tested in single gear."

It will be seen that with the cranks set in the position mentioned the engine is in the best position to start, and that a test conducted under the above conditions is a more severe test of the brakes than any that could occur under ordinary working conditions, short of attempting to stop a runaway cage. The latter is, of course, a test that cannot be applied, and if it could, would generally end in disastrous results due to kinetic energy.

During the past year it has become apparent with increasing depths, and a more generally strenuous style of working, that the time has arrived when it is necessary to adopt some further standard for the general efficiency of winding engines, and I am pleased to say that through the courtesy of leading makers of this class of machinery, a large amount of information has been accumulated. During the year I obtained from manufacturers in the United Kingdom certain

detailed information on the subject of winding engines, with a view of having matter for comparison with our present methods. Many of the replies were vague and inconclusive, but some of them contained valuable information as to the most up-to-date appliances for the prevention of overwinding and overspeeding. A good deal of information was also obtained as to brake efficiency and the methods adopted by makers of modern engines for determining the size of cylinders with regard to the load an engine should be able to start with, at any position of the cranks. I trust that during the present year I may be able to find the necessary time to go fully into this matter.

Amendments to the Inspection of Machinery Act, 1904.

A bill for the amendment of the above Act was prepared and printed last year, and I had hoped it would have been introduced ere this. There are many much needed reforms embodied in it, and I sincerely trust that time may be found during the forthcoming session of Parliament for its consideration.

Work done for other Departments.

A considerable amount of work was done for other Departments in advising, valuing, and inspecting plants for departmental purposes.

I find that this work makes serious inroads on my time, as well as into that of Inspectors of the Department, and whilst this work is being done the ordinary routine work has to be held in abeyance. With a little more margin in the matter of staff, the Department would be in a position to undertake more of this very necessary work.

Inspectorial Staff.

The number and personnel of Inspectors remains as in 1911, and, at the risk of reiteration, I have again to report that the number of Inspectors is entirely inadequate for the work to be done if the whole of the provisions of the Act are to be treated seriously.

During the year one Inspector was absent for six months on long service leave, so that for that time only six Inspectors were available, and provision had to be made for the usual annual leave of these six. It can easily be seen that this state of things leaves no margin for contingencies.

One of the Kalgoorlie Inspectors had to be requisitioned to assist in the South-Western District, and the work of the Leonora and Cue Inspectors was re-arranged. All boilers and machinery in the East Murchison District, with the exception of those in and about Sandstone, were handed over to the Inspector at Leonora. Geraldton was made the headquarters for the Murchison Inspector, and a portion of the northern part of the South-Western District was handed over to this Inspector.

In spite of these re-adjustments the Inspectors find that it is impossible to keep existing work up to date, and hopeless to attempt to cope with the large number of machinery groups which is known to be unregistered. The Department is placed in the position of trying to administer an Act whose provisions they cannot enforce, with the usual unsatisfactory result.

The situation was commented on by me in my last annual report, but no relief has yet been obtained. It is not a matter for surprise that the Inspectors should, one and all, feel the injustice of having to work much overtime, knowing that however much they work they are attempting an impossible task. This state of things generally leads to imperfect work, and though I am pleased to say I have as yet no instances to report, sooner or later it is almost certain that a mistake will occur as a result of overwork, which may possibly end in a serious accident. It should be remembered that in dealing with steam boilers, a very slight slip in calculation, or a simple error in judgment may lead to an appalling disaster, and it is not equitable to expect men dealing with such potentialities to work right up to their limit and make no mistakes.

Owing to the congested state of their work Inspectors are often in the position of having to order repairs to boilers, or guards, etc., to machinery, without having any chance to revisit and make sure that their instructions have been properly carried out. Risks have thus to be taken which are not fair either to Inspectors, owners, or the public.

Motor-cars.

For some years the Inspectors at Kalgoorlie have been provided with motor-cars, and during 1910 a car was purchased for the Murchison Inspector. In the early part of 1912 the Leonora Inspector was also provided with a car. These cars have been of great assistance in expediting the work in the districts referred to, and no horses are now employed in these districts.

Clerical Staff.

With the exception of a new Clerk in Charge, who was appointed by the Commissioner in August last, there has been no change in the Head Office Staff. At Kalgoorlie a new clerk was appointed towards the close of the year.

Revenue.

The amount paid to revenue from all sources during the year was £4,393 14s. 1d., made up as follows:—

	£	s.	d.
Boiler fees	3,560	2	6
Machinery	514	3	6
Engine-drivers ..	228	1	0
Incidentals	91	7	1
	£4,393	14	1

The above figures show a total decrease of £293 7s. 4d. as against revenue for 1911. The probable cause of the decrease has been dealt with earlier in this report. During the year three amounts totalling £5 14s. were written off as bad debts.

Mileage.

The distance travelled by the various Inspectors during the year comes to a total of 45,956, as follows:—

RETURN No. 9.—*Showing Distances travelled by Inspectors in undermentioned Districts in 1912 and 1911.*

District.	Rail Miles.				Road Miles.				Water Miles.				Total Miles.			
	1912.	1911.	Increase in 1912.	Decrease in 1912.	1912.	1911.	Increase in 1912.	Decrease in 1912.	1912.	1911.	Increase. in 1912.	Decrease in 1912.	1912.	1911.	Increase in 1912.	Decrease in 1912.
South-Western ..	19,182	13,868	5,314	..	6,022	4,967	1,055	..	314	382	..	68	25,518	19,217	6,301	..
Kalgoorlie	3,128	3,461	..	333	4,916	4,057	859	..	..	..	..	..	8,044	7,518	526	..
Leonora	2,880	4,462	..	1,582	4,434	2,772	1,662	..	..	..	..	..	7,314	7,234	80	..
Geraldton	3,753	1,084	2,669	..	1,327	4,287	..	2,960	..	..	..	..	5,080	5,371	..	291
Totals ..	28,943	22,875	7,983	1,915	16,699	16,083	3,576	2,960	314	382	..	68	45,956	39,340	6,907	291
															Making total increase of 6,616 miles in 1912.	

MILES TRAVELLED PER INSPECTION IN EACH DISTRICT DURING 1912.

District.	Total Number of Inspections (Boilers and Machinery.)	Total Miles travelled.	Average Miles travelled per Inspection.
South-Western	2,024	25,518	12·5
Kalgoorlie	902	8,044	8·91
Leonora	360	7,314	20·31
Geraldton	201	5,080	25·27
	3,505	45,956	13·11

The distances travelled by road and water are not noticeably different from the 1911 returns. The rail distance, however, shows an increase of 7,983 miles, the largest part of which was travelled in the South-Western District. The total number of inspections, including boilers and machinery, was 3,505, and the average distance travelled per inspection was 13.11 miles. The mileage represents the total distance travelled by all Inspectors, and includes the distance travelled between the Goldfields and Perth when officers were brought down to Perth to relieve, or on other business, so that the distance travelled for actual inspection is not quite so great as it appears to be. It is, however, very large, and this constitutes one of the great difficulties in coping with the work.

In conclusion I wish to thank the various officers of other Departments who have rendered assistance with matters in connection with Engine-drivers' Examinations, the issue of certificates, etc., and also to record my appreciation of the manner in which my staff has carried out its duties during the past year.

C. J. MATHEWS, M. Inst. C.E.
Chief Inspector of Machinery and Chairman of the Board of Examiners.

23rd April, 1913.

Extracts from Inspectors' Reports.

Mr. B. Prynn Jones, Inspector of Machinery in charge of East Coolgardie and Yilgarn, Dundas, North-East Coolgardie, and Broad Arrow Districts, who is located at Kalgoorlie, remarks:—

"I beg to submit my report on the operations of the Act in the Districts of East Coolgardie, Coolgardie, and Yilgarn, Dundas, North-East Coolgardie, and Broad Arrow for the year ending 31st December, 1912.

"The past year has been a hard one for both Inspectors. Mr. Lee was called away to other Districts for about thirty-one weeks and in lieu of his help I received assistance from Mr. McCulloch for five weeks. From 25th June to 5th July there was no Inspector in Kalgoorlie, because I had to make a tour through portions of the Coolgardie and Broad Arrow Districts, and no one could be spared to take my place here.

"The number of registrations of useful boilers and groups of machinery are both slightly higher than last year. Boilers showing an increase of twenty-four and machinery groups of forty-two.

"*Inspection of Boilers.*—The inspection of boilers has been kept up vigorously throughout the year, and on the last day only three remained due for inspection. By personal inquiries and correspondence through the office a careful watch is kept for all boilers in use.

"*New Boilers Registered.*—There have been six new registrations in these districts. Coolgardie and Yilgarn having one new "Locomotive" and three "Water tube" type. Two new ones in East Coolgardie were both Cornish, but have now gone to other districts.

"*New Boilers constructed in this State and branded here.*—Two large "Cornish" type boilers have been turned out during the year from the Kalgoorlie foundry of Messrs. Silverthorne and Adair. They were both of their 130lbs. pressure standard design, and made for up-country mines.

"*Maintenance and Care of Boilers.*—Speaking generally boilers are well maintained in these Districts, especially where scheme water is available. In a few isolated cases water tube boilers are allowed to get rather dirty, but we never fail to make representations to the owners or managers should such be detected. In some of the outlying places like Marvel Loch we have experienced difficulty in having boilers properly prepared for inspection, but no future trouble is anticipated in this regard. In Kalgoorlie the only trouble seems to be experienced from the excess of oil, and most owners give careful attention to its elimination.

"*Explosions and interesting defects.*—No explosions have occurred during the year. The boiler-using public are relying more and more on our inspections, and, as previously mentioned, fourteen special inspections have been made either on behalf of buyers or for those who have had boilers repaired in the local foundry. No interesting defects have come under notice during the year.

"No prosecutions have taken place for infringements of the Act, although all owners are not yet seized with the importance of and necessity for reporting repairs, even of a trivial nature. They do not know there are certain places (in Locomotive type boilers especially) which are impossible to see under ordinary circumstances, and that sometimes what appears a trivial defect is an important indicator to an Inspector. Should any more cases of neglect to report repairs occur, I shall recommend that the offender be prosecuted.

"Machinery inspections have been done as carefully as time would allow, but 115 groups remained overdue at the end of the year. I have not been able to devote the time I would like to winding engines, but have endeavoured to give all brakes the steam test at least. With the very latest type such as "Fraser & Chalmer's" on many large mines and the "Thompson" vertical at the Great Boulder Mine, there is little anxiety as regards brakes, but a few have to be visited many times during the year to make sure that they are kept in good condition and adjustment. There is not space for anything but generalities here, but I consider it would not be amiss for all Inspectors to be called upon to give their views on the subject of winding engines during the present year. Not necessarily from the point of economical design, but all round reliability.

"The guarding and fencing of stationary engines, shafts, and belting have been given attention, and the installation of new gear and re-arrangement of old plants keep one on the alert. It is still difficult to know exactly how and why a place is dangerous. In an instance which occurs to my mind a pair of toothed wheels was guarded quite effectually in my opinion, because to reach a grease cup about fifteen inches above the wheels the attendant had to reach over a wide board which kept his body clear. Unfortunately he found the cap of grease cup very tight one day, and so put his full strength into the operation of screwing it up; the threads had been crossed and it got loose suddenly, and the "funny-bone" of his elbow came into contact with the guard board, causing temporary paralysis, so that his hand dropped on the toothed gearing and resulted in the loss of two fingers.

"*Dangerous Machinery.*—This is a term very difficult to define, and we are frequently confronted with the question as to whether certain portions of machinery are a menace to safety if workmen are not supposed to go near them. After a man has received an injury

it is poor consolation to know that he should not have gone near the place where the injury was received. Then, again, what would not be dangerous to a reasonably careful man is very much so to a careless one. Or to go further still, what allowance should one make for possible slipping, stumbling, or attacks of giddiness. I find that after an accident has happened many unthinking people consider the Inspector lacking in judgment, to say the least of it.

"*Mishaps to Machinery.*—Although smoke stacks can scarcely be called machinery, it may be interesting to mention that about the middle of July last the main winding engine and compressors of the Kalgurli Mine were suddenly deprived of motive power by the falling of two smoke stacks. They were each about seventy feet in height, and stood on stone bases about twenty feet above ground. About noon a severe willy-willy passed over the mine and caused one of the guy ropes of one stack to snap. The stack then fell across one of the guys of the other stack, and both fell shattered. The stacks had been examined by a mine official about a fortnight previously, and as one seemed to be defective a new one was ordered and was ready for delivery, so that very little time was lost. Very fortunately no injury was caused to any person and incidentally it may be noted to property either. I saw the guy which had parted first, and the break was clean and the rope apparently in good order.

"*Engine-drivers' Misdemeanours.*—I was only called upon to inquire into one case of overwinding during the year. The case had familiar features. Towards the end of a shift during which water was being baled an engine-driver left his engine with brakes on while he went round oiling another in the vicinity. The engine had a cage on one drum and baling tank on the other, the former being used as a balance weight. He left the engine with the cage on the brace and tank in the water, and on returning thought the relative positions otherwise and commenced, as he thought, to lower the tank from brace with the result that the cage was quickly up to the thimble of overwinding safety device. It was momentary forgetfulness and not at all likely to happen had the hauling of men been in question. No prosecutions have been instituted nor inquiry been held on engine-drivers.

"The past year has been a very strenuous one, and I trust to have more assistance in the coming one. It is difficult to decide, when one is working at high pressure, whether it is best to do all the work as well as possible, or to do as much as possible well, and neglect the rest."

Mr. H. L. Gill, Inspector of Machinery in the South-Western District (Metropolitan Area), remarks:—

"During the year I was absent on long service leave for six months, and two weeks' annual leave. This of course reduced my working year considerably.

"I am pleased to say that I have no boiler explosion or any serious accident in connection with boilers or steam pipes to report.

"During the year three machinery accidents came under my notice, as follows:—

"(a) A labourer at a sawmill employed in removing sawdust, etc., was called on to help with a large log. He got behind the log and was pushing it through saw with both hands against the squared end of the log. He unfortunately did not notice how nearly through the saw was, and kept on pushing until it came actually through and cut off all the fingers of one hand. The man had had no previous experience with circular saws and should not have been called upon to assist.

"(b) A lift accident, which fortunately ended much less seriously than it might have done, occurred under the following circumstances. Some person rang the bell in cage (which was at top floor of building) from the ground floor. The person in attendance was just stepping into the cage at the top floor, when the lift started downwards, caught the attendant between top of cage and floor, and caused severe bruising and a cut hand. The explanation is that the person requiring the lift getting impatient, put his arm through the ground floor door, and started the lift down. Hearing cries from above he promptly decamped, realising that he had caused damage which he did not care to face.

"(c) Another lift accident, which might have easily killed the adventurous person to whom it happened, occurred entirely through undue curiosity. An immigrant lad being in the building wished to look down the lift shaft. He climbed by the baluster till he was able to put his head over the brass rod carrying the protecting wire netting. The corner of the descending cage struck his head, causing some bruising and a nasty cut.

"Several new lifts were installed during the year, most of them during my absence from the State. I understand from Inspector Booth that they are all of superior type, and that the doors of all the passenger lifts and some of the goods lifts have been arranged so that they are electrically connected to the lift control mechanism in such a manner that the cage cannot be moved unless all doors are closed and locked, and moreover that no door can be opened unless the cage is opposite the door. It is hoped that all passenger lifts will soon be similarly fitted. This is most necessary in the interests of safety.

"I am still strongly of the opinion that lifts do not receive the attention they should at the hands of this Department. I pointed out last year that only one inspection per year is provided for by the present Act. I contend that this is not enough, and it is with a good deal of anxiety that I sign certificates stating than any given lift is 'fit for the purpose stated below until'—a year hence.

"The number of lives handled per day in some of the lifts in Perth is very large—far larger than in any mine in the State. One of the lifts in a large store in Perth carries, at times, 700 to 800 passengers per hour, and the wear and tear entailed by such heavy work is very considerable.

"It is not possible to predict with any certainty that such a lift will continue to run with due safety for a whole year.

"In the Mines Regulation Act all sorts of provisions are made for the frequent inspection and recording of the condition of ropes, safety appliances, etc., and the Inspectors of Machinery are thereby relieved of much responsibility. Of course in some ways the danger in a mining cage is greater than in a lift. But on the other hand all the men using a mining cage are more or less trained in its use, and the winding apparatus is controlled by a skilled and certificated driver. In lifts, women and children, knowing nothing of the risks they run, are the most frequent passengers, and the control is often in the hands of mere boys.

"On my return from long service leave I had hoped that I should find an Inspector had been appointed to take the place of Inspector Tickle. No such appointment has been made, as you are aware, and inspection work is consequently badly behind hand.

"The inspection of boilers is fairly up to date, but on 31st December there were 209 machinery inspections overdue in the metropolitan area. Some of these machines have not been seen since 1909. Of course no revenue has been collected for such overdue inspections.

"There are, as I remarked last year, a large number of unregistered plants working, and these will, for the most part, have to remain unregistered until more help is obtained, and in the meantime the revenue derivable from such plants is lost, and the law is being broken.

"Whilst on leave in England, I visited, at your request, my old firm the National Boiler and General Insurance Co., of which Mr. Edward Hiller is Chief Engineer, and also the Manchester Steam Users' Association, of which Mr. C. E. Stromeyer is Chief Engineer. At both places I was met with great courtesy, and full opportunity was given me of looking into their methods of working, and inspecting their testing apparatus for strength of materials, and their laboratories for analysis of water, oil, fuel, etc.

"I was fortunate in securing a large quantity of their printed matter, including circulars, instructions to steam engine-drivers, boiler attendants, internal combustion engine-drivers, and motor and dynamo attendants, and other interesting and useful matter.

"In both of these large concerns there are different departments for boilers, steam-engines, internal combustion engines and electrical plants. Each department has its own sufficient staff, and is well supplied with all the necessary appliances to enable them to carry out, not only the ordinary everyday work, but also a considerable amount of most useful research work. Both concerns are run on a commercial basis, and they find that it pays to have an ample staff, and to provide it with a full equipment in the way of apparatus.

"The effect of these methods is that all they undertake is done thoroughly, and with a wealth of detail that I fear would shock many of those in this State who have been in the habit of cavilling at this Department, and objecting to even the comparatively small amount of detailed information insisted upon by it.

"It was satisfactory to find that we are working on much the same lines, with regard to the more essential details, as these two companies, who are easily the oldest and best respected concerns of this kind in the world.

"In English workshops visited I did not notice any very marked improvement in the method of protecting danger points in machinery as compared with those recomended by this Department.

"With regard to steam boiler accidents and explosions, the extraordinary immunity enjoyed by this State struck me as very satisfactory, and this feeling was intensified by the knowledge that here this Department has to inspect *every* boiler in the State, and has perforce to take risks which no self-respecting insurance company would dream of, such as the effects of some of our very bad feed waters, and the fact that a large percentage of boilers are run by agriculturists or other entirely unskilled persons.

"Insurance companies do not take bad risks, and consequently all boilers insured by them are in a sense picked boilers.

"In conclusion, I hope that during the coming year our Act may be so amended as to provide for more frequent lift inspections and other badly needed alterations."

Mr. G. P. McCulloch, Inspector of Machinery, in charge of the North Coolgardie, Mount Margaret, and portion of the East Murchison Districts, located at Leonora, remarks:—

"During the year a portion of the East Murchison District, including 86 useful boilers and many groups of machinery, was transferred to my supervision. In the Mt. Margaret and North Coolgardie Districts there is a decrease of 30 in the number of registered boilers which are still useful, as against the number at end of 1911. In these two districts the number of boilers *in use* is only 159, as against 186 at end of 1911. This is a discouraging sign as to the further steady retrogression of these districts. The decrease is, however, partly accounted for by the increased use of suction gas engines and electric motors, as will be seen later on.

"*New Boilers registered.*—Only three new boilers were registered in the combined districts during the year, and of these one was branded in Kalgoorlie. The remaining two are:—

"(a) Stirling water tube boiler at the Gladsome Syndicate, Comet Vale, North Coolgardie District, and

"(b) Loco on Sons of Gwalia wood line, Mt. Margaret District, by Orenstein & Koppel, Germany.

"As regards maintenance and care of boilers I am glad to say that, as during the preceding year, this remains very good in the great majority of cases, although the remarks in your annual report for 1911 still hold good in a few instances.

"*Re* explosions, interesting defects, etc., the only unusual incident which marked the year's work was the breaking of the blow-off bend on a Cornish boiler, after blowing the same down. As the break was perfectly clean and showed good metal all round, I can only explain the occurrence by the possibility of either the boiler having been left standing with water in it during frosty weather, or else the blow-off bend having received a heavy blow at some time.

"Number of Fourth Schedules issued: Mt. Margaret *nil,* North Coolgardie 5, East Murchison 3, showing a gratifying decrease from last year.

"It is also gratifying to note that there have been no fatal accidents during the year, and none even very serious.

"The only mishap to machinery worth noting was at the Mines Water Supply Pumping Station at Davyhurst, and was caused by the failure of the connecting rod bolts in an ordinary oil engine, the accident thus being of the same nature as the several suction gas engine accidents which occurred during the preceding year. In the present case the connecting rod was bent, the cylinder liner cracked, and the piston broken. The connecting rod bolts in this instance had no lock nuts, the nuts being secured by locked plates fitting over the nut and secured by screws. This is a very bad arrangement for internal combustion engines, as it renders the brasses incapable of adjustment within one-sixth of the turn of the nuts on the head bolts, which may allow too much play in the brasses of this type of prime mover.

"There have been no engine-drivers' examinations in my district during the year, and I am glad to say, only two complaints.

"There are, up to date, no overspeed or overwinding devices in my districts, but the new engine at the Sons of Gwalia will, I understand, be fitted with one of the Vizor and Whitmore type.

"The total number of thorough inspections made in the three districts during the year totals: boilers 200, machinery 130. This totals 12 less as regards boilers, and 29 less as regards machinery, than last year; but in addition I carried out inspections in the Yilgarn, Coolgardie, and Broad Arrow Districts, which much more than compensates for the lesser work in my own districts.

"The mileage travelled during the 12 months was as follows:—

District.	Road.	Rail.	Total.
Mt. Margaret	1988	1342	2330
N. Coolgardie	1330	1538	2868
E. Murchison	1116	—	1116
Total	4434	2880	7314

"Compared with last year's figures this works out as follows:—

"Mt. Margaret, 444 more miles travelled by road, and 524 miles less by rail; the total mileage travelled being 80 less than last year.

"North Coolgardie, 368 more miles travelled by road, and 484 miles less by rail; the total mileage travelled being 116 less than last year.

"East Murchison, 946 more miles travelled by road, owing to the additional portion of this district brought within my jurisdiction as aforesaid.

"The difference is, of course, due to the fact that as I now have a motor-car, and the train service is getting scarcer, it is often more convenient in the matter of time to make a trip by road which, if I only had horses to depend upon, would otherwise be taken by rail, at greater expense. You will observe that the *total* mileage travelled is slightly less in both Mt. Margaret and North Coolgardie Districts, the increase in the East Murchison being entirely due to the extension of my jurisdiction in this district.

"In addition to the above, however, I travelled 604 miles by road and 541 by rail in relief work in other districts, making the total for the year 5,038 by road and 3,421 by rail, or 8,459 in all, being 1,225 miles more than last year, due, of course, partly to the extension of my districts and partly to the work I have been doing outside them.

"Taking a general retrospect of the year's work, I am glad to say it is chiefly distinguished by being a very normal one unmarked by any bad accidents, prosecutions, or trouble of any kind whatever.

"There have been five more suction gas engines installed in the Mt. Margaret district during the year, and in addition to this, all the engines installed are now actually in use. Six more electric motors have also been installed in the same district.

"As regards the North Coolgardie District, there have been no new installations of either type.

"The above figures partially compensate for the fact that there are 27 fewer boilers in use as compared with those under steam at the end of 1911. Moreover, the Lancefield Mine being shut down alone accounts for a considerable number of boilers thrown out of commission, it is to be hoped only temporarily.

"As regards my districts as a whole, it is every day becoming more increasingly evident that every cause which will lessen the costs of mining and milling must eventually open up huge fields, hitherto unpayable, but which with sufficient reduction in working costs may contribute to an era of prosperity quite as brilliant and more consistent than anything that has gone before. For instance, there are several cases of mines possessing large bodies of soft schist and kaolin ores, averaging say 4 dwts. throughout, which, with small plants consisting of, say, one or two Huntingdon mills driven by suction gas engines also operating a friction winch with a self-dumping skip, may become more payable propositions than much higher grade ones where the smallness of the reef or lode, its hardness and metallurgical difficulties combine to render the mining and milling costs proportionately much higher.

"Amongst the other interesting factors which have come beneath my notice during the year, I would mention the "Alumino-ferric" treatment of the feed-water on the Sons of Gwalia Mine, which so far has given brilliant results in eliminating the oil coming over from the engines into the condensing plant. Up till this time I have always pinned my faith only to the type of oil separator which is fitted on to the exhaust pipe of this engine close to the cylinders, and separates the oil from the steam. This type has always given satisfactory results within my experience, but is somewhat expensive to instal. The new process mentioned is, however, giving equally good results to date by treating the feed-water, and is being watched by me with keen interest on that account. In this connection also, I may remark that the manager of the Sand Queen G.M. reports very satisfactory results from a "Hotchkiss' oil separator fitted to the crown of one of their Cornish boilers.

"The treatment of the feed-water with soda ash as practised on the Sons of Gwalia Mine also is still giving most satisfactory results, as regards the elimination of scale forming ingredients, before the feed-water enters the boiler.

"I wish in conclusion to express my thanks to the clerical staff and my colleagues the Inspectors of Mines who, without exception, by their co-operation and cordiality have rendered me valuable assistance in an undoubtedly busy year."

Mr. J. Stone, Inspector of Machinery in the South-Western District, remarks:—

"The operations of 'The Inspection of Machinery Act, 1904,' have been fairly successful, and have worked smoothly in the portion of the South-Western District in which I have been engaged during the year 1912.

There has been a steady increase in the number of boilers and of all classes of machinery during the year, and a number of plants which have been out of use for some time are being brought into commission again. This is due to the development of the great natural resources of this portion of this State, the future prospects for further increases are fairly good, several new plants are now in course of erection, and others are on order.

"Some of the additional plants are second-hand, and have previously been erected in Goldfields Districts, whilst others are new, some imported, others built in the State.

"Maintenance of boilers generally has been very fair, although during the early portion of the year the quality of feed-water was inferior to that of other years, but during the latter months the supplies improved considerably.

"*Feed-water, etc.*—I have noticed that throughout the Darling Ranges the water of running streams is fairly good for boiler purposes, but where taken from wells, springs, or swamps it is very 'searching' and a leakage will never 'take up,' and although the water may not cause internal corrosion, where a leakage occurs corrosion is very rapid where the steam and the atmosphere meet, and in many cases more damage is done by external than by internal corrosion.

"This water is somewhat severe on tubes, some of the tubes of the traction engines recently purchased by the Agricultural Department were corroded through in less than four months. I have found by experience that the addition of a little lime has a beneficial effect, and have advocated its use where practicable. The experts of the Agricultural Department consider our South-West lands are deficient in lime, and are strongly advocating its use for fertilising purposes; probably in the course of a few years this may improve our water supplies.

"We have now about as varied a range of boilers in this State as would be found anywhere; we have some of the most modern of steam generating appliances, as well as some of the most ancient, also some very curious makeshifts.

"Some years ago I saw two very old Cornish boilers approximately 30ft. x 6ft. 6in.; in each shell there were 15 courses of plates with five plates in each course, thus taking 75 plates to make each shell and five plates to make each end. Quite recently I inspected a boiler of modern type, 30ft. x 8ft. 6in., the shell of which was made up of five plates only, each end being in one solid cambered plate without gussett stays, thus showing ancient and modern practice both in the building of boilers and manufacture of plates.

"Some few years since I was shown what was claimed to be the first boiler used in the Toodyay district. The boiler consisted of the dome of a locomotive approximately 3ft. x 1ft. 9in., a piece of plate was bent and attached to bottom of dome where it had been fitted to barrel, one of the old settlers riveted this on, whilst his daughter held up the rivets. Boiler was then set in brickwork with firegrate underneath, one safety valve was fitted, also two test cocks, all of which were hand made. No pressure gauge or water gauge could be obtained. Boiler was fed by a small hand pump (home-made), feed pipe, which was an ordinary gun barrel, was fitted through crown and extended nearly to bottom of boiler, the connecting pipe between feed pump and boiler was of lead and had previously been used for a beer pump in a hotel. This appliance worked for several years, but would scarcely comply with present day requirements.

"*Repairs.*—Owing to the large percentage of very old boilers in this District, the repair list has again been very heavy, and is likely to continue so. With one or two exceptions repairs have been carried out by experienced workmen and completed in a satisfactory manner. In one case, however, the instructions issued by this Department were not strictly adhered to, and therefore a satisfactory working pressure could not be granted.

"I have always discouraged 'temporary repairs or patchwork,' and have advocated permanent repairs in order to restore the boiler to, as nearly as possible, its original strength.

"*Machinery.*—The inspection of machinery has been carried out as usual during the past year, but owing to a large number of plants being of a portable or temporary nature and are being constantly erected or dismantled, it is very difficult to keep same well in hand. Saw milling machinery requires considerable attention, especially during the erection of a mill; the usual course is to get one or two saws going, and continue the building of the mill, and as each portion is finished it is brought into use. In some cases these building operations extend over twelve to eighteen months, therefore to deal with them in a comprehensive manner it would be necessary to make much more frequent visits than can be arranged under present working conditions.

"The guarding of machinery generally is a very much more difficult problem than it appears, and to make machinery absolutely safe would, in many cases, make it practically inoperative. I consider that so long as machinery is used there will always be an element of danger, but as far as I can see, the greatest difficulty is experienced in preventing workmen from taking more than an ordinary working risk. I have frequently seen them take unnecessary risks getting over fences and guards which have been erected for their protection, and even crawling through or under belts in motion in preference to walking a few yards.

"*Engine-drivers.*—The provisions relating to engine-drivers have been strictly observed in this district, and very little trouble was experienced. A few complaints were made, but upon investigation nothing of a serious nature was disclosed. A number of men are qualifying for examination, but owing to the lack of facilities for technical education they are at a great disadvantage as compared with the candidates from Perth and Kalgoorlie.

"During the year I have worked a considerable amount of overtime, including Sundays and holidays, and the bulk of my clerical work has been done in my own time. Notwithstanding this I found at the end of the year that my inspection work was not up to date, and I have not been able to make nearly so many surprise visits or working inspections as I should like to have done; in addition to this I have every reason to believe there are still several small plants which have not been registered.

"The State saw-milling industry will provide a fair amount of additional work, and there is every prospect of expansion in other directions. The district at present is about the heaviest in the State."

Mr. W. Churchill, Inspector of Machinery for Murchison and Yalgoo, Sandstone, and portion of South-Western District, remarks:—

"The number of useful boilers upon my registers on 31st December, 1912, is:—Murchison and Yalgoo 292, Sandstone 55.

"As regards Sandstone a very large reduction in number of useful boilers appears, as a large number are now included in Lawlers to Wiluna district of East Murchison which is now worked from Leonora office.

"There has not been a single new boiler brought into either of Murchison and Yalgoo or Sandstone districts during year 1912.

"*Operations for year.*—My intended programme for 1912 has been somewhat interrupted firstly on account of my taking accumulated leave during January and February, which time in Perth was extended further to enable me to complete arrangements in connection with taking over work in portion of South-Western district extending from Mullewa and Northampton to Gin Gin and Chittering Brook.

"In addition to this my services were requisitioned in a law suit in connection with Cue-Day Dawn Water Board, necessitating two separate visits to Perth and much loss of time.

"Notwithstanding this I have been able to carry out 69 thorough inspections in Murchison and Yalgoo and 27 thorough in Sandstone, also numerous working inspections whenever opportunity offered, bringing practically all boiler inspections up to date with exception of one at Gullewa and one at Yuin in Murchison and Yalgoo, four at Sandstone, and one at Montagu in Sandstone. These four at Sandstone will be taken within next week or two, and would have been taken on regular date had I not been called to office urgently in middle of tour.

"In portion of South-Western District I have made 51 thorough inspections and working inspections whenever opportunity offered. These inspections were all in localities strange to me, and not the least amount of work was entailed in locating the plant, as, unlike mining districts, the machinery in the agricultural districts is very much scattered, and also are almost all isolated boilers.

"Some few plants in this district are overdue owing to my not being able to locate them or reach them in time allotted for tour, and in one case owing to my return to office on urgent business during tour. I have arranged a programme for this coming year which I hope will enable me to bring all inspections up to date.

"*Maintenance, etc.*—Generally speaking I consider maintenance of boilers and machinery to be very good in these districts, the exceptions being those who are so very busy getting gold that they have not time to consider the economy of caring for plant, and to whom cost of renewals and repairs seems to be no object, and others who have not the means to keep plant as they would like.

"I cannot say that I have anything in the way of interesting defects to report upon this year; likewise I have no prosecutions to report, although in one or two cases matter of collection of fees has had to be referred to Crown Law Department.

"*Re Machinery.*—Although boiler inspections are practically up to date, there are some groups of machinery which are now overdue, but these will be brought up on occasion of my first visit to its locality in this coming year.

"In Murchison and Yalgoo there are five electric lighting plants and one electric lighting and power installation, 13 air compressing plants, and only one refrigerating plant working.

"In Sandstone there are two electric lighting plants, six air compressing plants and one only refrigerating plant working.

"I have no cases of novel or interesting application of power to report.

"There have been seven notices issued for repairs or fencing to machinery, and many other cases where fencing has been agreed upon and carried out at once, avoiding the necessity of issuing orders.

"*Engine-drivers.*—I have not noticed, nor have I received any complaints as to misconduct on part of any drivers in these districts; on the contrary I find them to be a class of men who value their own reputations too well to allow themselves to become chargeable with neglect or misconduct.

"During the year my headquarters have been removed from Cue to Geraldton, as being a more convenient centre for re-adjusted districts. This was considered advisable in view of decrease of plants working on goldfields and increase of plants working on coastal and agricultural districts. This readjustment relieves me of work from Lawlers to Wiluna in East Murchison, and allows me to do work from Northampton to Gingin in South-Western district, thus relieving one of the Perth inspectors; although distance of office from some of the plants is greater than previously, the time necessary to reach farthest plant is much less and also less costly, as I am now enabled to do much of my travelling by train.

"I have reason to believe that there are many small oil engines being worked in South-Western part of my district, but cannot deal with these until a visit has been made, and as visit may cost anything up to four times the value of fees receivable, and moreover exact localities are not known to me, it is necessarily a matter of opportunity to be able to add these to our registers."

Mr. D. F. Booth, Inspector of Machinery for the South-Western District, remarks:—

"Since 12th April I have been relieving Inspector Gill in the Metropolitan area. For this reason the Great Southern Railway districts were somewhat neglected. Although Inspector Lee did considerable work there, there were 35 boilers and very many groups of machinery overdue on that line at 31st December, 1912.

"I have made twenty (20) new boiler registrations; of these one was an old locomotive boiler from W.A.G. Railways, now used as a stationary. One only, a Cornish, was built in W.A.; one, a locomotive from Whim Creek, which has since been returned to there.

"Two very old Tangye vertical boilers which had been working for some years in unproclaimed areas in the North.

"A return multitubular stationary was built at Fremantle several years ago for a steam launch. During this year it was re-erected as a stationary at Jandakot. Of the remainder two were made in Victoria, and three others should, in my opinion, have been made in W.A. If the makers of boilers in this State were as pushful as the importers' agents are, there would not be so much money going out of the country for this class of work.

"Maintenance is improving year by year. Owners are learning that it pays better to keep joints tight and wash out oftener than they formerly did.

"The water supplied from Mundaring Weir has lost most of its corrosive properties since the Department has been treating the whole of it with caustic lime.

"Perth water is also getting better as a boiler-feed water than it was. I am not sure of the reason for this, but have noticed that the scale which had accumulated on many boilers has flaked off, and the pitting is very much less active since the deep bore at Leederville has been in use. Fremantle water, which at one time was almost the hardest in the world, has been gradually improving for several years. In 1896-7 I often found the hardness as high as 64deg., now it seldom exceeds 16deg. I attribute this fall in hardness to the fact that so much larger quantities are being drawn from the well that the water does not lie so long in the limestone rock, and therefore has not time to dissolve the lime. The use of carbonate of soda (which is the chief ingredient of most of the boiler fluids) with fairly frequent washing out is sufficient to keep the plates and tubes of boilers clean,

whereas it was almost impossible to work boilers with this water unless it was softened before entering the boiler.

"During the year I inspected 538 groups of machinery, of which 121 were new registrations. At the end of the year there were 209 groups overdue in the Metropolitan area, and 113 in the Great Southern area, besides 96 which have not yet been registered in the latter area, but of which I know the localities, and probably 40 in the former area not now known.

"These make 452 groups which are now overdue at the end of the year. It appears to me that something should be done to reduce this number.

"My issue of Fourth Schedules has been rather more numerous than usual (155), firstly on account of the unusual number of new registrations (121), and secondly because I have been convinced that in former years I had not been sufficiently impressed with the necessity of trying to make machinery as nearly 'fool-proof' as possible. Open gear wheels and unguarded belting have been responsible for most of these Fourth Schedules. Bad fastenings to doors of lift wells have also been the cause of many repair orders, but I am pleased to say that most of the new lifts (13) which have been installed are better fitted in this respect, and after the proposed conference between this Department and the W.A. Institute. of Architects it is to be hoped that this and many other faults in regard to lifts will be things of the past."

DIVISION VII.

ANNUAL REPORT OF THE GOVERNMENT ANALYST, CHIEF INSPECTOR OF EXPLOSIVES, AND AGRICULTURAL CHEMIST, FOR 1912.

To the Under Secretary for Mines, Perth.

Sir,

I have the honour to submit, for the information of the Hon. the Minister, my seventeenth Annual Report on the duties performed by me during the year 1912.

Although the year has been a busy one, it has not been marked by any outstanding features. The investigatory work of one kind and another which has been in hand has led to a certain amount of development, but not such as yet allows of very definite conclusions, except perhaps in one respect, namely, in regard to the question which occupied a prominent place in my last annual report, that of the gases derived from explosives. Throughout the year from various sources data have been collected which have gone to confirm the opinions expressed under this heading in my last report. Samples specially sent to me by manufacturers in the Old World for experimental purposes, as well as ordinary stocks, which have been under observation in different parts of the State, all show a marked tendency on storage towards a loss of velocity of detonation, and several instances have occurred, similar to that described in my last report, of explosives which have so far lost their sensitiveness as in my opinion to be unfit for use in mines. I have, therefore, felt compelled to submit a definite recommendation to the Government that the regulations should be amended so as to specify certain minimum velocities of detonation as requisite in the different classes of explosives.

Meanwhile very interesting and instructive experiments have been going on in my laboratory with a view to trying to determine what is the cause of this insensitiveness, and I am hopeful that during the next year or two these experiments will lead to some definite conclusion, but it is quite evident that before the proper control and supervision of explosives with a view to their suitability for use as well as safety on storage can be established a testing station has become imperative on the lines already laid down in special reports to the Government. All the more advanced countries now are providing these stations, including South Africa and Canada, and it seems inadvisable that Australia alone should lag behind. The expense, though fairly considerable, is nothing as compared with the additional safety to life which this testing station would afford, and the greater efficiency and comfort of workmen which should be engendered by the results of its operation. I sincerely hope that this matter will not be any longer delayed, but will be taken into consideration by the Government so that we may shortly have such a station as an accomplished fact in this State.

It is impossible for an inspector to carry the necessary responsibility for the control of explosives in these directions unless he is provided with the most ample and up-to-date methods of investigation. Should the Government finally decide to adopt my recommendation for prescribing physical tests this will, I think, be the first instance of such a step being taken, but I do not see that this State need be afraid of taking the lead in an advancement which has become very obviously necessary.

PURE FOODS.

A large amount of time and labour was spent during the year on the work of the Pure Foods Advisory Committee, who have completed a series of standards for foods, and a set of standard methods of analysis. Its labours have been sufficiently before the public and should not require much comment.

The regulations with regard to infants' and invalids' foods, patent and proprietary medicines, and potable spirits have all attracted a great deal of attention and criticism all over the world, and instead of commenting upon them at this stage it would be better to await the result of their practical trial. Ample opportunity will be found for this during the coming year, as the regulations come into force on the 1st May next.

FEDERAL CUSTOMS WORK.

I beg to definitely suggest to the Government the advisability of considering the cessation of work on behalf of the Customs Department in this laboratory. With the present shortage of staff it is extremely difficult to get through the work of the department, and with the coming into operation of the Pure Foods law this work will be immensely increased, while it does not appear as if carrying out this work for the Federal Government were in any way a profitable enterprise for the State.

AGRICULTURAL WORK.

During the year an interesting series of experiments have been going on in the pot culture shed which was erected during the year at the rear of my laboratory. This, which is the first pot culture experiment equipment which has been at work in this State, has been occupied by some investigations as to the conditions which influence the development of strength in wheat. Owing to the unfavourable season last year it is doubtful whether the results will be so good as would otherwise have been the case, but it is hoped that when the results of the experiments have been fully tabulated some interesting data will be available.

SPECIAL TESTS ON EXPLOSIVES.

The experiments mentioned under this heading in my last report have been continued during the year, and although the results are not such as it is advisable for me to publish in this report (especially as many of them are obtained on samples provided by manufacturers) I think I may say that they will be of material assistance to me in the general question of control of explosives.

VISIT TO ENGLAND.

In connection with many of the subjects of investigation which I have in hand it would obviously be of immense advantage to me at the present time to be able to visit England and the Continent, and make myself familiar with modern progress in the various technical subjects concerned. During the year the possibility of such a visit was discussed, but up to the present nothing has eventuated. I am hopeful, however, that perhaps an opportunity will be found during the coming twelve months as I feel that such a visit is necessitated by the isolation from which naturally a professional man suffers in this State, and that the resulting benefit to the State as a whole may well be considered an equivalent to the cost of such a journey.

IMPORTATION OF EXPLOSIVES.

TABLE I.

Importation for 1912.

	Quantities. lbs.	Values. £
Gelignite	2,779,002	109,457
Dynamite	32,500	1,692
Blasting Gelatine ...	208,500	10,671
Gelatine Dynamite...	241,500	13,186
Detonators (Number)	3,109,240	4,983
Fuse (coils) ...	212,027	3,566
Powder, Blasting ...	448,500	10,862
Powder, Sporting ...	3,946	235
Fireworks	...	163
Cartridges and Caps	...	9,014
Explosives, N.E.I. ...	...	84
		£163,913

TABLE II.

Comparison of Importations for the last Five Years.

	1908. £	1909. £	1910. £	1911. £	1912. £
Nitro-glycerine Compounds...	124,354	121,813	170,363	143,608	135,006
Blasting Powder	2,896	6,163	7,026	4,090	10,862
Sporting Powder	133	65	142	546	235
Fuse	11.265	10,920	10,723	12.778	3,566
Fireworks	312	385	413	214	163
Cartridges	15,099	9,924	12,908	...	9,014
Detonators	3,341	4,804	5,870	4,796	4,983
N.E.I.	26	12	200	159	84
Totals	157,426	154,086	207,645	166,191	163,913

TABLE III.

Kinds and Quantities of Principal Industrial Explosives Imported in 1911-12.

	1911. lbs.	1912. lbs.
Gelignite	3,038,250	2,779,002
Blasting Gelatine ...	245,150	208,500
Gelatine Dynamite...	283,500	241,500
Dynamite	12,500	32,500
Blasting Powder ...	146,150	448,500
Sporting Powder ...	9,650	3,946
Total	3,735,200	3,713,948

TABLE IV.

Comparison with other States.

Explosives, etc.	Western Australia.	New South Wales.	Queensland	Victoria.	South Australia.	Tasmania.	Proportion of total for Australia imported into W.A.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	%
Nitro-Glycerine Compounds ..	3,261,502	2,476,350	862,140	1,299,130	838,550	283,500	
Blasting Powder	448,500	1,193,005	499,500	460,100	152,415	66,600	
Sporting Powder	3,946	18,985	13,250	126,428	32,377	12,575	
	3,713,948	3,688,340	1,374,890	1,885,658	1,023,342	362,675	30·82
	£	£	£	£	£	£	
Fuse	3,566	7,126	4,474	1,164	4,187	Not given	
Detonators	4,983	4,620	2,850	4,763	2,283	986	
Explosives, N.E.I. (Does not include Naval or Military Explosives)	9,261	20,108	18,261	69,794	9,981	3,002	
	17,810	31,854	25,585	75,721	16,451	3,988	10·39
Total Value of Explosives enumerated	163,913	165,145	75,117	154,127	60,185	21,326	25·61

It will be seen that the tables show a slight falling off in importations, as compared with last year, but it is rather remarkable that the falling off has not been greater, in view of the contraction of mining enterprises. The testing involved in the examination of these explosives naturally shows a corresponding diminution so far as the routine tests are concerned, there being only 2,070 against 3,440 of the previous year, but these totals are considerably augmented when the special research work of various kinds is taken into consideration. Under these headings the following work was performed during the year:—

TABLE V.

Tests made on Explosives.

	1911.	1912.
Gelignite...	1,125	1,307
Fuse	1,868	431
Gelatine Dynamite ...	139	116
Blasting Gelatine ...	313	212
Dynamite	...	4
Miscellaneous	186	...
Total ...	3,631	2,070

SPECIAL INVESTIGATIONS.

21 samples Gelignite
10 ,, Blasting Gelatine
2 ,, Gelatine Dynamite
2 ,, Rippite

Determinations of:—

Density	61
Heat Test	120
Moisture...	75
Velocity of Detonation	141
Colour Records	6
Exudation and Liquefaction ...	6
Microscopic	3
	412

Other Determinations:—

Specific Gravities	104
Optical Rotation	34
Acidity	11
Electrical Resistance	28
Diffusion	26
Velocity of Ions...	154
Microscopic	9
Spectrographic	60
Viscosity...	186
Total	612
Grand Total ...	1,024

so that altogether the number of explosive samples examined total 3,094.

STORAGE.

Owing to the diminution of the mining industry and consequent decline of many of the smaller towns on the goldfields where depôts of explosives had to be kept, the consumption of explosives on the fields is very much diminished, and has necessitated a reduction by merchants in the licensed capacity of their magazines. Although this may not be apparent from the figures below, it will make its effect felt during the coming year.

The number of explosives reserves totals 49, with an acreage of 3,023 acres. The Fremantle Reserve has been improved during the year by the completion of a considerable amount of ballasting on the siding, making the railway line much more workable and convenient. The Kalgoorlie Magazine Reserve has been fully inspected with a view to its removal, and I expect that this removal will be accomplished during the next six months.

LICENSED PREMISES.

Licenses issued for storage and sale of explosives during the year were as follows:—

Licenses for magazines on reserves	82
Licenses for magazines off reserves	46
Store Licenses—	
New licenses issued	18
Licenses remaining in force for ordinary stores	125
Licenses issued for fireworks	106
Total No. of licensed premises ..	377
Licenses revoked	9

INSPECTIONS MADE.

Total inspections made during the year were 198, and included the following localities:—Albany, Beverley, Katanning, Darkan, Narrogin, Broomehill, York, Bunbury, Busselton, Harvey, Yarloop, Guildford, Swan View, Bellevue, Mahogany Creek, Kalgoorlie, Coolgardie, Norseman, Kanowna, Menzies, Kookynie, Malcolm, Morgans, Laverton, Leonora, Lawlers, Sandstone, Youanmi, Magnet, Cue, Day Dawn, Nannine, Meekatharra, Yalgoo, Geraldton, Mingenew, Moora, Midland Junction, Fremantle, Bridgetown, Greenbushes, Donnybrook, Capel, Pingelly, Wagin, Williams. As a result of this inspection work the following prosecution was instituted:—

Date, 4th February, 1912; Busselton; offence: overstocking explosives; penalty: fined £1, costs £1.

It was also found necessary to condemn and destroy the following explosives:—

Date.	Place.	Kind and Quantity.	Remarks.
February 2nd, 1912	Yarloop	15lbs. gelignite, 1,400 detonators	Wet.
February 14th, 1912	York	200lbs. gelignite	Exudation.
March 18th, 1912	Albany	8lbs. dynamite	do.
May 7th, 1912	Fremantle	50lbs. gelignite	Wet.
July 11th, 1912	Do.	2,150lbs. blasting gelatine ..	Low Heat Test.
October 31st, 1912	Kalgoorlie	7,300 detonators	Old stock.

GENERAL ANALYTICAL WORK.

As a summary of the usual laboratory work under my control I give the following tables:—

TABLE VI.

General Classification of Analyses.

Explosives	2,070
Spirits	226
Waters	210
Soils	342
Fertilisers	104
Rocks	16
Essences	39
Oils	203
Foodstuffs	118
Sewage	394
Wheats and Flours	8
Criminal Investigations	85
Lime	37
Fabrics	56
Vinegar	11
Medicinal Compounds	82
Milk	704
Kerosene, Benzine, Turpentine, etc.	66
Toilet Preparations	9
Hydrometers	29
Matches	9
Dairy Thermometers	52
Miscellaneous	233
Total	5,103

TABLE VII.

Departments for which work was performed.

Explosives	2,070
Customs	802
Health	903
Mines	232
Public Works Department	484
Railways	4
Goldfields Water Supply	72
Agricultural	284
Police (Criminal Investigation) ..	102
Private	56
Liquors	68
Miscellaneous	26
Total	5,103

These figures, like those in connection with explosives, show a falling-off as compared with those of previous years, which is, I presume, a natural accompaniment of the general financial depression of the State. The staff have, however, been very busy, and there is no doubt that a change in the character of the work performed (which cannot, of course, be shown in the tables) made it quite as exacting as in previous years.

The staff at the end of 1912 consisted of the following officers:—

Assistant Government Analyst	1
Assistant Inspector of Explosives ..	1
Analysts	9
Clerical Staff	3
Magazine Keepers	2
Watchmen	2
Total	18

I beg to acknowledge with thanks the assistance rendered me by the Commissioner of Police and his officers, and by the State Mining Engineer and the Inspectors of Mines.

I have, etc.,

E. A. MANN,
Government Analyst, Chief Inspector of Explosives, and Agricultural Chemist.

6th March, 1913.

WESTERN AUSTRALIA.

DEPARTMENT OF MINES.

MINING STATISTICS,

1912.

MINING STATISTICS TO 31st DECEMBER, 1912.

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EXPLANATIONS OF SIGNS AND ABBREVIATIONS.

Gf. Goldfield.
Mf. Mineral field.
D. District.
G.M.L. Gold Mining Lease.
M.L. Mineral Lease.
Loc. Location.
L.C. Lode Claim.
Q.C. Quartz Claim.
R.C. Reward Claim.
M.R.C. Mineral Reward Claim
M.A. Machinery Area.
Mach. L. Machinery Lease.
P.A. Prospecting Area.
T.A. Tailings Area.
T.L. Tailings Lease.
W.R. Water Right.
S.L. Special License.

WESTERN AUSTRALIA.

SUMMARY OF MINERAL PRODUCTS.

GOLD AND OTHER MINERALS PRODUCED DURING 1912, AND THE ESTIMATED VALUE THEREOF, TOGETHER WITH A COMPARISON FOR PREVIOUS YEARS, AND THE TOTAL PRODUCTION TO DATE.

Description of Mineral.	1912.		1911.		1910.		1909.		Previous to 1909.		Total to date.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
		£		£		£		£		£		£
1. Antimony ... ... (Exported) statute tons	...	...	...	...	...	...	...	...	47	860	47	860
2. Asbestos ... ... (Reported) do.	...	...	...	...	...	...	3	154	40	1,600	43	1,754
3. Coal ... ... (Reported) do.	295,079	135,857	249,899	111,154	262,166	113,699	214,302	90,965	1,301,690	617,760	2,323,136	1,069,435
4. Copper { Ore ... (Exported) do.	9,556	59,388	9,825	33,709	6,309	27,271	6,959	59,541	24,499	401,528	57,148	581,437
4. Copper { Ingot & Matte (Exported) do.	8	1,149	828	44,409	1,281	68,657	833	45 100	5,699	372,310	8,649	531,625
5. Gold (Exported and Minted) fine ounces	1,282,658	5,448,385	1,370,867	5,823,075	1,470,632	6 246,848	1,595,269	6,776 274	20,011,699	85,004,290	25,731,125	109,298,872
6. Ironstone ... ... (Reported) statute tons	...	...	...	...	10	12	...	...	57,820	36,683	57,830	36,695
7. Lead Ore ... ... (Exported) do.	1,868	22,565	1,549	15,002	248	1,433	...	...	33,644	364,756	37,309	403,756
8. Limestone ... ... (Reported) do.	...	...	...	...	...	...	...	...	93,706	18,290	93,706	18,290
9. Mica ... ... (Exported) do.	...	...	...	...	...	...	...	...	†	304	...	304
10. Pig Lead ... ... (Exported) do.	...	...	...	...	...	...	...	...	684	13,306	684	13,306
11. Pyritic Ore ... ... (Reported) do.	7,626	2,543	9,939	3,529	...	...	...	...	...	...	17,565	6,072
12. Scheelite ... ... (Exported) do.	...	...	...	...	...	...	...	...	4	140	4	140
13. Silver ... ... (Exported) fine ounces	138,039	16,353	169,043	18,333	176,139	18,777	176,843	18,778	1,739,823	211,607	2,399,887	283,848
14. Silver Lead Ore ... (Exported) statute tons	...	...	...	...	...	...	211	1,199	729	6,872	940	8,071
15. Tantalite ... ... (Exported) do.	...	...	...	...	...	...	...	...	18	6,129	18	6,129
16. Tin (Ore and Ingot). (Exported) do.	575	70,578	495	55,220	500	45,129	698	62,989	9,815	817,239	12,083	1,051,155
17. Wolfram ... ... (Exported) do.	...	...	9	826	2	190	1	100	...	...	12	1,116
18. Zinc ... ... (Exported) do.	14	217	12	189	12	147	19	244	84	3,488	141	4,285
Unenumerated ... (Exported)	...	3,172	...	407	...	100	...	735	...	4,946	...	9,360
Total Values	...	£5,760,207	...	£6,105,853	...	£6,522,263	...	£7,056,079	...	£87,882,108	...	£113,326,510

† Weight not stated.

AUSTRALASIAN MINERAL PRODUCTION.

COMPARATIVE TABLE SHOWING THE OUTPUT OF ALL MINERAL PRODUCTS FROM THE SEVERAL STATES OF AUSTRALIA AND THE DOMINION OF NEW ZEALAND DURING 1912.

DESCRIPTION OF MINERAL.	Western Australia.		New South Wales.		Queensland.		Victoria.		Tasmania.		South Australia.		New Zealand.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
		£		£		£		£		£		£		£
Gold ... ... fine ounces	1,282,658	5,448,385	165,295	702,129	347,946	1,477,979	480,131	2,039,464	37,973	161,300	6,592	28,000	310,962	1,320,884
Copper ... ... statute tons	8	1,149	11,034	579,791	23,120	1,698,280	...	...	5,136	430,965	6,295	461,500	...	...
Copper Ore ... do	9,556	59,388			...	...	...	...	1,392	9,479	...	...	...	...
Pyritic Ore ... do	7,626	2,543	...	...	...	...	...	...	...	...	...	...	2	30
Lead (Pig, etc.) ... do	1,868	22,565	17,251	264,530	3,108	55,667	...	...	...	...	...	...	...	...
Manganese ... do	2	4	...	...	308	1,281	20	60	...	...	...	...	...	...
Platinum ... ... fine ounces	...	...	610	3,880	...	...	...	...	...	...	...	...	...	...
Silver ... ... do	138,039	16,353	2,389,195	251,652	569,181	66,188	17,424	2,200	...	...	2,700	326	779,261	82,471
Silver-Lead Ore statute tons	...	...	345,307	3,229,614	...	...	...	...	90,124	309,098	...	...	...	...
Tin ... ... do					3,230	364,503	...	...	...	...	...	...	...	...
Black Tin ... do	575	70,578	2,073	338,074	...	...	...	...	...	...	...	...	...	...
Tin Ore ... do					...	...	48	5,733	3,714	543,103	...	...	...	...
Scheelite ... ... do	...	...	56	4,963	...	...	...	...	...	...	...	...	135	13,347
Wolfram ... ... do	...	...	172	16,584	626	57,821	10	574	66	6,601	¼	20	...	...
Zinc (Spelter and Concentrates)... do	14	217	520,518	1,766,242	...	...	...	...	...	...	...	...	...	...
Antimony (Metal and Ore) ... do	...	...	63	355	...	...	1,475	16,162	...	...	...	...	...	...
Bismuth (Metal and Ore) ... ... do	...	...	6	1,210	6	2,835	...	...	8	2,646	...	...	...	...
Alunite ... ... do	...	...	3,425	13,700	...	...	...	...	...	...	...	...	...	...
Coal ... ... do	295,079	135,857	9,885,815	3,660,015	902,166	338,264	589,143	258,455	53,560	24,568	...	...	228,120	215,423
Coke ... ... do	...	...	241,159	162,454	...	...	...	...	...	...	...	...	4	7
Shale Oil ... do	...	...	86,018	34,770	...	...	...	...	...	...	...	...	...	...
Iron ... ... do	...	...	32,677	130,708	...	...	...	...	...	...	...	...	...	...
Iron Oxide ... do	...	...	3,757	4,763	...	...	...	...	...	...	...	...	...	...
Ironstone ... do	...	...	1,093	761	15,526	9,035	...	...	...	...	42,200	26,375	...	...
Lime ... ... do	...	...	35,657	44,478	...	...	...	...	...	...	...	...	...	...
Limestone ... do	...	...	33,186	11,066	97,175	24,176	...	...	...	...	50,000	12,500	...	...
Molybdenite ... do	...	...	57	3,706	102	17,349	...	...	...	...	...	...	...	...
Phosphate Rock ... do	...	...	...	...	...	...	...	...	...	...	6,100	6,100	...	...
Precious Stones	...	...	...	37,009	...	43,016	...	...	...	...	...	...	...	2,28
Unenumerated	...	3,168	...	378,981	...	18,961	...	8,628	...	5,742	...	60,849	...	432,731
Total Values	...	£ 5,760,207	...	£11,641,435	...	£ 4,175,355	...	£ 2,331,276	...	£1,493,502	...	£595,670	...	£ 2,067,176

PART I.—GOLD.

TABLE I.

MONTHLY PRODUCTION OF GOLD, IN FINE OUNCES, SHOWING THE QUANTITY REPORTED TO THE MINES DEPARTMENT DURING 1912.

GOLDFIELD.	DISTRICT.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.		JULY.	
		District.	Goldfield.	District.	Goldfield.	District.	Goldfield.	District.	Goldfield.	District.	Goldfield.	District.	Goldfield.	District.	Goldfield.
		ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.
Kimberley ...	...	...	16·67	...	35·31	...	35·17	...	19·20	...	27·36	...	44·60	...	25·67
Pilbara	Marble Bar ...	397·91	416·13	59·15	329·02	439·75	1,157·87	30·84	303·36	363·28	515·20	678·01	922·15	499·09	529·77
Do.	Nullagine ...	18·22		269·87		718·12		272·52		151·92		244·14		30·68	
West Pilbara ...	...	...	6·78	...	61·69	...	188·35	...	8·21	...	59·68	...	1·92	...	234·45
Ashburton ...	...	...	18·87	...	4·54	...	9·03	...	...	...	...	...	2·02	...	...
Gascoyne	...	...	3·98	...	...	...	...	...	...	...	...	...	2·57	...	...
Peak Hill ...	...	...	...	...	673·48	...	184·99	...	13·82	...	16·46	...	108·72	...	43·33
East Murchison ...	Lawlers ...	714·69	6,296·86	751·08	6,771·63	829·28	9,602·42	505·23	9,646·72	1,084·67	8,882·48	663·87	9,337·76	171·57	7,724·18
Do.	Wiluna ...	442·41		360·03		777·41		921·20		840·90		775·47		194·23	
Do.	Black Range	5,139·76		5,660·52		7,995·73		8,220·29		6,956·91		7,898·42		7,358·38	
Murchison ...	Cue	1,007·53	8,493·07	810·07	8,499·25	564·48	8,154·63	716·68	7,902·73	482·36	9,527·85	1,004·48	8,842·45	589·90	9,789·48
Do.	Nannine ...	3,855·80		3,849·64		3,261·70		3,443·22		4,463·27		4,100·35		5,097·36	
Do.	Day Dawn ...	2,703·81		2,456·92		2,616·77		2,209·71		2,325·38		2,364·19		1,940·48	
Do.	Mt. Magnet ...	925·93		1,382·62		1,711·68		1,533·12		2,256·84		1,373·43		2,161·74	
Yalgoo	...	...	62·07	...	115·69	...	217·60	...	455·15	...	441·31	...	659·14	...	417·04
Mt. Margaret ...	Mt. Morgans	98·76	10,803·62	800·74	10,443·84	635·53	10,751·13	478·53	9,407·54	455·57	8,753·47	352·34	7,062·64	148·09	6,691·09
Do.	Mt. Malcolm	6,113·90		6,007·99		5,572·96		5,206·87		7,457·05		5,474·24		5,562·47	
Do.	Mt. Margaret	4,590·96		3,635·11		4,542·64		3,722·14		840·85		1,236·06		980·53	
North Coolgardie	Menzies ...	2,095·78	2,842·99	3,362·55	4,368·31	2,510·38	4,633·32	3,923·34	5,509·66	2,624·10	4,339·21	3,028·33	5,248·97	3,146·57	4,310·54
Do.	Ularring ...	436·22		224·48		1,268·00		691·57		805·13		641·89		238·44	
Do.	Niagara ...	168·42		394·30		217·09		684·06		532·98		387·41		218·54	
Do.	Yerilla ...	142·57		386·98		637·85		210·69		377·00		1,191·34		706 99	
Broad Arrow ...	...	...	516·30	...	877·94	...	1,487·27	...	586·53	...	394·07	...	352·13	...	395·52
N.E. Coolgardie ...	Kanowna ...	946·26	1,060·66	762·68	796·81	1,288·05	1,288·05	988·78	1,010·36	1,177·84	1,193·86	1,196·04	1,909·31	1,349·19	1,734·63
Do.	Kurnalpi ...	114·40		34·13		...		21·58		16·02		713·27		385·44	
East Coolgardie ...	East Coolgardie	64,645·01	64,794·34	43,477·14	43,709·42	64,984·64	64,984·64	61,114·31	61,437·56	65,277·84	65,378·57	62,884·89	62,884·89	65,555·39	65,686·41
Do.	Bulong ...	149·33		232·28		...		323·25		100·73		...		131·02	
Coolgardie ...	Coolgardie ...	2,292·84	2,733 28	2,664·72	3,156·35	3,753·81	3,866·86	3,233·58	3,879·88	3,049·08	3,583·83	2,726·70	3,296·18	3,106·28	3,317·96
Do.	Kunanalling	440·44		491·63		113·05		646·30		534·75		569·48		211·68	
Yilgarn	...	...	943·22	...	1,857·15	...	1,716·85	...	1,966·28	...	1,921·05	...	2,842·15	...	2,611·72
Dundas	...	...	1,758·05	...	1,848·98	...	1,975·98	...	1,859·28	...	2,450·09	...	1·952·25	...	2,620·05
Phillips River ...	...	...	143·40	...	63·43	...	422·41	...	458·21	...	328·86	...	253·75	...	418·04
State generally ...	...	...	4·27	...	129·98	...	...	...	...	...	...	...	...	...	12·68
TOTAL Fine ounces ...		...	100,914·56	...	83,742·82	...	110,676·57	...	104,464·49	...	107,813·35	...	105,723·60	...	106,562·56
TOTAL Sterling value		£428,658		£355,717		£470,124		£443,737		£457,962		£449,085		£452,649	

TABLE I.—*Monthly Production of Gold, in Fine Ounces*—continued.

GOLDFIELD.	DISTRICT.	AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.		TOTAL FOR 1912.	
		District.	Goldfield.	District.	Goldfield.	District.	Goldfield.	District.	Goldfield.	District.	Goldfield.	District.	Goldfield.
		ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.
Kimberley	...	...	7·75	...	42·14	...	17·76	...	...	...	...	...	271·63
Pilbara	Marble Bar ...	235·57	268·28	285·96	530·12	117·24	610·22	96·29	101·66	238·35	315·33	3,441·44	5,999·11
Do.	Nullagine ...	32·71		244·16		492·98		5·37		76·98		2,557·67	
West Pilbara ...	...	...	238 68	...	208·78	...	...	...	...	...	109·66	...	1,118·20
Ashburton ...	...	...	...	...	...	...	4·27	...	...	...	...	...	38·73
Gascoyne	...	...	...	...	...	...	...	...	...	...	...	...	6·55
Peak Hill	...	...	30·73	...	3·46	...	37·11	...	318·24	...	431·30	...	1,861·64
East Murchison ...	Lawlers ...	389·38	8,818·94	968·72	7,970·46	501·35	8,025·54	430·34	8,222·09	297·54	7,831·70	7,307·72	99,130·78
Do. ...	Wiluna ...	1,049·52		574·66		458·97		733·86		599·67		7,728·33	
Do. ...	Black Range	7,380·04		6,427·08		7,065·22		7,057·89		6,934·49		84,094·73	
Murchison	Cue	526·52	8,982·60	810·66	9,703·48	852·81	8,491·96	929·32	8,862·79	698·45	8,122·49	8,993·26	105,372·78
Do.	Nannine ...	4,675·54		5,075·94		4,312·22		4,499·68		3,923·48		50,558·20	
Do.	Day Dawn ...	2,494·09		2,279·69		2,315·21		2,326·11		2,251·06		28,283·42	
Do.	Mt. Magnet ...	1,286·45		1,537·19		1,011·72		1,107·68		1,249·50		17,537·90	
Yalgoo	...	...	736·70	...	706·15	...	650·02	...	891·54	...	813·51	...	6,165·92
Mt. Margaret ...	Mt. Morgans	129·93	6,960·05	136·10	7,424·57	118·03	6,620·38	59·63	7,052·66	25·30	10,998·61	3,438·55	102,969·60
Do. ...	Mt. Malcolm	6,096·57		5,728·66		5,330·99		5,945.38		9,791·73		74,288·81	
Do. ...	Mt. Margaret	733·55		1,559·81		1,171·36		1,047·65		1,181·58		25,242·24	
North Coolgardie...	Menzies ...	2,702·35	7,118·32	3,804·25	5,606·09	3,679·79	5,267·92	2,305·22	3,659·45	2,943·59	5,365·69	36,126·25	58,270·47
Do. ...	Ularring ...	2,749·60		661·16		831·89		427·32		550·95		9,526·65	
Do. ...	Niagara ...	745·04		960·02		567·99		618·19		848·63		6,342·67	
Do. ...	Yerilla ...	921·33		180·66		188·25		308·72		1,022·52		6,274·90	
Broad Arrow ...	...	...	366·14	...	1,769·61	...	1,644·52	...	2,491·15	...	2,494·25	...	13,375·43
N.E. Coolgardie ...	Kanowna ...	565·53	670·64	731·37	1,013·09	775·59	857·68	566·89	1,161·36	1,016·31	1,159·26	11,364·53	13,855·71
Do.	Kurnalpi ...	105·11		281·72		82·09		594·47		142·95		2,491·18	
East Coolgardie ...	East Coolgardie	73,799·67	73,869·83	62,413·43	62,420·25	66,212·41	66,473·80	64,954·83	64,966·68	60,049·00	60,188·75	755,368·56	756,795·14
Do. ...	Bulong ...	70·16		6·82		261·39		11·85		139·75		1,426·58	
Coolgardie ...	Coolgardie ...	4,540·97	4,923·48	2,749·11	3,040·28	2,544·64	3,268·88	3,557·83	3,813·97	3,027·21	3,300·64	37,246·77	42,181·59
Do. ...	Kunanalling	382·51		291·17		724·24		256·14		273·43		4,934·82	
Yilgarn	...	...	2,783·22	...	2,370 02	...	3,488·50	...	4,259·31	...	3,915·93	...	30,675·40
Dundas	...	...	2,128·99	...	2,036·62	...	2,423·78	...	2,150·57	...	2,109·71	...	25,314·35
Phillips River ...	...	...	218·77	...	427·59	...	447·83	...	428·48	...	590·59	...	4,201·36
State generally		...	6·00	...	4·01	...	69·54	...	6·93	...	6·99	...	240·40
TOTAL Fine ounces ...		...	**118,129·12**	...	**105,276·72**	...	**108,399·71**	...	**108,386·88**	...	**107,754·41**	...	**1,267,844·79**
TOTAL Sterling value		**£501,780**		**£447,187**		**£460,453**		**£460,398**		**£457,712**		**£5,385,462**	

TABLE II.

TOTAL YEARLY PRODUCTION OF GOLD, IN FINE OUNCES, AS REPORTED TO THE MINES DEPARTMENT, TO 31ST DECEMBER, 1912.

GOLDFIELD.	DISTRICT.	1912.		1911.		1910		1909.		1908.		1907.	
		District.	Goldfield.	District.	Goldfield.	District.	Goldfield.	District.	Goldfield.	District.	Goldfield.	District.	Goldfield.
		ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.
Kimberley	... ...	...	271·63	...	171·45	...	265·53	...	134·52	...	150·16	...	336·57
Pilbara	Marble Bar ...	3,441·44	5,999·11	2,346·74	4,608·08	2,613·40	5,369·94	2,523·16	6,764·49	3,179·76	6,965·61	5,856·44	10,042·96
Do.	Nullagine ...	2,557·67		2,261·34		2,756·54		4,241·33		3,785·85		4,186·52	
West Pilbara ...	... ...	...	1,118·20	...	983·17	...	1,483·62	...	1,539·62	...	1,005·60	...	464·08
Ashburton	... ...	...	38·73	...	256·33	...	247·63	...	436·32	...	161·71	...	143·01
Gascoyne	... ...	...	6·55	...	7·87	...	26·31	...	...	...	...	...	...
Peak Hill	... ...	...	1,861·64	...	1,747·01	...	4,327·02	...	7,918·79	...	7,980·10	...	8,111·14
East Murchison ...	Lawlers	7,307·72	99,130·78	27,193·85	102,390·79	45,203·50	130,371·21	77,542·23	155,908·60	72,109·75	144,792·31	61,259·79	119,207·31
Do.	Wiluna	7,728·33		7,829·83		14,258·17		*		*		*	
Do.	Black Range ...	84,094·73		67,367·11		70,909·54		78,366·37		72,682·56		57,947·52	
Murchison	Cue	8,993·26	105,372·78	11,455·56	119,653·40	9,576·29	124,351·38	21,271·13	133,105·86	24,702·50	157,848·40	25,878·80	169,397·46
Do.	Nannine	50,558·20		54,241·79		50,046·60		50,992·21		38,820·52		31,792·41	
Do.	Day Dawn ...	28,283·42		37,947·41		46,474·13		44,447·89		84,422·44		101,591·06	
Do.	Mt. Magnet ...	17,537·90		16,008·64		18,254·36		16,394·63		9,902·94		10,135·19	
Yalgoo	... ...	...	6,165·92	...	1,162·04	...	1,332·72	...	1,805·31	...	551·03	...	4,371·38
Mt. Margaret ...	Mt. Morgans ...	3,438·55	102,969·60	5,484·08	152,474·39	10,331·24	160,281·18	25,722·76	155,864·99	28,912·13	153,597·15	28,755·18	169,466·07
Do.	Mt. Malcolm ...	74,288·81		92,811·29		97,689·68		90,436·33		86,018·61		81,709·00	
Do.	Mt. Margaret ...	25,242·24		54,179·02		52,260·26		39,705·90		38,666·41		59,001·89	
North Coolgardie ...	Menzies	36,126·25	58,270·47	39,062·97	64,759·69	40,247·69	72,747·55	35,851·38	79,398·99	37,023·37	91,251·59	37,053·24	86,790·67
Do.	Ularring ...	9,526·65		9,472·85		8,669·96		15,286·66		21,598·97		19,072·73	
Do.	Niagara	6,342·67		8,423·55		12,007·07		17,061·87		21,477·90		18,881·94	
Do.	Yerilla	6,274·90		7,800·32		11,822·83		11,199·08		11,151·35		11,782·76	
Broad Arrow ...	... ...	...	13,375·43	...	7,152·73	...	15,481·88	...	17,121·70	...	18,429·97	...	21,907·18
N.E. Coolgardie ...	Kanowna ...	11,364·53	13,855·71	17,958·07	19,554·75	22,203·96	23,027·27	23,785·63	25,462·38	26,355·22	27,072·72	29,244·99	31,197·96
Do.	Kurnalpi ...	2,491·18		1,596·68		823·31		1,676·75		717·50		1,952·97	
East Coolgardie ...	East Coolgardie	755,368·56	756,795·14	775,050·60	776,493·74	777,893·88	778,479·54	896,900·15	899,289·27	888,415·37	890,772·70	937,238·61	941,170·94
Do.	Bulong	1,426·58		1,443·14		585·66		2,389·12		2,357·33		3,932·33	
Coolgardie	Coolgardie ...	37,246·77	42,181·59	28,982·04	33,753·71	31,928·00	37,911·04	28,382·62	34,134·90	32,820·61	40,029·39	53,029·44	60,810·37
Do.	Kunanalling ...	4,934·82		4,771·67		5,983·04		5,752·28		7,208·78		7,780·93	
Yilgarn	... ...	...	30,675·40	...	18,811·40	...	27,857·93	...	20,909·12	...	22,162·87	...	19,291·98
Dundas	... ...	...	25,314·35	...	28,989·86	...	29,627·34	...	29,549·27	...	28,643·63	...	23,602·23
Phillips River ...	... ...	...	4,201·36	...	5,656·54	...	8,194·90	...	6,713·52	...	4,404·69	...	4,313·87
† Donnybrook ...	... ...	...	...	...	...	...	...	...	...	...	...	...	...
State generally ...	... ...	...	240·40	...	359·99	...	847·41	...	348·09	...	271·13	...	1,367·70
TOTAL	**Fine Ounces** ...	...	**1,267,844·79**	...	**1,338,986·94**	...	**1,422,231·40**	...	**1,576,405·74**	...	**1,596,090·76**	...	**1,671,992·88**
	Sterling Value	**£5,385,462**		**£5,687,655**		**£6,041,254**		**£6,696,146**		**£6,779,763**		**£7,102,174**	

* Previous to 1st March, 1910, included in Lawlers District. † Abolished 4th March, 1908.

TABLE II.—*Total Yearly Production of Gold, in Fine Ounces, etc.*—continued.

GOLDFIELD.	DISTRICT.	1906.		1905.		1904.		1903.		PREVIOUS TO 1903.		TOTAL TO DECEMBER 31, 1912.	
		District.	Goldfield.	District.	Goldfield.	District.	Goldfield.	District.	Goldfield.	District	Goldfield.	District.	Goldfield.
		ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.
Kimberley	... ...	...	165·72	...	496·14	...	205·84	...	644·54	...	14,170·65	...	17,012·75
Pilbara	Marble Bar ...	2,256·97	5,711·90	4,534·25	11,473·83	3,129·37	8,029·65	4,787·33	9,570·04	65,514·65	92,378·60	100,183·51	166,914·21
Do.	Nullagine ...	3,454·93		6,939·58		4,900·28		4,782·71		26,863·95		66,730·70	
West Pilbara ...	... ...	...	749·16	...	801·14	...	3,427·71	...	5,100·48	...	5,929·20	...	22,601·98
Ashburton	... ...	...	278·24	...	207·53	...	509·96	...	903·94	...	5,681·64	...	8,865·04
Gascoyne	... ...	...	...	...	...	...	...	...	...	...	505·27	...	546·00
Peak Hill	... ...	...	2,008·20	...	13,586·87	...	14,113·57	...	31,750·17	...	144,909·03	...	238,313·54
East Murchison ...	Lawlers	60,351·20	95,771·49	68,232·52	84,926·28	78,543·91	89,730·30	84,738·16	85,451·08	289,238·82	289,612·24	871,721·45	1,397,292·39
Do.	Wiluna	*		*		*		*		*		29,816·33	
Do.	Black Range ...	35,420·29		16,693·76		11,186·39		712·92		373·42		495,754·61	
Murchison	Cue	18,337·11	182,395·82	15,125·05	206,734·88	15,286·71	214,403·13	20,688·78	204,181·85	143,417·64	713,009·36	314,732·83	2,330,454·32
Do.	Nannine	26,572·08		18,549·17		18,668·31		19,947·48		125,662·09		485,850·86	
Do.	Day Dawn ...	124,047·58		161,507·28		161,163·51		136,768·68		264,205·91		1,190,859·31	
Do.	Mt. Magnet ...	13,439·05		11,553·38		19,284·60		26,776·91		179,723·72		339,011·32	
Yalgoo	... ...	...	4,450·19	...	4,742·77	...	2,353·41	...	3,138·35	...	45,277·39	...	75,350·51
Mt. Margaret ...	Mt. Morgans ...	30,206·54	166,258·94	35,130·45	188,712·21	55,463·96	187,383·87	64,817·55	184,590·89	182,060·20	616,580·94	470,322·64	2,238,180·23
Do.	Mt. Malcolm ...	94,095·06		96,644·33		87,927·26		80,055·86		305,801·38		1,187,477·61	
Do.	Mt. Margaret ...	41,957·34		56,937·43		43,992·65		39,717·48		128,719·36		580,379·98	
North Coolgardie ...	Menzies	33,237·86	110,957·04	41,895·33	148,771·00	37,100·73	145,064·61	52,870·58	162,139·18	321,072·14	605,480·27	711,541·54	1,625,631·06
Do.	Ularring	25,210·13		43,387·07		21,769·41		19,142·55		69,803·31		262,940·29	
Do.	Niagara	37,418·89		45,520·17		67,230·33		77,013·02		168,546·00		479,923·41	
Do.	Yerilla	15,090·16		17,968·43		18,964·14		13,113·03		46,058·82		171,225·82	
Broad Arrow	... ...	...	21,510·61	...	18,583·66	...	22,180·19	...	26,021·17	...	176,914·67	...	358,679·19
N.E. Coolgardie ...	Kanowna ...	37,267·87	38,098·74	42,341·66	43,174·38	38,648·56	39,799·63	40,554·03	41,279·02	348,517·97	361,545·83	638,242·49	664,068·39
Do.	Kurnalpi ...	830·87		832·72		1,151·07		724·99		13,027·86		25,825·90	
East Coolgardie ...	East Coolgardie	989,357·24	995,831·87	997,193·02	1,006,965·90	1,050,922·89	1,062,078·27	1,062,898·06	1,076,078·12	4,078,244·62	4,180,429·46	13,209,483·00	13,364,384·95
Do.	Bulong	6,474·63		9,772·88		11,155·38		13,180·06		102,184·84		154,901·95	
Coolgardie	Coolgardie ...	55,771·11	64,030·18	54,499·04	63,664·27	53,505·01	63,199·76	58,692·50	71,285·59	454,684·74	561,904·33	889,541·88	1,072,905·13
Do.	Kunanalling ...	8,259·07		9,165 23		9,694·75		12,593·09		107,219·59		183,363·25	
Yilgarn	... ...	...	23,546·75	...	19,291·42	...	25,508·64	...	19,276·71	...	180,438·27	...	407,770·49
Dundas	... ...	...	20,434·84	...	25,960·95	...	31,830·27	...	33,845·76	...	183,546·96	...	461,345·46
Phillips River ...	... ...	..	2,779·89	...	2,563·26	...	4,016·63	...	7,050·73	...	8,143·85	...	58,039·24
†Dönnybrook	... ...	...	...	...	...	...	...	...	53·21	...	788·55	...	841·76
State generally	...	...	1,315·71	...	...	...	...	...	...	...	1,389·30	...	6,139·73
TOTAL — Fine Ounces ...		...	1,736,295·29	...	1,840,656·49	...	1,913,835·44	...	1,962,360·83	...	8,188,635·81	...	24,515,336·37
TOTAL — Sterling Value		£7,375,314		£7,818,612		£8,129,456		£8,335,579		£34,783,114		£104,134,529	

Previous to March, 1910, included in Lawlers District.

† Abolished 4th March, 1908.

TABLE III.

GENERAL RETURN.

RETURN SHOWING, FOR THE RESPECTIVE GOLDFIELDS AND DISTRICTS, THE AREA IN SQUARE MILES, LEASES IN FORCE, PARTICULARS OF PLANT, MEN EMPLOYED AND DIGGERS ALLUVIAL, DOLLIED, AND SPECIMEN GOLD AND ORE TREATED, WITH GOLD AND SILVER YIELD, IN FINE OUNCES, AS REPORTED TO THE MINES DEPARTMENT, FOR THE YEAR 1912.

GOLDFIELD.	DISTRICT.	DATE OF PROCLAMATION OF GOLDFIELD.				AREA IN SQUARE MILES.		LEASES IN FORCE.		PARTICULARS OF PLANT.					AVERAGE NUMBER OF MEN ENGAGED IN GOLD MINING.		
										Milling.		Cyaniding.			Men employed.		
		Proclamation gazetted.	To take effect from	Latest Amendment of Boundaries gazetted.	To take effect from	Goldfield.	District.	No.	Area in Acres.	Stamps.	Other Mills.	Leaching Vats.	Agitating Vats.	Filter and Vacuum Presses	Above Ground.	Under Ground.	Digger
Kimberley	... ...	20-5-86	20-5-86	31-10-02	1-11-02	33,833	...	...	...	45	1	...	...	...	...	...	11
Pilbara	Marble Bar Nullagine	1-10-88	1-10-88	1-3-07	1-3-07	32,696	25,809 6,887	34 14	425 135	60 30	... 1	18 11	... ...	... ...	42 12	40 20	32 18
West Pilbara	... ...	20-9-95	1-11-95	1-3-07	1-3-07	10,843	...	10	114	30	...	9	...	...	9	3	4
Ashburton	... ...	11-12-90	11-12-90	18-10-01	14-10-01	14,230	...	...	...	...	...	...	...	...	...	...	11
Gascoyne	... ...	25-6-97	15-4-97	18-10-01	14-10-01	5,313	..	2	36	...	...	...	...	...	...	...	2
Peak Hill	... ...	19-3-97	1-4-97	18-10-01	14-10-01	24,732	...	20	279	40	4	10	...	4	10	13	8
East Murchison	Lawlers Wiluna Black Range	28-6-95	28-6-95	1-11-12	1-1-13	28,746	9,379 10,496 8,871	32 67 109	433 1,113 1,598	148 80 125	8 11 12	30 34 69	7 18 10	3 7 35	73 110 309	50 82 475	8 1 9
Murchison	Cue ... Nannine Day Dawn Mt. Magnet	24-9-91	24-9-91	1-11-12	1-1-13	20,274	8,593 7,050 896 3,735	48 117 48 44	629 1,497 453 461	93 209 60 55	... 14 21 11	46 49 27 31	... 8 15 5	... 2 5 1	83 919 198 118	92 642 184 93	10 38 18 5
Yalgoo	... ...	8-2-95	23-1-95	...	...	18,833	...	60	803	73	1	20	...	...	57	57	9
Mt. Margaret	Mt. Morgans Mt. Malcolm Mt. Margaret	12-3-97	1-4-97	1-3-07	1-3-07	44,860	1,637 3,330 39,893	21 89 70	356 1,657 1,170	132 235 163	3 32 18	41 80 39	15 25 11	2 7 6	33 251 150	30 448 196	29 18 55
North Coolgardie	Menzies Ularring Niagara Yerilla	28-6-95	28-6-95	7-8-08	1-9-08	29,936	6,805 6,913 688 15,530	54 33 24 34	759 412 334 489	135 85 75 81	9 11 5 7	72 44 34 23	9 5 ... 3	4 1	192 57 71 89	254 100 69 117	10 4 24 30
Broad Arrow	... ...	17-11-96	20-11-96	8-6-06	1-7-06	1,038	...	57	904	93	9	28	7	5	94	113	60
North-East Coolgardie ...	Kanowna Kurnalpi	20-3-96	15-4-96	27-3-08	1-4-08	20,604	1,094 19,510	57 62	908 1,065	138 5	6 2	49 ...	4 ...	... ...	101 23	130 15	18 14
East Coolgardie	East Coolgardie Bulong	21-9-94	1-10-94	27-3-08	1-4-08	1,800	810 990	171 7	2,417 109	665 10	323 ...	242 5	181 ...	123 ...	2,167 20	3,278 25	25 3
Coolgardie	Coolgardie Kunanalling	6-4-94	6-4-94	1-3-07	1-3-07	11,702	9,384 2,318	57 26	733 364	302 85	11 5	132 48	2 ...	... ...	178 56	314 58	7 6
Yilgarn	... ...	1-10-88	1-10-88	1-3-12	1-3-12	13,658	...	196	3,659	125	4	64	...	1	259	239	5
Dundas	... ...	31-8-93	31-8-93	1-3-07	1-3-07	11,430	...	56	674	135	15	60	15	3	108	162	4
Phillips River	... ...	21-9-00	14-9-00	26-1-12	1-2-12	5,300	...	17	257	61	2	14	...	...	49	65	...
State generally ...	... ...	...	...	...	...	...	...	...	...	...	2	...	...	...	2	...	...
	Total	...	...	...	...	**329,828**	...	**1,636**	**24,243**	**3,573**	**548**	**1,329**	**340**	**209**	**5,840**	**7,864**	**496**

TABLE III.—*Return showing for the respective Goldfields and Districts, etc.*—continued.

Goldfield.	District.	1912 GOLD AND SILVER YIELD—DISTRICTS.						1912 GOLD AND SILVER YIELD—GOLDFIELDS.					
		Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Total Gold.	*Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Total Gold.	*Silver.
		Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.
Kimberley		..	..	..	..	..	..	271·63	..	..	..	271·63	..
Pilbara	Marble Bar	291·90	258·12	2,154·50	2,891·42	3,441·44	..	512·93	267·11	3,597·50	5,219·07	5,999·11	..
Do.	Nullagine	221·03	8·99	1,443·00	2,327·65	2,557·67	..						
West Pilbara		..	..	..	..	..	..	97·78	..	119·86	1,020·42	1,118·20	..
Ashburton		..	..	..	..	..	..	38·73	..	..	..	38·73	..
Gascoyne		..	..	..	..	..	..	6·55	..	..	..	6·55	..
Peak Hill		..	..	..	..	..	..	366·68	27·84	575·00	1,467·12	1,861·64	..
East Murchison	Lawlers	9·91	7·38	9,162·50	7,290·43	7,307·72	127·10	20·50	2,200·02	184,834·70	96,910·26	99,130·78	2,664·76
Do.	Wiluna	3·53	..	16,090·50	7,724·80	7·728·33	1·37						
Do.	Black Range	7·06	2,192·64	159,581·70	81,895·03	84,094·73	2,536·29						
Murchison	Cue	12·05	52·76	11,582·97	8,928·45	8,993·26	17·32	395·79	1,828·21	175,612·17	103,148·78	105,372·78	9,119·55
Do.	Nannine	236·74	903·36	72,194·29	49,418·10	50,558·20	..						
Do.	Day Dawn	51·58	42·67	61,610·12	28,189·17	28,283·42	9,102·23						
Do.	Mt. Magnet	95·42	829·42	30,224·79	16,613·06	17,537·90	..						
Yalgoo		..	..	..	..	..	..	223·76	36·10	9,801·41	5,906·06	61,65·92	..
Mt. Margaret	Mt. Morgans	89·74	..	6,178·50	3,348·81	3,438·55	..	1,054·24	493·18	215,403·92	101,422·18	102,969·60	6,241·19
Do.	Mt. Malcolm	245·99	275·30	162,606·75	73,767·52	74,288·81	3,825·20						
Do.	Mt. Margaret	718·51	217·88	46,618·67	24,305·85	25,242·24	2,415·99						
North Coolgardie	Menzies	..	77·93	52,433·26	36,048·32	36,126·25	365·38	78·83	113·18	79,739·77	58,078·46	58,270·47	428·38
Do.	Ularring	..	..	8,508·00	9,526·65	9,526·65	..						
Do.	Niagara	73·81	2·99	10,194·00	6,265·87	6,342·67	63·00						
Do.	Yerilla	5·02	32·26	8,604·51	6,237·62	6,274·90	..						
Broad Arrow		..	..	..	..	..	..	46·53	419·46	27,262·06	12,909·44	13,375·43	..
N.E. Coolgardie	Kanowna	71·34	128·10	32,723·50	11,165·09	11,364·53	..	200·79	1,364·45	32,795·27	12,290·47	13,855·71	..
Do.	Kurnalpi	129·45	1,236·35	71·77	1,125·38	2,491·18	..						
East Coolgardie	E. Coolgardie	520·88	1,158·96	1,757,419·43	53,688·72	755,368·56	90,447·25	520·88	1,488·44	1,763,265·25	754,785·82	756,795·14	90,447·25
Do.	Bulong	..	329·48	5,845·82	1,097·10	1,426·58	..						
Coolgardie	Coolgardie	418·10	302·46	54,368·03	36,526·21	37,246·77	13·10	448·58	302·46	60,628·03	41,430·55	42,181·59	14·55
Do.	Kunanalling	30·48	..	6,260·00	4,904·34	4,934·82	1·45						
Yilgarn		..	..	..	..	..	..	3·39	38·24	73,199·05	30,633·77	30,675·40	109·06
Dundas		..	..	..	..	..	..	..	338·27	53,783·50	24,976·08	25,314·35	..
Phillips River		..	..	..	..	..	..	26·51	44·22	8,251·00	4,130·63	4,201·36	..
State generally		..	..	..	..	..	..	..	..	..	240·40	240·40	1,327·08
Total for 1912		..	..	..	..	..	..	**4,314·10**	**8,961·18**	**2,688,868·49**	**1,254,589·51**	**1,267,844·79**	**110,351·82**

*By-product in the treatment of auriferous ore.

TABLE III.—*Return showing for the respective Goldfields and Districts, etc.*—continued.

Goldfield.	District.	Total Gold and Silver Yield—Districts.						Total Gold and Silver Yield—Goldfields.					
		Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Total Gold.	* Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Total Gold.	* Silver.
		Fine ozs.	Fine ozs.	Tons (2,240 lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240 lbs.)	Fine ozs.	Fine ozs.	Fine ozs.
Kimberley	... ...	..	..	..	..	..	..	2,885·50	..	17,597·50	14,127·25	17,012·75	..
Pilbara	Marble Bar ...	10,518·70	3,226·91	55,296·13	86,437·90	100,183·51	574·01	16,115·02	3,599·10	89,613·37	147,200·09	166·914,21	574·01
Do.	Nullagine ...	5,596·32	372·19	34,317·24	60,762·19	66,730·70	..						
West Pilbara	... ...	..	..	..	..	..	..	4,942·53	237·11	15,170·81	17,422·34	22,601·98	309·17
Ashburton	... ...	..	..	..	..	..	..	8,549·40	315·64	..	..	8,865·04	162·02
Gascoyne	... ...	..	..	..	..	..	..	309·00	18·51	236·70	218·49	546·00	..
Peak Hill	... ...	..	..	..	..	..	..	1,128·96	3,607·09	473,567·76	233,577·49	238,313·54	2,287·59
East Murchison ...	Lawlers ...	5,475·40	5,970·29	1,939,253·24	860,275·76	871,721·45	24,796·77						
Do.	Wiluna ...	90·79	106·46	65,888·25	29,619·08	29,816·33	15·39	6,969·26	15,031·33	2,677,887·51	1,375,291·80	1,397,292·39	32,637·04
Do.	Black Range...	1,403·07	8,954·58	672,746·02	485,396·96	495,754·61	7,824·38						
Murchison	Cue	963·49	3,866·49	351,135·35	309,902·85	314,732·83	400·11						
Do.	Nannine ...	8,987·42	7,809·07	588,819·80	469,054·37	485,850·86	1,174·98						
Do.	Day Dawn ...	2,147·03	3,463·80	1,728,429·82	1,185,248·48	1,190,859·31	150,470·45	13,573·52	23,029·85	3,145,054·41	2,293,850·95	2,330,454·32	153,177·97
Do.	Mt. Magnet ...	1,475·58	7,890·49	476,669·44	329,645·25	339,011·32	1,132·43						
Yalgoo	... ...	..	..	..	..	..	..	1,274·33	845·52	108,005·24	73,230·66	75,350·51	3·30
Mt. Margaret	Mt. Morgans ...	1,511·14	3,297·04	789,982·11	465,514·46	470,322·64	5,682·67						
Do.	Mt. Malcolm ...	2,026·37	5,838·53	2,100,805·88	1,179·612·71	1,187,477·61	39,061·62	6,482·01	11,925·53	3,941,186·12	2,219,772·69	2,238,180·23	77,079·96
Do.	Margaret	2,944·50	2,789·96	1,050,398·13	574,645·52	580,379·98	32,335·67						
North Coolgardie ...	Menzies ...	962·58	2,457·87	771,156·38	708,121·09	711,541·54	10,088·62						
Do.	Ularring ...	21·46	1,096·01	258,757·99	261,822·82	262,940·29	5,432·81						
Do.	Niagara ...	1,361·42	1,277·00	856,352·47	477,284·99	479,923·41	5,492·18	3,573·96	12,351·46	2,070,209·13	1,609,705·64	1,625,631·06	21,074·08
Do.	Yerilla ...	1,228·50	7,520·58	183,942·29	162,746·74	171,225·82	60·47						
Broad Arrow	... ...	..	..	..	..	..	..	18,622·79	3,745·67	527,525·49	336,310·73	358,769·19	517·26
N.E. Coolgardie ...	Kanowna ...	104,292·37	10,473·67	849,149·47	523,476·45	638,242·49	2,517·31	116,119·59	14,219·71	854,086·94	533,729·09	664,068·39	2,528·53
Do.	Kurnalpi ...	11,827·22	3,746·04	4,937·47	10,252·64	25,825·90	11·22						
East Coolgardie ...	E. Coolgardie	26,103·19	21,988·33	17,910,564·00	13,161,391·48	13,209,483·00	957,747·60	52,603·19	36,449·10	18,043,273.29	13,275,332.66	13,364,384.95	957,747·60
Do.	Bulong ...	26,500·00	14,460·77	132,709·29	113,941·18	154,901·95	..						
Coolgardie	Coolgardie ...	7,441·69	7,639·98	1,361,698·60	874,460·21	889,541·88	757·61	7,940·04	12,564·82	1,599,956·07	1,052,400·27	1,072,905·13	779·28
Do.	Kunanalling ...	498·35	4,924·84	238,257·47	177,940·06	183,363·25	21·67						
Yilgarn	... ...	..	..	..	..	..	..	75·61	1,176·01	899,106·70	406,518·87	407,770·49	4,126·84
Dundas	... ...	..	..	..	..	..	..	1,999·80	7,178·08	607,218·55	452,167·58	461,345·46	33,802·22
Phillips River... ...	... ...	..	..	..	..	..	..	468·39	775·33	69,382·01	56,795·52	58,039·24	15,182·21
† Donnybrook	... ...	..	..	..	..	..	..	23·24	..	1,653·30	818·52	841·76	..
State generally		..	..	..	..	..	..	124·89	155·90	27·00	5,858·94	6,139·73	2,728·71
						Total to	**31-12-1912**	**263,781·03**	**147,225·76**	**35,140,757·90**	**24,104,329.58**	**24,515,336 37**	**1,304,708·79**

* By-product in the treatment of auriferous ore. † Abolished 4th March, 1908.

TABLE IV.

PRODUCTION OF GOLD AND SILVER FROM ALL SOURCES, SHOWING IN FINE OUNCES THE OUTPUT AS REPORTED TO THE MINES DEPARTMENT DURING 1912, AND THE TOTAL PRODUCTION TO DATE.

Kimberley Goldfield.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Hall's Creek	..	Voided leases	..	..	..	..	..	..	..	423·00	477·76	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	94·55	62·68	..
Mt. Dockerell	..	Voided leases	..	..	..	..	..	..	..	44·00	435·93	..
Ruby Creek	..	Voided leases	..	..	..	..	..	..	..	12,633·50	9,435·13	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	151·00	127·28	..
The Brockman	..	Voided leases	..	..	..	..	..	..	..	1,352·75	1,404·40	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	2,462·00	1,820·33	..
The Mary ..	..	Voided leases	..	..	..	..	..	..	..	399·00	210·03	..
The Panton ..	..	Voided leases	..	..	..	..	..	..	..	34·70	138·70	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	3·00	15·01	..
		From Goldfield generally :—										
		Reported by Banks and Gold Dealers	271·63	..	..	..	..	2,885·50	..	..	..	..
		Total	**271·63**	..	..	..	..	**2,885·50**	..	**17,597·50**	**14,127·25**	..

Pilbara Goldfield.

MARBLE BAR DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Bamboo Creek	718	Bamboo Revenue	..	234·58	4·00	303·19	..	..	392·26	4·00	303·19	..
Do. ..	732	Bonnie Doon	..	..	15·50	28·15	..	..	..	15·50	28·15	..
Do. ..	695	Bulletin	..	..	75·00	399·37	..	..	..	397·00	1,121·79	..
Do. ..	707	Kitchener	..	..	53·00	304·65	..	..	..	53·00	304·65	..
Do. ..	..	Voided leases	..	..	..	..	..	..	62·35	11,270·75	18,650·38	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	307·83	148·75	518·36	..

Boodalyerrie	..	Voided leases	..	..	..	..	..	..	292·07	120·25	387·86	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	7·16	..	..	..
Breen's Find	..	Voided leases	..	..	..	..	..	..	..	14·00	66·82	..
Elsie ..	..	Voided leases	..	..	..	..	..	..	..	135·00	316·31	..
Lallarookh ..	..	Voided leases	..	..	..	..	..	..	..	224·50	2,186·65	574·01
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	6,308·00	5,530·86	..
Marble Bar ..	(736)	Coronation	..	..	..	..	..	..	..	21·00	4·83	..
Do. ..	696	Franklin	..	..	107·00	93·75	..	..	..	442·50	340·85	..
Do. ..	(738)	Ironclad	..	..	40·00	4·11	..	..	..	65·50	19·41	..
Do. ..	694	Jo Jo	..	..	256·50	209·72	..	..	..	622·50	771·51	..
Do. ..	(729)	Killarney	..	..	..	..	..	..	..	41·50	62·11	..
Do. ..	735	Nabob	..	..	46·00	81·89	..	..	..	83·00	122·36	..
Do. ..	702	Railway Signal	..	..	34·00	22·81	..	..	..	303·00	232·81	..
Do. ..	716	Stray Shot	..	..	154·00	122·09	..	..	..	213·00	191·29	..
Do. ..	722	Viking	..	..	159·00	188·31	..	..	..	320·50	293·71	..
		Voided leases	..	..	..	..	..	..	141·73	13,474·95	18,473·08	..
		Sundry claims	..	23·54	235·50	230·56	..	38·68	126·22	2,601·64	3,076·15	..
North Pole ..	743	Greenstone	..	..	42·00	43·22	..	..	..	42·00	43·22	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	432·00	297·53	..
North Shaw	..	Voided leases	..	..	..	..	..	7·53	..	351·45	674·72	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	567·06	..	..	..
Sharks ..	..	Sundry claims	..	..	..	..	..	145·08	19·37	24·50	93·14	..
Shaw River	..	Voided leases	..	..	..	..	..	..	..	101·00	49·63	..
Talga Talga ..	..	Voided leases	..	..	..	..	..	..	83·83	574·50	975·98	..
Do ..	..	Sundry claims	..	..	..	..	..	50·26	68·99	204·65	520·25	..
Tambourah ..	..	Voided leases	..	..	..	..	..	..	..	1,438·50	1,739·44	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	64·65	639·25	797·44	..
Warrawoona	604	Klondyke Boulder	..	..	823·00	675·71	..	..	..	1,946·69	2,585·67	..
Do. ..	627	Klondyke Queen.. ..	..	..	10·50	18·96	..	..	3·80	444·75	567·09	..
Do. ..	745	Wheel of Fortune	..	..	9·00	7·28	..	..	..	9·00	7·28	..
		Voided leases	..	..	..	..	..	..	13·19	6,318·86	13,671·74	..
		Sundry claims	..	..	..	..	..	44·30	362·50	1,123·04	2,157·33	..
Western Shaw	..	Voided leases	..	..	..	..	..	..	..	1,222·50	957·80	..
Do. ..	..	Sundry claims	..	..	..	..	..	12·52	67·47	..	..	..
Wyman's Well	744	Euro	..	..	66·50	38·48	..	..	..	66·50	38·48	..
Do. ..	..	Voided leases	..	..	..	..	..	..	33·55	115·04	493·98	..
Do. ..	..	Sundry claims	..	..	7·00	11·19	..	..	16·72	334·86	525·67	..

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

Pilbara Goldfield—*continued.*

MARBLE BAR DISTRICT—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Yandicoogina	724	Thelma	..	..	17·00	107·98	..	..	..	21·00	115·14	..
Do. ..	..	Voided leases	..	..	..	..	..	..	140·76	2,644·50	5,597·99	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	238·35	103·75	120·34	..
		From District generally :—										
		Sundry parcels treated at :										
		Sanderson Cyanide Works	..	..	..	..	..	..	..	..	48·02	..
		Osborne Cyanide Works	..	..	..	..	..	..	..	..	6·83	..
		Stray Shot Battery	..	..	..	..	..	..	..	..	9·75	..
		Various Works	..	..	..	..	..	..	..	237·95	1,140·31	..
		Reported by Banks and Gold Dealers	291·90	..	..	..	..	10,220·33	217·05	..	..	..
		Total	**291·90**	**258·12**	**2,154·50**	**2,891·42**	..	**10,518·70**	**3,226·91**	**55,296·13**	**86,437·90**	**574·01**

NULLAGINE DISTRICT

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Eastern Creek	180L	Crescent	..	..	19·00	22·50	..	..	..	650·75	1,086·91	..
Do. ..	176L	(Doherty Reward)	..	..	..	..	..	..	..	142·25	171·43	..
Do. ..	176L, 177L ..	Doherty Reward leases ..	..	..	98·00	142·55	..	..	..	115·00	571·34	..
Do. ..	177L	(Harp)	..	..	..	..	..	..	..	62·00	79·22	..
Do. ..	182L	Morning Star	..	4·19	72·00	245·54	..	..	4·19	305·00	671·47	..
Do. ..	(179L)	Rose	..	..	..	..	..	..	..	152·00	83·00	..
Do. ..	178L	Shamrock	..	..	94·00	177·06	..	..	4·00	300·25	496·36	..
		Voided leases	..	..	..	..	..	..	..	53·50	51·78	..
		Sundry claims	..	..	195·00	397·09	..	..	3·77	205·00	413·40	..
Elsie ..	..	Voided leases	..	..	..	..	..	..	..	408·25	1,323·85	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	20·00	16·85	..

McPhee's Creek	196	Prospector	..	..	10·00	17·42	..	..	..	10·00	17·42	..
Do. ..	(197)	Referendum	..	..	7·50	10·62	..	..	..	7·50	10·62	..
Middle Creek	106L	Barton	..	..	..	..	..	..	..	5,627·65	6,454·72	..
Do. ..	136L	Little Wonder	..	..	31·50	72·97	..	..	..	971·50	3,732·15	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	552·25	1,055·53	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	164·00	262·28	..
Mosquito Creek	143L	Ard Patrick	..	..	40·00	174·40	..	..	..	1,228·75	3,282·86	..
Do. ..	79L	(Galtee More)	..	..	..	..	..	..	..	586·00	1,648·33	..
Do. ..	79L, 145L ..	Galtee More leases	..	..	44·00	49·29	..	..	..	1,564·00	2,776·81	..
Do. ..	..	Voided leases	..	..	..	..	..	1·07	21·42	3,852·55	4,740·20	..
Do. ..	..	Sundry claims	..	..	48·50	117·56	..	..	166·47	2,154·94	3,084·93	..
Nullagine ..	(191L)	Grant's Hill	..	..	6·50	23·26	..	..	..	16·50	84·42	..
Do. ..	..	Voided leases	..	..	..	..	..	..	13·96	7,436·75	11,252·70	..
Do. ..	..	Sundry claims	..	4·80	57·00	79·10	..	104·70	102·29	3,908·75	8,324·35	..
20-Mile Sandy	195L	Billjim	..	..	439·50	488·23	..	..	..	439·50	488·23	..
Do. ..	173L	Federation	..	..	65·00	23·30	..	..	..	272·25	428·37	..
Do. ..	167L	Mountain Maid	..	..	82·50	26·77	..	..	..	314·50	634·00	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	375·95	480·77	..
Do. ..	..	Sundry claims	..	..	133·00	79·83	..	33·10	20·55	2,369·40	3,462·69	..
	From District generally :—											
	Sundry parcels treated at :											
	Doherty's Works	..	..	..	9·49	..	..	..	..	..	205·54	..
	Enterprise Works	..	..	..	..	..	..	..	..	..	226·29	..
	Royer's Public Crushing Works	..	..	..	..	..	..	..	..	..	7·53	..
	State Battery—20-Mile Sandy	..	..	..	170·67	..	..	..	..	..	729·99	..
	Various Works	..	..	..	..	..	..	..	..	50·50	2,407·85	..
	Reported by Banks and Gold Dealers	221·03	..	..	..	..	5,457·45	35·54	..	..	..	..
	Total	**221·03**	**8·99**	**1,443·00**	**2,327·65**	..	**5,596·32**	**372·19**	**34,317·24**	**60,762·19**	..

West Pilbara Goldfield.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Croydon ..	..	Voided leases	..	..	..	..	..	..	..	8·00	5·44	..
Hong Kong ..	..	Voided leases	..	..	..	..	..	..	..	331·00	442·45	..
Do. ..	..	Sundry claims	..	..	..	..	..	21·40	·02	9·00	3·15	..
Lower Nicol	106, 109 ..	Ninety-nine leases	..	..	..	..	..	..	1·10	588·35	343·78	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	64·85	58·44	..
Do. ..	..	Sundry claims	..	..	..	..	..	10·44	2·71	10·00	11·51	..
Mallina ..	..	Voided leases	..	..	..	..	..	..	..	103·60	102·83	..

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

West Pilbara Goldfield—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Pilbarra ..	..	Voided leases	..	..	..	..	..	..	48·12	148·00	293·42	..
Do. ..	..	Sundry claims	..	..	..	..	..	1·11	86·24	..	..	..
Roebourne ..	150	Q. E.	..	..	29·86	70·59	..	..	..	113·36	558·20	233·06
					..	*106·49						
Do. ..	..	Voided leases	..	..	..	..	..	..	..	..	8·18	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	108·60	88·32	67·11
Station Peak	(149)	Prince Regent	..	..	..	..	..	177·74	16·38	..	1,692·75	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	9,993·00	9,382·00	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	37·50	48·19	..
Towranna ..	..	Voided leases	..	..	..	..	..	..	..	1,934·80	2,088·26	..
Weerianna ..	M.L. 143 ..	Carlow Castle	..	..	..	*1·92	..	..	..	..	1·92	..
Do. ..	151	Hillside	..	..	90·00	841·42	..	..	..	320·00	1,030·09	..
Do. ..	151, (152) ..	(Hillside leases)	..	..	..	..	..	..	..	640·00	704·69	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	748·25	522·65	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	12·50	29·69	..
		From Goldfield generally :—										
		Reported by Banks and Gold Dealers	97·78	..	..	..	..	4,731·84	82·54	..	6·38	..
		Total	**97·78**	..	**119·86**	**1,020·42**	..	**4,942·53**	**237·11**	**15,170·81**	**17,422·34**	**300·17**

* From Copper Ore.

Ashburton Goldfield.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Mt. Mortimer ..	..	Sundry claims	..	..	..	..	..	354·37	315·64	..	..	..
Uaroo ..	..	Voided leases	..	..	..	..	..	..	..	..	..	162·02
		From Goldfield generally :—										
		Reported by Banks and Gold Dealers	38·73	..	..	..	..	8,195·03	..	..	..	..
		Total	**38·73**	..	..	..	..	**8,549·40**	**315·64**	..	..	**162·02**

Gascoyne Goldfield.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Bangemall ..	..	Voided leases	..	..	..	..	..	..	6·22	236·70	218·49	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	12·29	..	..	..
		From Goldfield generally :—										
		Reported by Banks and Gold Dealers	6·55	..	..	..	..	309·00	..	..	..	..
		Total	**6·55**	..	..	..	..	**309·00**	**18·51**	**236·70**	**218·49**	..

Peak Hill Goldfield.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Egerton ..	353P	Excelsior	..	..	..	..	..	..	..	3·75	16·13	..
Do. ..	352P	Hibernian	..	..	198·00	150·60	..	..	..	198·00	150·60	..
Do. ..	.. ..	Voided leases	..	..	..	..	..	..	·91	..	..	..
Do. ..	..	Sundry claims	..	6·84	10·00	20·27	..	..	22·98	10·00	20·27	..
Horseshoe ..	(327P)	Brilliant	..	..	..	..	..	..	1,102·77	·04	53·63	..
Do. ..	..	Voided leases	..	..	..	..	..	..	799·32	712·34	1,884·02	2·00
Do. ..	..	Sundry claims	..	..	..	..	..	..	397·32	16·05	45·14	..
Mt. Fraser ..	..	Voided leases	..	..	..	..	..	..	..	389·50	320·96	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	80·00	55·41	..

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

Peak Hill Goldfield—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Peak Hill ..	(3P)	(Atlantic No. 1 North : Peak Hill Goldfields, Ltd.)	..	..	..	..	..	..	..	497·01	552·24	..
Do. ..	(3P)	Atlantic No. 1 North	..	..	8·00	7·00	..	..	..	8·00	7·00	..
Do. ..	364P	Harder to Find	..	..	..	..	..	..	46·29	..	..	..
Do. ..	370P	Lucky Call	..	..	23·00	42·94	..	..	..	23·00	42·94	..
Do. ..	(1P)	(North Star)	..	..	..	..	..	..	162·32	..	..	..
Do. ..	310P	Oversight	..	21·00	240·00	117·00	..	..	113·53	1,318·11	747·03	..
Do. ..	(1P), (2P), (4P), 5P, (6P), (8P), (9P), (13P), (15P), (16P), (26P), (27P), (28P), (29P), (35P), (36P), (43P), (53P), (54P), (63P), (146P), (152P), (190P), (230P), (222P), (239P), (248P), (252P), (262P), (274P), (306P), (312P)	(Peak Hill Goldfields, Ltd.)	..	..	78·00	1,046·69	..	..	191·46	462,057·01	223,273·59	2,285·59
Do. ..	..	Voided leases	..	..	..	..	..	..	191·82	2,353·50	2,182·49	..
Do. ..	..	Sundry claims	..	..	18·00	82·62	..	..	104·97	922·50	332·67	..
Ravelstone ..	..	Voided leases	..	..	..	..	..	..	101·64	4,219·85	3,117·68	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	553·60	283·17	..
Wilgeena ..	..	Voided leases	..	..	..	..	..	..	23·54	128·50	146·79	..
Wilthorpe ..	..	Voided leases	..	..	..	..	..	..	..	47·00	20·93	..
		From Goldfield generally :—										
		Sundry parcels treated at :										
		State Battery—Ravelstone	..	..	..	..	..	..	3·05	..	4·83	..
		Various Works	..	..	..	..	..	..	..	30·00	319·97	..
		Reported by Banks and Gold Dealers	366·68	..	..	..	..	1,218·96	345·17	..	..	..
		Total	366·68	27·84	575·00	1,467·12	..	1,128·96	3,607·09	473,567·76	233,577·49	2,287·59

East Murchison Goldfield.

LAWLERS DISTRICT.

Note.—From the 1st March, 1910, the Lawlers District was subdivided into Wiluna and Lawlers. The gold produced after that date by the mines at Wiluna will be found in the Wiluna District, and the lease numbers of both districts are shown in each case.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Bronzewing	(1017)	Bronze Wing	..	..	..	..	..	..	..	134·50	82·60	..
Do.	..	Voided leases	..	..	..	..	..	..	..	333·50	235·43	1·94
Cork Tree	..	Voided leases	..	..	..	..	..	..	29·90	3,767·00	3,292·87	..
Do.	..	Sundry claims	..	..	..	..	..	..	25·50	13·00	9·32	..
Kathleen Valley	113	(Nil Desperandum)	..	..	..	..	..	..	..	17,960·00	7,618·73	..
Do.	113	Nil Desperandum	..	..	47·00	39·63	..	..	..	1,316·00	805·24	..
Do.	113, (635)	(Nil Desperandum leases)	..	..	..	..	..	..	..	2,722·00	1,625·77	..
Do.	382	(Yellow Aster)	..	..	..	..	..	..	..	37,605·00	27,051·42	..
Do.	382	Yellow Aster: Yellow Aster G.M. Co., N.L.	..	..	196·00	130·10	..	..	..	8,573·75	4,376·22	..
Do.	..	Voided leases	..	..	..	..	..	..	141·57	1,288·50	1,292·34	..
Do.	..	Sundry claims	..	..	..	..	..	..	478·40	1,357·25	762·08	..
Lake Darlot	182	Amazon	..	..	78·50	162·09	..	..	7·92	3,810·50	6,255·93	..
Do.	1164	Ballangarry	..	..	352·50	108·74	..	..	..	352·50	108·74	..
Do.	(1127)	British King	..	..	..	..	..	..	..	101·00	52·50	..
Do.	1166	British King, East	..	..	326·00	207·62	..	..	..	326·00	207·62	..
Do.	626	Filbandint	..	..	..	..	..	..	..	999·00	918·19	..
Do.	375	King of the Hills	..	..	319·00	116·20	..	..	101·48	2,007·00	1,793·99	..
Do.	(1157)	Lass O'Gowrie	..	..	..	..	..	..	5·25	53·00	170·38	..
Do.	648	Monte Christo	..	..	23·00	28·57	..	..	..	23·00	28·57	..
Do.	648, (654), (852)	(Monte Christo leases)	..	..	..	..	..	..	..	6,762·60	3,279·52	..
Do.	273	St. George	..	..	..	..	..	..	2,927·22	839·50	7,915·01	..
Do.	633	(Zangbar)	..	..	..	..	..	..	..	997·00	505·75	..
Do.	633, 823	Zangbar leases	..	..	290·00	85·37	..	..	..	20,340·00	7,664·55	..
Do.	..	Voided leases	..	..	..	..	..	..	827·65	27,203·70	18,824·53	..
Do.	..	Sundry claims	..	..	633·50	332·60	..	1·16	237·43	3,500·14	2,103·38	..
Lawlers	1149	Bung Arrow	..	..	41·00	46·52	..	..	..	41·00	46·52	..
Do.	(900)	Dobra Serica	..	..	..	..	..	..	1·03	1,222·50	1,155·17	..
Do.	(376)	(Donegal: London and Western Australian Exploration Co., Ltd.)	..	..	..	..	..	..	..	38·00	69·73	..
Do.	(377)	(Eastern United Extended	..	..	..	..	..	..	..	103·00	69·72	..

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

East Murchison Goldfield—*continued.*

LAWLERS DISTRICT—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Lawlers ..	(37), 58, 62, 70, 155, (156), 157, 158, (376), (377), (381), (385), (399), (426), (427), (459), (474), (500), (503), (509), (510), (511), (512), (552), (562), (563), (573), (811), (840)	(East Murchison United, Ltd.) ..	..	..	..	..	..	..	..	291,797·00	155,594·26	900·48
Do. ..	1125	Golden Swan	..	..	110·50	110·57	..	..	..	269·50	570·97	..
Do. ..	(37), 58, 62, 70, 155, (156), 157, 158, (376), (377), (381), (385), (399), (426), (427), (459), (474), (500), (508), (509), (510), (511), (512), (552), (562), (563), (573), (811), (840)	(London and Western Australian Exploration Co., Ltd.)	..	..	..	..	..	..	..	179,563·00	40,438·14	2,560·31
Do. ..	1163	May Bee	..	..	1,450·00	391·32	..	..	..	1,450·00	391·32	..
Do. ..	1038	Moa	..	..	49·00	52·76	..	..	..	580·00	483·30	..
Do. ..	(37), 58, 62, 70, 155, (156), 157, 158, (376), (377), (385), (459), (508), (509), (562), (563), (811), (840), 918, 1053, (1106), (1109), (1110), (1123)	Northern Mines, Ltd.	..	..	584·00	2,491·98	121·46	..	..	392,843·50	99,678·85	8,356·89
Do. ..	(385)	(Queen)	..	..	..	..	..	..	..	1,252·00	623·25	..
Do. ..	889	(Rajah)	..	..	..	..	..	..	..	867·00	229·59	..
Do. ..	889, (895) ..	Rajah leases	..	..	..	..	..	..	..	2,998·00	916·01	..
Do. ..	910, 923	Sunrise leases	..	..	2,465·00	479·93	..	..	..	7,809·00	3,887·57	..
Do. ..	(521)	(Vivien)	..	..	..	..	..	..	..	45·50	21·75	..
Do. ..	1165	Vivien	..	..	392·00	164·37	..	..	..	392·00	164·37	..

Do. ..	(908)	Vivien Gem	..	..	219·00	193·28	..	..	86·36	3,677·25	3,116·72	..
Do. ..	(408), (521), (574), (624), (625), (719),	Vivien G.M. Co., Ltd...	..	..	..	..	..	..	..	209,520·18	76,795·19	1,697·88
Do. ..	62 (562), (563) ..	(Waroonga South leases) ..	..	..	..	..	..	..	..	42,150·00	14,329·48	..
Do. ..	1145	White Hope	..	..	68·50	31·24	..	..	..	89·50	58·35	..
Do. ..	988	Wild Cat	..	..	..	..	..	..	..	5,158·50	3,076·53	..
Do. ..	58	(Woronga: London and Western Australian Exploration Co., Ltd.)	..	..	..	..	..	..	..	2,438·50	2,755·45	..
Do. ..	..	Voided leases	..	..	..	..	..	..	332·44	55,963·05	58,615·94	96·33
Do. ..	..	Sundry claims	..	2·88	487·00	399·07	..	14·81	71·45	7,061·85	4,344·51	..
New England ..	..	Voided leases	..	..	..	..	..	..	57·54	899·00	720·25	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	4·32	554·50	465·23	..
Sir Samuel ..	(21), (24), (35), (38), (308), (310), (368), (439), (582), (584), (585), (615), (1126)	Bellevue, Ltd.	..	..	224·00	222·02	5·64	..	..	36,604·50	21,548·38	2,137·58
Do. ..	1158, 1159 ..	Bellevue No. 1 leases	..	..	140·50	161·90	..	..	..	140·50	161·90	..
Do. ..	(21), (24), (35), (38), (308) (310), (368), (369), (439), (582), (583), (584), (585), (586), (615), (890), (891)	(Bellevue Proprietary, Ltd.) ..	..	..	..	..	..	..	..	211,751·00	108,107·88	8,088·00
Do. ..	(1143)	Blue Bell	..	..	96·00	30·01	..	..	..	343·00	130·34	..
Do. ..	1142	Bluey's Release	..	4·50	228·00	159·70	..	..	4·50	350·00	226·97	..
Do. ..	(1144)	Carbine	..	..	84·00	55·06	..	..	..	139·00	147·14	..
Do. ..	(1092)	Dreamland	..	..	..	..	..	..	..	306·00	265·31	..
Do. ..	(1161)	Dreamland	..	..	19·50	23·17	..	..	..	19·50	23·17	..
Do. ..	..	Voided leases	..	..	..	..	..	..	4·54	15,013·00	7,109·68	..
Do. ..	..	Sundry claims	..	..	239·00	128·85	..	..	21·37	1,885·25	1,498·82	..
Wiluna ..	1137, [118J] ..	Aurora	..	..	..	..	..	..	..	8·00	46·38	..
Do. ..	946, [23J] ..	(Bulletin)	..	..	..	..	..	..	..	5,605·00	2,144·82	..
Do. ..	959, [30J] ..	(Bulletin North)	..	..	..	..	..	..	..	391·00	91·44	..
Do. ..	1,039, [51J] ..	Caledonia	..	..	..	..	..	..	..	78·00	138·38	..
Do. ..	140, [2J] ..	(Golden Age)	..	..	..	..	..	..	..	752·00	870·93	..
Do. ..	140, [2J], 162, [4J], 163 [5J]	(Golden Age Consolidated, Ltd.) ..	..	..	..	..	..	..	..	42,521·00	19,750·45	..
Do. ..	140, [2J] ..	(Golden Age: Golden Age Lake Way, Ltd.)	..	..	..	..	..	..	..	12,899·00	7,468·69	..
Do. ..	542, [6J], 548, [7J], 550 [8J], 906 [11J], 930 [13J], 931 [14J], 932 [15J], 937 [17J], (938 [18J]) 943 [21J], (944 [22J]), 952 [26J]	Gwalia Consolidated, Ltd.	..	..	..	..	..	..	..	210,230·32	74,536·14	69·03
Do. ..	954 [28J] ..	(Indicator)	..	..	..	..	..	..	..	767·00	143·44	..
Do. ..	162 [4J], 163 [5J]	(Lake Way leases)	..	..	..	..	..	..	..	630·00	369·60	..
Do. ..	162 [4J]	(Lake Way: Western Australian Goldfields, Ltd.)	..	..	..	..	..	..	..	2,786·00	1,238·44	..
Do. ..	(137 [1J]) ..	Monarch of the East	..	..	..	..	..	..	..	503·00	308·41	..
Do. ..	(137 [1J]) ..	(Monarch of the East: Monarch of the East G.M. Co., N.L.)	..	..	..	..	..	..	..	12,251·00	8,888·27	..
Do. ..	870 [10J] ..	(Moonlight)	..	..	..	..	..	..	..	1,856·00	787·66	..
Do. ..	967 [33J] ..	(Red Page]	..	..	..	..	..	..	..	457·00	434·50	..

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

East Murchison Goldfield—*continued.*

LAWLERS DISTRICT—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Wiluna ..	917 [12J] ..	(Squib)	..	..	..	..	..	..	..	276·50	67·00	..
Do. ..	677 [9J]	(Try Again)	..	..	..	..	..	..	..	1,185·00	1,143·02	..
Do. ..	(942 [20J]) ..	(Try Again Extended) ..	..	..	..	..	..	..	..	306·00	363·87	..
Do. ..	677 [9J] (942 [20J])	Try Again leases	..	..	..	..	..	..	..	200·00	114·65	..
Do. ..	..	Voided leases	..	..	..	..	..	..	537·27	22,747·75	19,295·73	124·00
Do. ..	..	Sundry claims	..	..	..	..	..	5·30	..	2,841·15	1,516·76	..
		From District generally :—										
		Sundry parcels treated at :										
		Black Swan Cyanide Works	..	..	..	..	..	..	..	..	115·69	11·60
		Cinderella Works	..	..	..	203·70	..	..	..	1,202·00	1,822·96	26·00
		Cork Tree Cyanide Works	..	..	..	..	..	..	..	..	57·39	..
		Lawlers Public Battery	..	..	..	734·03	..	..	..	214·00	2,318·27	..
		Old Condor Battery—Sir Samuel	..	..	..	..	..	..	..	..	2·89	..
		State Battery—Lake Darlot	..	..	..	..	..	..	..	315·00	1,097·09	..
		State Battery—Wiluna	..	..	..	..	..	..	..	390·00	2,047·17	20·00
		Urquhart's Cyanide Works	..	..	..	..	..	..	..	.	4,276·70	200·00
		Wilks' Bros. Cyanide Works	..	..	..	..	..	..	..	..	48·48	..
		Various Works	..	..	..	..	..	..	..	117·50	3,881·31	506·73
		Reported by Banks and Gold Dealers	9·91	..	..	..	..	5,454·13	67·15	..	5·74	..
		Total	**9·91**	**7·38**	**9,162·50**	**7,290·43**	**127·10**	**5,475·40**	**5,970·29**	**1,939,253·24**	**860,275·76**	**24,796·77**

WILUNA DISTRICT.

Note.—Previous to the 1st March, 1910, Wiluna formed part of the Lawlers District. The gold produced by mines at Wiluna previous to that date will be found in the Lawlers District, and the lease numbers of both districts are shown in each case.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Mt. Keith ..	118J	Aurora	..	..	76·50	329·43	..	..	..	141·50	506·94	..
Do. ..	131J	Queen of Scots	..	..	16·00	27·01	..	..	..	28·00	43·31	..
Do. ..	(134J)	Talbingo	..	..	6·50	14·53	..	..	..	6·50	14·53	..
Do. ..	..	Sundry claims	..	..	15·50	41·49	..	..	..	24·00	65·15	..

ew England	71J [1083], 72J, [1084]	(May Queen leases)	..	..	..	..	..	..	..	..	..	36·00	25·16	..
Do. ..	71J, [1083], 72J, [1084]	May Queen Reward, Ltd.	..	..	..	786·00	227·73	..	..	..	..	786·00	227·73	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	..	..	952·00	309·11	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	..	..	115·00	100·62	..
Wiluna ..	91J, [940] ..	(Adelaide)	..	..	..	..	..	..	..	..	..	401·00	33·29	..
Do. ..	101J	Band of Hope	..	..	..	..	..	..	..	..	..	128·00	49·85	..
Do. ..	107J	Butchers	..	..	..	59·00	47·04	..	..	..	..	120·00	117·29	..
Do. ..	23J, [946] ..	(Bulletin)	..	..	..	..	..	..	..	..	..	5,787·00	1,427·81	..
Do. ..	51J, [1039] ..	Caledonia	..	..	..	275·00	224·60	..	..	..	..	472·00	467·29	..
Do. ..	(141J)	Comedy King	..	..	..	44·00	45·57	..	..	..	..	44·00	45·57	..
Do. ..	(136J)	Fenian	..	..	..	..	..	..	..	..	..	33·00	4·78	..
Do. ..	2J [140] ..	Golden Age: Wiluna G.Ms., Ltd.	..	..	..	12·00	73·02	..	..	..	..	60·00	96·10	..
Do. ..	111J	Golden Bracelet	..	..	..	83·00	145·11	..	..	..	..	83·00	145·11	..
Do. ..	6J [542], 7J [548], 8J [550], 11J [906], 13J [930], 14J [931], 15J [932], 17J [937], (18J [938]), 21J [943], (22J [944]), 26J [952], 24J [950], 25J [951], 39J [987]	Gwalia Consolidated, Ltd.	..	..	..	1,779·00	540·28	1·37	..	..	..	23,842·00	9,364·87	15·89
Do. ..	119J	Happy Jack	..	..	..	101·00	19·86	..	..	..	..	743·00	236·41	..
Do. ..	114J	Joker	..	..	..	264·00	207·75	..	..	..	..	445·00	347·81	..
Do. ..	161J	Lake View	..	..	..	17·50	1·82	..	..	..	..	17·50	1·82	..
Do. ..	4J [162], 5J [163]	Lake Way leases: Wiluna G.Ms., Ltd.	..	..	..	1,124·00	425·86	..	..	..	..	1,309·00	549·30	..
Do. ..	(1J, [137]) ..	Monarch of the East	..	..	..	..	..	..	..	..	..	2,080·00	1,076·90	..
Do. ..	10J [870] ..	(Moonlight)	..	..	..	4,561·00	880·45	..	..	..	..	5,181·00	1,078·40	..
Do. ..	10J, 37J, 91J, 109J, 123J	Moonlight leases	..	..	..	2,750·00	813·00	..	..	..	..	2,750·00	813·00	..
Do. ..	157J	North Monarch	..	..	..	72·00	26·12	..	..	..	..	72·00	26·12	..
Do. ..	9J [677] ..	Try Again	..	..	..	47·00	6·78	..	..	..	..	47·00	6·78	..
Do. ..	9J [677], (20J [942])	(Try Again leases)	..	..	..	100·00	38·83	..	..	..	..	532·00	296·79	..
Do. ..	120J	Ullina	..	..	..	618·00	127·49	..	..	..	..	923·00	199·70	..
Do. ..	12J [917], 23J [946], 28J [954], 30J [959], 33J [967], 36J [975], 43J [1018] 76J [1090], 113J, 124J, 137J	Wiluna Gold Mines, Ltd.	..	..	..	2,552·50	1,872·02	..	..	..	..	14,475·50	5,776·05	..
Do. ..	(145J)	Wiluna Star	..	..	..	85·00	41·83	..	..	..	..	85·00	41·83	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	..	27·92	2,550·50	1,200·99	..
Do. ..	..	Sundry claims	..	..	3·53	..	586·00	241·77	..	87·59	75·62	1,488·75	827·13	..
	From District generally :—													
	Sundry parcels treated at:													
	State Battery—Wiluna	.. ..			..	..	60·00	1,305·41	..	..	..	130·00	4,095·54	..
	Reported by Banks and Gold Dealers	.. .. ..			..	..	..	..	..	3·20	2·92	..	..	..
	Total	.. .. ..			**3·53**	..	**16,090·50**	**7,724·80**	**1·37**	**90·79**	**106·46**	**65,888·25**	**29,619·08**	**15·89**

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

East Murchison Goldfield—*continued.*

BLACK RANGE DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Birrigrin ..	(109B), (130B) ..	(Birrigrin G.Ms., Ltd.)	..	..	..	..	..	..	..	799·50	546·09	..
Do. ..	(109B)	(Hawthorne)	..	..	..	..	..	..	..	1,555·00	2,013·25	..
Do. ..	757B	Hawthorne	..	..	162·00	57·78	..	..	..	162·00	57·78	..
Do. ..	(109B)	Hawthorne	..	..	..	..	..	..	..	407·75	314·54	..
Do. ..	(109B), (130B) ..	(Hawthorne leases)	..	..	..	..	..	..	..	2,426·50	2,192·03	..
Do. ..	128B	(Pelerin)	..	..	..	..	..	..	..	1,765·46	3,621·53	..
Do. ..	128B	Pelerin	..	..	306·00	470·33	..	..	..	306·00	470·33	..
Do. ..	128B, (356B) ..	(Pelerin leases)	..	..	..	..	..	..	..	1,066·00	1,445·71	..
Do. ..	..	Voided leases	..	..	..	..	..	..	820·68	2,963·95	4,001·50	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	34·52	646·00	446·87	..
Curran's Find	641B	Red, White, and Blue ..	..	..	92·00	73·26	..	..	24·58	172·00	144·73	..
Do. ..	669B	Red, White, and Blue North ..	..	..	..	..	..	..	..	20·00	9·89	..
Do. ..	..	Voided leases	..	..	..	..	..	..	107·70	17·50	28·95	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	2·08	74·50	111·45	..
Hancock's ..	(22B), (233B), (290B), (300B), (309B), (314B), (315B), (321B), (322B)	(Black Range Kohinoor Mining Co., N.L.)	..	..	..	..	..	..	..	5,650·00	6,760·24	29·58
Do. ..	(22B), (290B), (300B), (315B), (322B)	Black Range Kohinoor Mining Co., N.L.	..	..	..	..	..	..	..	625·00	765·22	10·00
Do. ..	478B	Breakaway	..	737·50	153·00	158·40	..	..	1,560·94	773·00	823·32	..
Do. ..	382B	(Bull Oak)	..	..	..	..	..	..	..	725·00	956·77	..
Do. ..	674B	Comedy King	..	18·91	392·00	636·21	..	..	100·29	747·00	1,150·36	..
Do. ..	369B, 379B, 382B, 383B	Comrades leases	..	..	..	..	..	..	..	4,641·50	3,443·73	..
Do. ..	389B	(Faugh-a-ballagh)	..	..	..	..	..	..	..	139·00	109·31	..
Do. ..	389B, 495B ..	(Faugh-a-ballagh leases) ..	..	..	..	..	..	..	59·63	740·00	1,173·75	..
Do. ..	389B, 495B, 710B	Faugh-a-ballagh leases	..	83·27	552·00	582·10	..	..	83·27	552·00	582·10	..
Do. ..	(676B)	Flavinius	..	..	..	..	..	..	3·37	..	..	..
Do. ..	(22B)	Koinoor	..	..	..	..	..	..	..	331·25	1,122·39	..
Do. ..	330B	Koinoor North	..	..	128·00	133·28	..	..	29·76	1,500·00	899·72	..
Do. ..	139B	(Lady Ellen)	..	..	..	..	..	..	..	219·75	458·96	..
Do. ..	139B	Lady Ellen	..	550·47	29·00	108·41	..	..	976·43	152·00	324·28	..
Do. ..	139B, (234B) ..	(Lady Ellen leases)	..	..	..	..	..	..	..	259·50	488·61	11·00
Do. ..	633B, 657B ..	Lady Seddon leases	..	..	18·00	9·89	..	..	..	421·00	225·80	..
Do. ..	383B	(Maid Marion)	..	..	..	..	..	..	2·47	373·00	490·40	..

Do. ..	(300B)	(Sceptic)	..	..	..	..	..	..	3·75	..	..	..
Do. ..	..	Voided leases	..	..	..	..	..	..	65·32	1,314·25	1,357·43	..
Do. ..	..	Sundry claims	..	8·62	329·50	86·02	..	..	10·03	706·50	313·84	..
Maninga Marley	(644B)	Bulletin	..	..	100·00	150·40	..	..	..	412·00	761·99	..
Do. ..	203B	(Havilah)	..	..	..	..	..	..	..	1,507·50	2,315·74	..
Do. ..	203B, 243B, (249B), (254B), 287B, (288B), 289B, (305B), 350B, (504B)	(Havilah G.M. Co., N.L.)	..	..	..	..	..	..	..	36,508·00	20,052·80	22·55
Do. ..	203B, 243B, 287B, 289B, 350B	Havilah G. M. Co., N.L.	..	..	2,860·00	2,965·90	..	..	..	6,026·00	5,029·69	..
Do. ..	203B, 243B, (249B), (254B), 287B, (288B), 289B, (305B)	(Havilah leases)	..	..	..	..	..	..	..	2,240·00	2,432·48	..
Do. ..	(719B)	Lady Mary	..	..	..	..	..	..	191·21	12·40	5·30	..
Do. ..	53B	(Maninga Marley)	..	..	..	..	..	..	..	222·75	274·92	..
Do. ..	53B, 77B, 100B ..	Maninga Marley leases	..	..	310·00	546·49	..	..	..	6,818·33	8,165·33	..
Do. ..	(67B)	Maninga Marley North ..	..	..	..	..	..	..	..	2,872·50	3,770·88	..
Do. ..	(728B)	Vanguard	..	..	64·00	71·11	..	..	..	64·00	71·11	..
Do. ..	..	Voided leases	..	..	..	..	..	..	3·99	599·75	369·30	..
Do. ..	..	Sundry claims	..	..	112·00	95·19	..	..	122·66	539·50	540·24	..
Montagu ..	185B	(Caledonian)	..	..	..	..	..	..	..	346·90	785·20	..
Do. ..	185B, 351B ..	Caledonian leases	..	..	..	..	..	..	..	510·00	587·01	..
Do. ..	135B	Montagu Boulder	..	..	962·00	777·60	..	..	..	6,754·00	4,245·79	..
Do. ..	..	Voided leases	..	..	..	..	..	..	94·39	1,312·50	1,310·03	..
Do. ..	..	Sundry claims	..	..	227·00	82·69	..	..	1·72	612·00	302·80	..
Nungarra ..	(705B)	Lone Hand	..	..	25·00	51·86	..	..	..	25·00	51·86	..
Do. ..	568B	Mac's Addition	..	..	141·00	318·32	..	..	..	242·00	449·27	..
Do. ..	(285B)	Missing Link	..	..	147·00	143·68	..	..	..	431·50	625·21	..
Do. ..	619B	Nungarra Junction	..	..	322·00	156·65	..	..	..	930·50	454·81	..
Do. ..	..	Voided leases	..	..	..	..	..	25·94	241·47	7,922·00	6,408·39	3·64
Do. ..	..	Sundry claims	..	..	253·00	88·79	..	46·67	1,302·73	2,336·15	1,819·45	..
Sandstone ..	4B	(Adelaide)	..	..	..	..	..	..	7·21	7,443·00	12,675·94	..
Do. ..	4B, 5B, 11B, 17B, 26B, 70B, 140B, 150B	(Adelaide leases)	..	..	..	..	..	..	..	21,010·00	30,255·28	..
Do. ..	5B	(Black Range)	..	..	..	..	..	..	152·68	637·00	1,477·66	5·60
Do. ..	4B, 5B, 9B, 11B, 17B, 26B, 70B, 140B, 150B, 256B, 494B, 509B, 620B, 627B	Black Range Mining Co., N.L.	..	..	30,276·00	21,821·47	379·00	4·75	199·90	139,857·00	110,540·23	1,087·00
Do. ..	255B	Black Range West G.M. Co., N.L. ..	..	..	142·00	49·30	..	..	..	142·00	49·30	..
Do. ..	753B	Cardigan	..	597·60	..	..	..	..	597·60	..	..	..
Do. ..	149B	(Golden Gate)	..	..	..	..	..	..	..	113·75	62·98	..
Do. ..	151B	(Golden Key)	..	..	..	..	..	..	..	883·00	1,412·75	..
Do. ..	(702B)	Home Rule	..	..	..	..	..	..	..	40·00	20·13	..
Do. ..	(634B)	Irishman	..	..	..	..	..	..	..	663·00	433·07	..
Do. ..	16B	(Kingoonya)	..	..	..	..	..	..	..	1,406·00	1,850·40	..
Do. ..	509B	(Mary S.)	..	..	..	..	..	..	275·60	70·00	84·09	..

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

East Murchison Goldfield—*continued.*

BLACK RANGE DISTRICT—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Sandstone ..	6B, 10B, 16B, 74B, 81B, 114B, 149B, 151B, 189B, 193B, 206B, 216B, 238B, 463B, 477B, 498B, 553B	Oroya Black Range, Ltd.	..	..	57,590·00	24,623·27	1,958·74	..	..	273,450·00	153,112·19	6,154·63
Do. ..	187B	(Sandridge: Sandstone Development G.M. Co., N.L.)	..	..	..	..	..	..	..	263·00	102·22	..
Do. ..	6B	(Sand Stone)	..	..	..	..	..	..	..	1,439·50	1,938·54	..
Do. ..	174B, 187B, 196B, 229B, 231B, 232B, 236B, 283B, 284B	(Sandstone Development G.M. Co., N.L.)	..	..	..	..	..	..	..	26,086·50	15,055·94	242·30
Do. ..	174B, 187B, 196B, 229B, 231B, 232B, 236B, 283B, 284B	Sandstone G.M. Co., N.L.	..	..	6,452·70	3,064·95	..	..	..	8,650·70	4,354·65	..
Do. ..	766B	Trafalgar	..	95·28	56·00	35·44	..	..	95·28	56·00	35·44	..
Do. ..	10B	(Undaunted)	..	..	..	..	..	..	..	80·00	46·04	..
Do. ..	74B	(Undaunted East)	..	..	..	..	..	..	..	648·25	619·82	..
Do. ..	114B	(Undaunted East Extended) ..	..	..	..	..	..	..	..	276·00	181·34	..
Do. ..	174B	(Wonoka)	..	..	..	..	..	..	..	68·50	36·35	..
Do. ..	174B	(Wonoka: Sandstone Development G.M. Co., N.L.	..	..	..	..	..	..	..	165·00	156·12	..
Do. ..	..	Voided leases	..	..	..	..	..	..	1,059·73	8,363·63	6,781·41	..
Do. ..	..	Sundry claims	..	100·99	322·00	101·32	..	24·01	597·10	1,342·50	660·81	..
Youanme ..	538B	Commonwealth	..	..	319·50	93·52	..	..	..	552·50	216·09	..
Do. ..	622B	(Edna)	..	..	..	..	..	..	..	320·00	210·17	..
Do. ..	526B	(Great Western)	..	..	..	..	..	..	9·71	553·75	417·43	..
Do. ..	(519B)	Hill End	..	..	1,016·50	104·13	..	..	..	3,206·25	718·06	..
Do. ..	(736B)	Irma	..	..	..	..	..	..	..	61·50	6·59	..
Do. ..	564B	(Junction)	..	..	..	..	..	..	..	975·50	668·33	..
Do. ..	760B	New Moon extended	..	..	15·00	20·03	..	..	..	15·00	20·03	..
Do. ..	(738B), (739B) ..	New Moon leases	..	..	41·00	61·13	..	..	..	41·00	61·13	..

Do. ..	630B	(Oversight)	..	..	..	..	..	..	..	132·00	37·05	..
Do. ..	521B	(Peru)	..	..	..	..	..	..	..	98·00	126·86	..
Do. ..	(613B)	Rebel	..	..	..	..	..	..	..	402·50	96·19	..
Do. ..	514B	United	..	..	1,955·00	462·55	..	..	..	6,376·00	2,274·46	..
Do. ..	(754B)	Unity	..	..	26·00	4·70	..	..	..	26·00	4·70	..
Do. ..	518B, 521B, 522B, 525B, 526B, 564B, 585B, 603B, 622B, 626B, 630B	Yuanmi G.Ms., Ltd.	..	..	53,236·00	22,463·02	198·55	..	..	53,236·00	22,463·02	198·55
Do. ..	..	Voided leases	..	..	..	..	..	·36	105·35	1,081·50	559·89	..
Do. ..	..	Sundry claims	..	..	449·50	113·28	..	..	..	778·00	220·62	..
		From District generally :—										
	Sundry parcels treated at :											
	Reply Works		..	..	..	..	..	..	..	37·00	2,524·25	..
	State Battery—Black Range		..	..	..	812·04	..	..	..	202·00	10,062·34	59·53
	State Battery—Youanme		..	..	..	300·52	..	..	..	..	1,953·34	..
	Various Works		..	..	..	..	..	..	..	..	3,133·73	..
	Reported by Banks and Gold Dealers		7·06	..	..	..	..	1,301·34	11·43	..	..	..
	Total		**7·06**	**2,192·64**	**159,581·70**	**81,895·03**	**2,536·29**	**1,403·07**	**8,954·58**	**672,746·02**	**485,396·96**	**7,824·38**

Murchison Goldfield.

CUE DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Barrambie ..	1458, 1459, (1484), (1486), (1560)	Barrambie Ranges G.M. Co., N.L. ..	..	..	225·00	420·16	17·32	..	..	15,665·33	13,566·97	125·60
Do. ..	1458	(Golden Treasure)	..	..	..	..	..	..	6·54	..	..	..
Do. ..	..	Voided leases	..	..	..	..	..	..	15·95	1,238·59	771·55	..
Do. ..	..	Sundry claims	..	..	21·00	15·63	..	..	..	70·50	35·81	..
Cuddingwarra	(1828)	Mad Mull	10·59	28·11	450·50	375·27	..	10·59	28·11	450·50	375·27	..
Do. ..	(1844)	Mad Mull	..	..	182·00	124·55	..	..	..	182·00	124·55	..
Do. ..	..	Voided leases	..	..	..	..	..	..	36·52	34,412·75	43,020·95	15·42
Do. ..	..	Sundry claims	..	..	34·60	99·76	..	..	11·86	376·10	393·34	..
Cue	(1047)	(Agamemnon)	..	..	..	..	..	..	..	2,276·33	1,564·83	..
Do. ..	(1047), (1310) ..	Agamemnon leases	..	..	..	..	..	..	..	4,792·00	2,708·09	..
Do. ..	(1047)	(Agamemnon : Agamemnon, Ltd.) ..	..	..	..	..	..	..	..	7,053·50	4,649·42	..
Do. ..	(1851)	Agamemnon South	..	..	21·50	16·25	..	..	..	21·50	16·25	..
Do. ..	(1847)	Ben-Ma-Chree	..	..	7·00	2·45	..	..	..	7·00	2·45	..

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

Murchison Goldfield—*continued.*

CUE DISTRICT—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Cue ..	(1809)	Bob Bell	..	..	397·00	690·14	..	..	..	439·00	826·70	..
Do. ..	(1819)	Caledonian	..	..	..	..	..	..	6·71	..	..	..
Do. ..	203, 1148 ..	(Cue Consolidated G.Ms., Ltd.) ..	..	..	..	..	..	..	..	23,427·50	18,382·10	..
Do. ..	203	Cue No. 1	..	..	25·50	23·44	..	..	..	7,705·00	12,652·14	..
Do. ..	(1714)	(Dew Drop)	..	..	..	..	..	..	..	111·00	105·47	..
Do. ..	(1714), (1723), (1742)	(Dew Drop leases)	..	..	..	..	..	..	..	293·00	128·61	..
Do. ..	(1714), (1723) ..	Dew Drop leases	..	..	..	..	..	..	3·44	116·41	90·75	..
Do. ..	(1842)	Dew Drop South	..	..	7·50	4·38	..	..	..	7·50	4·38	..
Do. ..	(1796)	Duke of York	..	..	48·00	15·26	..	..	..	421·50	293·78	..
Do. ..	(1826)	Duke of York	..	..	19·50	4·10	..	..	..	19·50	4·10	..
Do. ..	1838	Eclipse	..	..	4·50	4·71	..	..	..	4·50	4·71	..
Do. ..	1637	(Gem of Cue)	..	..	..	..	..	..	..	214·50	233·79	..
Do. ..	1637	Gem of Cue	..	..	132·00	103·81	..	..	..	132·00	103·81	..
Do. ..	1020	Gem of Cue Extended ..	..	..	..	..	..	..	..	36·50	3,601·58	..
Do. ..	1637, (1663) ..	Gem of Cue leases	..	..	..	..	..	..	..	3,264·50	1,941·52	..
Do. ..	1020, (1044) ..	(Gem of Cue, Ltd.)	..	..	..	..	..	..	..	11,724·00	6,746·05	..
Do. ..	(1509)	Happy Jack	..	..	195·50	116·05	..	..	..	1,467·50	1,052·80	..
Do. ..	1783	Hidden Treasure	..	..	3,491·50	2,477·84	..	..	..	7,304·00	8,671·36	..
Do. ..	(1810)	Hidden Treasure Extended ..	..	..	..	..	..	..	..	6·00	7·83	..
Do. ..	(1808)	Hidden Treasure North ..	..	..	19·50	3·67	..	..	..	144·00	47·25	..
Do. ..	1806	Hidden Treasure South ..	..	..	8·07	4·62	..	..	..	8·07	4·62	..
Do. ..	1148	(Light of Asia)	..	..	..	..	..	..	..	10,175·00	7,302·20	..
Do. ..	1148 (1299), (1300), 1634, (1666), (1667)	(Light of Asia leases) ..	..	..	..	..	..	..	..	14,024·00	9,078·43	..
Do. ..	1148, 1151, 1252, (1300), 1362 1498, 1634 (1667)	Light of Asia and Queen of the May leases	..	..	522·00	707·17	..	..	..	692·00	822·98	..
Do. ..	1778	Lord Nolan	..	..	528·30	308·60	..	..	..	1,990·80	1,368·48	..
Do. ..	(1691)	Lucky Hit	..	..	42·00	10·61	..	..	..	489·00	359·04	..
Do. ..	(1812)	Pearl	..	..	..	..	..	..	..	46·00	16·06	..

Do. ..	(1803)	Princess Ada	..	..	162·50	27·64	..	..	..	162·50	27·64	..
Do. ..	222, 653, 1016, 1048, 1114	(Princess (Murchison) Consolidated, Ltd.)	..	..	..	..	..	..	..	6,806·50	6,044·31	..
Do. ..	222, 653, 1016, 1048, 1114	Princess Royal leases	..	..	443·00	287·89	..	..	..	7,104·50	5,720·75	..
Do. ..	1151, 1252, 1362, (1391), 1498, (1689)	Queen of the May leases ..	..	..	..	..	..	..	..	6,926·00	6,974·06	..
Do. ..	1248	Rising Sun	..	..	47·50	21·28	..	..	..	1,330·50	907·37	..
Do. ..	1325	(Starlight)	..	..	..	..	..	..	..	1,506·50	1,473·40	..
Do. ..	1325 (1539) ..	Starlight leases	..	..	148·50	237·10	..	..	..	1,155·50	1,432·07	..
Do. ..	1706	St. Catherine's Bank	..	..	234·00	113·04	..	..	..	503·00	273·97	..
Do. ..	1811	Try Again	..	..	..	..	..	..	..	37·50	15·58	..
Do. ..	(1849)	Uncle Sam	..	..	124·50	24·84	..	..	..	124·50	24·84	..
		Voided leases	..	..	..	..	..	34·72	435·57	110,883·95	70,605·90	43·35
Do. ..	..	Sundry claims	1·46	14·52	976·00	525·09	..	9·04	277·68	10,789·35	6,870·33	..
Eelya ..	(1696)	Jasper Queen	..	..	..	..	..	..	8·78	611·00	1,022·21	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	355·00	751·82	..
Do. ..	..	Sundry claims	..	..	27·00	16·40	..	..	73·65	344·30	385·32	..
Erroll's ..	1743	Great Saddle	..	..	..	95·64	..	..	..	1,729·00	721·81	..
Do. ..	1712	(Mystery)	..	..	1,100·00	811·13	..	..	16·63	7,683·00	2,134·18	..
Do. ..	1712	Mystery: Lupton's G.Ms., N.L. ..	..	..	1,545·00	783·36	..	..	..	1,545·00	783·36	..
Do. ..	(1823)	Treasure	..	..	13·00	16·95	..	..	..	13·00	16·95	..
Do. ..	1764	Three Star	..	..	217·50	153·66	..	..	..	563·50	483·89	..
Do. ..	..	Voided leases	..	..	..	..	..	..	3·62	7,565·00	4,762·05	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	227·00	92·86	..
Mindoolah ..	1845	Economic	..	..	40·00	15·30	..	..	..	40·00	15·30	..
Do. ..	..	Voided leases	..	..	..	..	..	·307	..	7,895·50	4,758·03	42·97
Do. ..	..	Sundry claims	..	..	100·00	45·07	..	..	9·81	1,004·00	1,123·77	..
Reedy's Find	..	Voided leases	..	..	..	..	..	..	210·65	540·00	673·20	..
Do. ..	..	Sundry claims	..	..	..	..	..	136·94	17·76	195·05	116·52	..
Tuckanarra ..	1337	Nemesis	..	..	22·00	20·80	..	..	608·78	2,132·00	5,607·84	..
Do. ..	(1763)	Surprise	..	10·13	..	..	..	..	20·97	13·50	10·50	..
Do. ..	..	Voided leases	..	..	..	..	..	14·65	2,025·53	15,556·60	14,356·61	172·77
Do. ..	..	Sundry claims	..	..	..	..	..	3·76	40·39	2,539·70	5,238·42	..
		From District generally :—										
		Sundry parcels treated at :										
		Cue No. 1 Works	..	..	..	81·68	..	..	..	1,870·50	4,200·52	..
		Gem of Cue Extended Works	..	..	..	116·07	..	..	..	..	712·03	..
		Great Saddle Works	..	..	..	..	..	..	..	..	157·29	..
		Jasper Queen Works	..	..	..	..	..	..	..	..	11·11	..
		Mindoolah Main Réef Works	..	..	..	..	..	..	..	..	542·40	..
		State Battery—Tuckanarra	..	..	..	7·04	..	..	..	518·50	2,791·95	..
		Various Works	..	..	..	..	..	..	..	5,055·02	16,982·67	..
		Reported by Banks and Gold Dealers	..	..	..	..	..	750·72	7·54	..	..	..
		Total	**12·05**	**52·76**	**11,582·97**	**8,928·45**	**17·32**	**963·49**	**3,866·49**	**351,135·35**	**309,902·85**	**400·11**

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

Murchison Goldfield—*continued.*

NANNINE DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Abbott s ..	..	Voided leases	..	..	..	..	..	..	..	35,165·60	37,103·60	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	36·50	58·13	..
Burnakura ..	509N, 527N ..	(Federal City leases)	..	..	..	..	..	..	..	14,583·00	7,288·96	..
Do. ..	509N, 527N, 949N	(Federal City leases)	..	..	..	..	..	..	..	2,084·00	1,120·21	..
Do. ..	509N, 527N, 949N, 1009N	Federal City leases	..	..	528·00	227·41	..	..	..	4,019·00	1,330·40	..
Do. ..	408N	New Alliance	..	21·66	11·00	10·44	..	..	21·66	183·45	122·62	..
Do. ..	408N, 517N ..	(New Alliance leases)	..	..	..	..	..	..	..	12,475·00	15,414·98	13·12
Do. ..	938N	Perseverance	..	..	45·00	70·62	..	..	..	172·00	191·57	..
Do. ..	..	Voided leases	..	..	..	..	..	..	3,206·65	4,929·50	5,087·77	13·78
Do. ..	..	Sundry claims	..	..	..	..	..	11·35	29·53	25·00	18·90	..
Chesterfield ..	1159N	Central	..	109·21	..	..	..	..	206·10	..	..	..
Do. ..	..	Voided leases	..	..	..	..	..	29·02	203·05	6,750·26	7,418·39	·80
Do. ..	..	Sundry claims	..	..	80·00	179·84	..	..	38·83	331·50	391·11	..
Gabanintha ..	1185N	Hidden Gem	..	..	45·00	16·95	..	..	..	45·00	16·95	..
Do. ..	(379N)	(Mountain View)	..	..	..	..	..	..	..	2,626·50	2,141·93	73·17
Do. ..	(577N)	(Mountain View East)	..	..	..	..	..	..	..	60·00	15·12	..
Do. ..	(379N), (504N), (505N)	(Mountain View leases) ..	..	..	..	..	..	..	..	1,476·00	957·27	..
Do. ..	(379N), (504N), (505N), (577N)	Mountain View leases	..	..	..	..	..	..	..	100·00	144·57	..
Do. ..	1068N	New Brew	..	..	236·00	167·96	..	..	..	815·00	575·89	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	14,199·00	8,207·09	451·49
Do. ..	..	Sundry claims	..	25·91	106·00	83·52	..	1·33	34·82	796·00	555·76	..
Garden Gully	(1108N)	Eclipse	..	..	16·25	3·93	..	..	..	16·25	3·93	..
Do. ..	1036N	(Kanowna)	..	..	..	..	..	..	6·49	..	..	..
Do. ..	928N	(Kyarra)	..	..	..	..	..	..	..	761·00	1,145·88	..
Do. ..	928N, 1036N, 1037N, 1077N, 1168N	Kyarra Gold Mine, N.L.	..	..	304·00	335·71	..	..	..	304·00	335·71	..
Do. ..	(1047N)	Once More	..	..	..	..	..	..	..	187·93	189·46	..
Do. ..	..	Voided leases	..	..	..	..	..	26·36	27·88	399·15	716·00	..
Do. ..	..	Sundry claims	..	..	23·10	53·87	..	..	..	183·60	249·23	..
Gum Creek ..	953N	Connecticut	..	..	10·00	228·92	..	..	..	61·00	247·99	..
Do. ..	1067N	Hero	..	..	63·00	141·56	..	..	..	182·00	333·36	..

Do. ..	(672N)	Hilda No. 1	..	..	27·00	47·43	..	..	..	302·25	292·31	..
Do. ..	(853N)	Hilda No. 2	..	..	..	..	..	..	..	24·00	20·72	..
Do. ..	(895N)	Jupiter	..	..	..	..	..	..	..	438·50	488·22	..
Do. ..	..	Voided leases	..	..	..	..	..	25·27	88·12	1,253·33	1,311·57	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	296·00	264·87	..
Jillawarra ..	1187N	Butterfly	..	..	6·00	32·66	..	..	..	6·00	32·66	..
Do. ..	(982N)	Gibraltar Rock	..	7·00	4·00	44·99	..	..	532·44	32·20	351·74	..
Do. ..	(1126N)	Lizard	..	..	..	..	..	..	58·28	11·00	64·28	..
Do. ..	..	Voided leases	..	..	..	..	..	..	459·92	1,431·35	2,320·27	..
Do. ..	..	Sundry claims	..	..	..	..	..	169·02	120·55	17·50	43·78	..
Meeka Pools	(1054N)	Meeka Eldorado	..	..	..	..	..	..	..	111·58	82·27	..
Do. ..	..	Sundry claims	..	..	4·39	4·55	..	..	2·84	211·72	184·83	..
Meekatharra ..	597N	(Commodore)	..	..	..	..	..	..	..	498·00	1,268·71	..
Do. ..	555N	Commodore Block	..	..	132·95	209·71	..	..	..	769·39	1,416·96	..
Do. ..	597N, 1041N ..	Commodore G.M. Co., N.L. ..	..	..	8,321·00	2,543·64	..	..	..	8,321·00	2,543·64	..
Do. ..	(1162N)	Coronation	..	..	27·05	18·66	..	..	..	27·05	18·66	..
Do. ..	477N	(Fenian)	..	..	..	..	..	..	..	8,831·75	18,289·22	..
Do. ..	477N, 814N ..	Fenian leases	..	..	25,872·00	21,837·81	..	..	..	63,152·00	65,088·07	..
Do. ..	912N	Globe	..	..	393·13	634·64	..	..	..	755·48	1,160·25	..
Do. ..	962N, 963N ..	Golden Bar leases	..	..	..	..	..	..	..	24·74	6·69	..
Do. ..	1163N	Golden Bracelet	..	..	500·35	379·35	..	..	..	748·32	733·55	..
Do. ..	313N	Halcyon	..	..	..	..	..	..	2·11	3,461·75	1,415·71	..
Do. ..	635N	Halcyon Extended	..	..	245·00	222·59	..	..	..	882·50	957·77	..
Do. ..	236N	Haveluck	..	..	448·67	333·72	..	..	..	4,183·89	2,697·54	..
Do. ..	475N	(Ingliston Consols Extended) ..	..	..	..	..	..	..	..	1,536·25	4,248·25	·30
Do. ..	475N, 515N, 729N, 822N	Ingliston Consols Extended leases	..	..	13,892·00	8,335·27	..	..	..	45,709·50	34,396·69	..
Do. ..	398N	(Ingliston Extended)	..	..	..	..	..	..	..	1,320·25	1,106·46	..
Do. ..	398N, 437N, 462N, 529N, 539N, 847N, 881N, 1033N	Ingliston Extended G.Ms., Ltd. ..	..	..	7,008·20	4,687·16	..	..	..	73,325·95	38,687·19	..
Do. ..	637N	Ingliston South Extended ..	..	..	..	..	..	..	..	10·00	10·60	..
Do. ..	507N	Ingliston United	..	..	..	..	..	..	..	293·25	147·95	..
Do. ..	1115N	King of the Hills	..	..	541·99	133·57	..	..	..	566·99	211·03	..
Do. ..	852N	Lone Hand	..	..	..	..	..	..	·50	305·85	447·63	..
Do. ..	915N	Macquarie	..	15·26	572·25	257·67	..	..	15·26	3,696·13	1,050·00	..
Do. ..	734N	Macquarie North	..	..	26·25	14·60	..	..	29·85	85·25	25·08	..
Do. ..	533N	Marmont	..	..	6,406·00	2,509·12	..	..	..	43,377·00	31,890·18	..
Do. ..	580N	(Marmont Extended)	..	..	..	..	..	..	..	43·00	38·03	..
Do. ..	580N, 888N ..	Marmont Extended leases ..	..	..	..	..	..	..	..	152·00	129·61	..
Do. ..	(969N)	Multum in Parvo	..	..	..	..	..	..	..	266·00	37·64	..
Do. ..	(93N)	N.93	..	..	112·70	38·16	..	..	36·47	6,577·06	3,410·27	..
Do. ..	372N	Pioneer	..	..	205·39	67·82	..	..	..	6,109·58	5,928·26	..
Do. ..	931N	Queen of the Hill	..	..	..	..	..	..	..	549·00	158·59	..
Do. ..	989N	Radium	..	..	40·57	76·00	..	..	..	158·52	127·70	..
Do. ..	1188N	Stockholm	..	..	9·94	19·17	..	..	..	9·94	19·17	..
Do. ..	1072N	Wayback	..	..	..	..	..	..	..	48·50	32·43	..
Do. ..	..	Voided leases	..	..	..	..	..	2·00	140·22	16,290·73	15,723·09	3·00
Do. ..	..	Sundry claims	..	1·64	152·26	51·24	..	177·68	5·31	1,845·84	1,215·83	..
Munara Gully	..	Voided leases	..	..	..	..	..	..	..	13,167·75	6,489·65	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	7·95	63·00	21·75	..

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

Murchison Goldfield—*continued.*

NANNINE DISTRICT—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Nannine ..	791N	Black Snake	..	..	18·00	14·23	..	..	..	933·60	339·98	..
Do. ..	(273N)	(Caledonian)	..	..	..	..	..	..	..	887·00	1,225·50	..
Do. ..	(8N)	Caledonian Extended	..	..	..	..	..	..	..	1,753·00	2,580·95	..
Do. ..	(273N), (543N) ..	Caledonian leases	..	..	269·50	37·06	..	..	..	4,852·49	1,870·12	..
Do. ..	817N, 1039N ..	Champion South leases ..	..	..	436·00	180·44	..	..	30·72	1,849·00	595·01	..
Do. ..	1197N	Corrigall	..	..	60·00	10·59	..	..	..	60·00	10·59	..
Do. ..	(617N)	Lady Mary line of Reef ..	..	..	..	..	..	..	..	478·00	157·41	..
Do. ..	16N, 25N, 166N ..	Mt. Hall, Royalist Consolidated, and Nannine leases	..	..	531·00	410·10	..	..	..	19,867·60	23,286·69	127·60
Do. ..	(1181N)	Roaring Gimlet	..	..	35·00	9·09	..	..	..	35·00	9·09	..
Do. ..	25N	(Royalist Consolidated) ..	..	..	..	..	..	..	19·18	762·53	3,500·70	..
Do. ..	(984N)	Welcome Stranger	..	..	81·00	23·60	..	..	15·00	330·00	214·43	..
Do. ..	..	Voided leases	..	..	..	..	..	34·02	297·05	55,976·40	32,496·98	39·85
Do. ..	..	Sundry claims	..	16·84	137·50	56·53	..	7·63	71·62	2,187·20	1,712·11	..
Quinn's ..	1218N	Bell Bird	..	16·61	..	..	..	..	16·61	..	..	..
Do. ..	(1169N)	Cadonia	..	..	3·00	6·52	..	..	..	3·00	6·52	..
Do. ..	835N	Commonwealth	..	..	682·10	363·19	..	..	..	1,320·10	806·57	..
Do. ..	1174N	Forget-me-not	..	30·59	..	..	..	..	30·59	..	..	..
Do. ..	994N	Kaladbro	..	324·89	79·10	154·98	..	..	370·70	207·20	269·71	..
Do. ..	(1107N)	Murray	..	..	..	..	..	..	..	15·00	9·89	..
Do. ..	1055N	Parramatta	..	..	299·00	104·53	..	..	..	779·00	449·98	..
Do. ..	622N	Phœnix	..	..	130·00	35·66	..	..	..	4,211·00	1,879·90	90·70
Do. ..	776N	Phœnix Extended	..	..	826·00	297·56	..	..	..	3,625·11	1,447·80	..
Do. ..	843N	Princess Dagmar	..	..	..	..	..	..	..	1,392·00	596·99	..
Do. ..	1193N	Wallaby	..	..	17·50	32·13	..	..	..	17·50	32·13	..
Do. ..	..	Voided leases	..	..	..	..	..	7·30	271·82	2,644·25	1,432·82	..
Do. ..	..	Sundry claims	..	204·95	354·00	222·54	..	2·25	567·99	729·00	420·04	..
Stake Well ..	(593N)	(Koh-i-Noor South)	..	..	..	..	..	..	..	2,714·50	991·63	..
Do. ..	(593N), (604N) ..	Kohinoor South G.M. Co., Ltd. ..	..	..	..	..	..	..	..	14,346·50	6,498·93	..
Do. ..	..	Voided leases	..	..	..	..	..	..	200·12	4,281·00	2,045·51	..
Do. ..	..	Sundry claims	..	17·65	..	..	..	..	31·79	72·00	62·83	..
Star of the East	..	Voided leases	..	..	..	..	..	..	..	27,244·00	20,305·40	..
Do. ..	..	Sundry claims	..	..	18·00	6·84	..	..	..	69·00	19·96	..
Yaloginda ..	(834N)	Black Jack	..	..	..	..	..	..	332·86	19·00	1,112·80	..

Do.	(833N)	Black Jack South	..	..	..	..	..	..	59·24	9·60	113·72	..
Do.	1084N	Chunderloo	..	..	490·25	206·84	..	..	..	549·55	243·11	..
Do.	(760N)	Criterion	..	..	12·36	7·96	..	..	..	639·47	408·94	..
Do.	(708N), (731N)	Gibraltar leases	..	..	..	..	..	..	..	626·50	97·11	..
Do.	937N	Hornsby	..	..	63·00	41·02	..	..	..	475·00	169·73	..
Do.	(771N)	Kelpy	..	..	..	..	..	..	..	70·00	31·28	..
Do.	879N	Maranui	..	..	..	..	..	..	..	212·00	261·11	..
Do.	(923N)	New Chum	..	..	..	..	..	..	62·80	384·50	258·43	..
Do.	(541N)	Revenue North	..	..	82·75	52·71	..	..	..	960·83	578·02	..
Do.	(709N)	(Rocklee)	..	..	..	..	..	..	..	336·00	273·30	..
Do.	(709N), (857N)	Rocklee leases	..	..	..	..	..	..	·44	487·81	314·10	..
Do.	(857N)	Rock Lee South	..	..	..	..	..	..	..	41·00	34·85	..
Do.	891N	Romsey	..	28·77	1,033·00	206·47	..	..	28·77	1,523·03	428·68	..
Do.	675N	(Two Bells)	..	..	..	..	..	..	..	154·50	200·70	..
Do.	(810N)	Two Bells North	..	..	60·41	41·78	..	..	6·13	247·13	232·74	..
Do.	675N, 859N,	Yaloginda Consols G.M. Co., Ltd.	..	..	..	..	..	..	..	58·00	31·16	..
Do.	..	Voided leases	..	..	..	..	..	..	1·90	13,173·00	6,474·47	..
Do.	..	Sundry claims	..	3·71	8·38	59·38	61·31	..	3·71	118·91	791·27	562·29	..
		From District generally :—											
		Sundry parcels treated at :											
		Champion Cyanide Works	..	..	..	..	..	..	..	..	..	856·44	1·04
		Champion Extended Cyanide Works	..	..	..	..	..	..	..	..	..	149·71	6·22
		Karangahaki Works	..	..	..	..	..	..	..	..	..	42·06	..
		Purcell's Cyanide Works	..	..	..	224·18	..	..	..	..	..	630·13	..
		Margueritta Cyanide Works	..	..	..	..	..	..	..	..	..	21·08	..
		State Battery—Meekatharra	..	..	..	2,504·98	..	..	..	14·00	9,781·30	19·00
		State Battery—Nannine	..	..	..	85·00	..	..	..	..	404·11	..
		Various Works	..	..	..	..	..	..	..	139·75	2,076·68	334·91
		Reported by Banks and Gold Dealers	..	233·03	..	..	..	8,490·48	..	..	..	..
		Total	..	**236·74**	**903·36**	**72,194·29**	**49,418·10**	..	**8,987·42**	**7,809·07**	**588,819·80**	**469,054·37**	**1,174·98**

DAY DAWN DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Day Dawn	(478D)	Bulldog	..	..	..	..	..	..	·41	23·25	5·46	..
Do.	(483D), (484D)	Bullfrog leases	..	..	·05	58·90	..	..	..	·05	58·90	..
Do.	389D	(Creme D'or)	..	..	..	..	..	..	..	150·00	175·18	..
Do.	389D, 421D, 422D	Creme D'or leases	2·49	..	246·38	164·25	..	2·49	..	1,454·38	1,437·46	..
Do.	14D	(Crœsus)	..	..	..	..	..	..	..	1,138·00	1,640·41	..

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

Murchison Goldfield—*continued.*

DAY DAWN DISTRICT—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Day Dawn ..	1D, 2D, 86D, 87D, 99D, 119D, 129D, 158D, 159D, 170D, 185D, 191D, 209D, 210D, 211D, 212D, 213D, 224D, 225D, 249D, 424D, 453D, 455D, (467D)	Great Fingall Consolidated, Ltd. ..	..	..	60,003·63	27,199·21	9,102·23	..	..	1,642,089·63	1,080,415·08	150,470·21
Do. ..	464D	Lone Hand	..	..	..	..	..	..	190·25	427·50	625·88	..
Do. ..	477D	Lone Hand South	..	..	57·00	54·88	..	..	6·17	136·50	123·63	..
Do. ..	14D, 138D, 166D, 167D, (180D), 254D, 255D, (256D), 260D, (337D), 432D	Murchison Associated G.Ms., Ltd. ..	..	..	539·25	176·56	..	..	..	6,417·75	3,017·32	..
Do. ..	(489D)	Parisian	..	..	147·00	153·94	..	..	..	147·00	153·94	..
Do. ..	500D	Parisian	..	..	27·00	61·63	..	..	..	27·00	61·63	..
Do. ..	321D	Richmond	..	..	..	..	..	..	4·12	..	..	..
Do. ..	119D	(West Fingall No. 6)	..	..	..	..	..	..	..	43·00	15·32	..
Do. ..	..	Voided leases	..	..	..	..	..	123·81	310·08	31,534·32	21,387·04	·24
Do. ..	..	Sundry claims	..	..	148·33	106·23	..	..	125·32	1,220·93	1,074·55	..
Island ..	(446D)	Central	..	..	..	..	..	5·81	·63	..	..	..
Do. ..	443D	Eureka	1·85	..	16·04	4·02	..	52·93	50·78	81·04	728·80	..
Do. ..	407D	First Chip	..	5·68	156·72	81·69	..	..	275·53	327·98	875·11	..
Do. ..	499D	Skipper	..	..	107·70	57·02	..	..	..	107·70	57·02	..
Do. ..	493D	Sybil	..	5·93	..	..	..	..	5·93	..	..	..
Do. ..	..	Voided leases	..	..	..	..	..	456·43	288·30	28,803·00	43,370·60	..
Do. ..	..	Sundry claims	..	20·89	144·02	63·24	..	17·74	150·90	183·96	110·06	..
Mainland ..	(450D)	Austin Hill	..	..	..	..	..	..	..	238·73	240·21	..
Do. ..	..	Voided leases	..	..	..	..	..	·41	1,821·46	7,033·40	22,889·30	..
Do. ..	..	Sundry claims	..	3·68	..	..	..	3·24	12·08	77·45	89·03	..
Webb's Patch	..	Voided leases	..	..	..	..	..	4·90	83·76	5,748·50	4,850·37	..
Do. ..	..	Sundry claims	..	6·49	17·00	7·60	..	..	117·99	78·00	308·11	..
		From District generally :—										
		Sundry parcels treated at : Various Works	..	..	..	..	..	..	16·61	940·75	1,537·30	..
		Reported by Banks and Gold Dealers	47·24	..	..	..	..	1,479·27	3·48	..	·77	..
		Total	**51·58**	**42·67**	**61,610·12**	**28,189·17**	**9,102·23**	**2,147·03**	**3,463·80**	**1,728,429·82**	**1,185,248·48**	**150,470·45**

MOUNT MAGNET DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Lennonville ..	964M	Empress	..	..	130·00	1,118·53	..	..	..	338·00	1,962·41	..
Do. ..	767M	(Galtee Moore)	..	..	..	..	..	..	6·80	3,025·00	1,180·85	..
Do. ..	767M	Galtee Moore	..	..	755·00	144·89	..	..	..	4,410·00	866·80	..
Do. ..	963M	Galtee Moore Extended ..	..	..	25·00	2·64	..	..	..	892·00	152·50	..
Do. ..	767M (807M) ..	(Galtee Moore leases)	..	..	..	..	..	..	..	578·00	171·97	..
Do. ..	(1038M)	Sunrise	..	..	60·00	20·97	..	..	..	150·00	96·28	..
Do. ..	(1033M)	Wheel North	..	..	41·00	5·50	..	..	..	41·00	5·50	..
Do. ..	(971M)	Wheel of Fortune	..	..	18·00	12·82	..	..	..	107·00	65·53	..
Do. ..	..	Voided leases	..	..	..	..	..	..	3,185·81	122,109·42	107,115·01	458·82
Do. ..	..	Sundry Claims	..	1·24	136·62	74·66	..	..	22·91	1,602·42	871·71	..
Mt. Magnet ..	(317M)	(Birthday)	..	..	..	..	..	..	..	184·50	29·11	..
Do. ..	(314M) (317M) .. (320M), 988M, (989M)	(Black Hill Development Co., Ltd.)	..	..	..	..	..	..	..	15,702·43	9,416·32	..
Do. ..	10·4M	Boogardie View	..	592·41	175·75	1,292·05	..	..	1,358·54	217·75	1,729·99	..
Do. ..	(1021M)	Boomer	..	..	..	..	..	..	..	120·00	29·53	..
Do. ..	507M	(Bronzewing)	..	..	..	..	..	..	43·48	..	..	..
Do. ..	(853M)	(Brown Hill North)	..	..	..	..	..	..	..	771·02	417·40	..
Do. ..	(853M)	Brown Hill North	..	..	..	..	..	..	..	106·00	9·33	..
Do. ..	(853M), (882M) ..	(Brown Hill North Leases) ..	..	..	..	..	..	..	..	1,269·50	274·29	..
Do. ..	(979M)	(Carbine)	..	..	..	..	..	..	..	167·50	137·29	..
Do. ..	(979M), (980M) ..	Carbine leases	..	..	..	..	..	..	..	448·00	279·14	..
Do. ..	(942M)	(Coronet)	..	..	..	..	..	..	..	848·00	256·28	..
Do. ..	490M	(Cushie Doo)	..	..	..	..	..	..	76·71	166·00	263·35	..
Do. ..	905M	Cushie Doo East	..	4·45	..	..	..	..	4·45	46·40	14·64	..
Do. ..	490M, 507M ..	Cushie Doo leases	..	2·20	11·50	9·60	..	..	75·85	1,602·52	661·06	3·05
Do. ..	1070M	Diorite	..	28·28	8·00	33·92	..	..	28·28	8·00	33·92	..
Do. ..	1032M	Early Bird	..	..	351·00	412·97	..	..	114·00	352·00	768·14	..
Do. ..	752M, 826M .. 833M, 1025M	Great Boulder No. 1, Ltd.	..	..	12,712·00	4,979·18	..	..	..	98,081·50	29,764·28	..
Do. ..	761M	Havelock	..	23·75	..	..	..	..	125·79	773·30	646·22	..
Do. ..	1048M	Hesperian	..	34·40	200·28	220·00	..	..	34·40	200·28	220·00	..
Do. ..	(1047M)	Hesperian View	..	..	18·14	15·00	..	..	..	18·14	15·00	..
Do. ..	(1016M)	Mabel Dorothy	..	..	71·75	68·27	..	..	11·20	143·75	165·59	..
Do. ..	1054M	Mabel Dorothy	..	..	12·50	11·68	..	..	..	12·50	11·68	..
Do. ..	1013M	Mars	..	..	113·14	61·23	..	..	..	218·74	104·56	..
Do. ..	(997M)	Morning Star Extended ..	..	..	..	..	..	..	..	118·00	37·45	..
Do. ..	(314M), (317M), (320M), (942M), (972M), 988M, (989M)	Morning Star Gold Mines, Ltd. ..	..	..	8,939·00	2,929·86	..	..	..	16,298·00	5,989·09	..
Do. ..	(314M), (317M), (320M)	(Morning Star leases)	..	..	..	..	..	..	..	63,938·00	35,059·35	..
Do. ..	(972M)	(Morning Star North)	..	..	..	..	..	..	..	13·50	37·10	..
Do. ..	(314M), (317M), (320M)	(Morning Star Quartz Co., N.L.) ..	..	..	..	..	..	..	..	50,750·59	28,994·38	655·73

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

Murchison Goldfield—*continued.*

MOUNT MAGNET DISTRICT—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Mt. Magnet ..	445M	Neptune	..	26·36	157·50	157·37	..	..	895·33	1,959·91	2,543·97	..
Do. ..	(1030M)	New Chum	..	..	42·76	17·17	..	..	..	42·76	17·17	..
Do. ..	1046M	New Year	..	..	150·00	272·88	..	..	..	150·00	272·88	..
Do. ..	(1039M)	Princess Royal	..	20·53	22·00	113·27	..	..	58·97	68·00	270·89	..
Do. ..	1060M	Rescue	..	12·06	139·50	144·58	..	..	12·06	139·50	144·58	..
Do. ..	(892M)	Revenue	..	..	..	..	..	..	..	173·00	888·75	..
Do. ..	911M	(Saturn)	..	..	..	..	..	..	..	305·00	78·29	..
Do. ..	911M	(Saturn: Black Hill Development Co., Ltd.)	..	..	..	..	..	..	..	64·00	38·50	..
Do. ..	911M	Saturn: Morning Star G.M.s, Ltd. ..	..	..	4,022·50	1,245·10	..	..	..	4,588·50	1,356·68	..
Do. ..	696M	Sirdar	..	..	912·35	256·23	..	..	..	11,062·85	3,433·48	..
Do. ..	1059M	Southern Belle	..	..	29·25	11·29	..	..	..	29·25	11·29	..
Do. ..	1043M	Speedwell	..	..	33·50	44·87	..	..	..	33·50	44·87	..
Do. ..	(1027M)	Star View	..	..	..	..	..	..	..	125·50	53·29	..
Do. ..	752M	(St. George)	..	..	..	..	..	..	..	3,335·00	1,439·07	..
Do. ..	1041M	St. Patrick	..	..	113·45	264·10	..	..	..	113·45	264·10	..
Do. ..	1053M	Sunshine	..	21·42	30·75	29·94	..	..	21·42	30·75	29·94	..
Do. ..	1064M	Treasure	..	..	10·00	3·53	..	..	..	10·00	3·53	..
Do. ..	1069M	Turning Point	..	..	·50	53·44	..	..	..	·50	53·44	..
Do. ..	1058M	Two Phills	..	..	14·50	33·74	..	..	..	14·50	33·74	..
Do. ..	(1044M)	Windmill View	..	..	25·79	60·50	..	..	..	25·79	60·50	..
Do. ..	..	Voided leases	..	..	..	..	..	27·83	656·20	50,656·12	57,302·53	13·83
Do. ..	..	Sundry claims	..	62·32	587·02	541·16	..	..	271·26	9,987·73	6,237·00	..
Mt. Magnet East	(1010M)	Lady Maud	..	..	..	..	..	..	10·59	16·03	13·26	..
Do. ..	..	Voided leases	..	..	..	..	..	63·29	753·94	5,506·25	2,798·49	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	37·22	214·50	144·10	..
Moyagee ..	973M	Moonlight	..	..	14·42	110·84	..	..	..	152·05	742·73	..
Do. ..	(1040M)	Peep o' Day	..	..	59·00	230·93	..	..	..	59·00	230·93	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	1,554·60	1,112·41	..
Do. ..	..	Sundry claims	..	..	81·32	61·68	..	..	84·93	301·57	404·31	..
Youanme ..	..	Sundry claims	..	..	..	..	..	..	..	33·00	44·58	..
		From District generally :—										
		Sundry parcels treated at :										
		State Battery—Boogardie	..	..	..	1,435·01	..	..	..	45·01	8,298·76	..
		State Battery—Lennonville	..	..	..	111·66	..	..	..	18·06	6,395·39	..
		Various Works	..	..	..	..	..	..	..	25·00	7,028·75	1·00
		Reported by Banks and Gold Dealers	95·42	..	..	..	..	1,384·46	·35	..	..	..
		Total	**95·42**	**829·42**	**30,224·79**	**16,613·06**	..	**1,475·58**	**7,890·49**	**476,669·44**	**329,645·25**	**1,132·43**

Yalgoo Goldfield.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Adavale ..	..	Sundry claims	..	..	..	..	..	..	..	10·00	12·56	..
Bilberatha ..	..	Voided leases	..	..	..	..	..	..	..	554·00	200·07	..
Carlaminda ..	..	Voided leases	..	..	..	..	..	..	..	947·32	524·72	3·30
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	114·00	71·96	
Field's Find	658	Commodore	..	..	142·00	147·25	..	..	..	142·00	147·25	..
Do. ..	(414), 441, (442), (443)	(Field's Find G.M.s, Ltd.)	..	..	..	..	..	..	..	30,579·00	20,437·49	..
Do. ..	(414), 441, (442), (443)	(Field's Reward G.Ms., Ltd.) ..	..	..	..	..	..	..	..	138·00	266·95	..
Do. ..	(414), 441, (442), (443), (519)	Reward G.Ms., Ltd.	..	..	..	177·25	..	..	60·78	2,409·00	2,484·79	..
Do. ..	..	Voided leases	..	..	..	..	..	..	7·85	102·50	79·58	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	42·13	161·75	148·72	..
Goodingow ..	612, 644 ..	Aster leases	..	..	101·50	39·15	..	..	..	101·50	39·15	..
Do. ..	610	Blue Bell	..	..	40·00	88·96	..	..	..	40·00	88·96	..
Do. ..	603	Carnation	..	..	100·00	225·85	..	..	..	100·00	225·85	..
Do. ..	627	Carnation North	..	..	19·00	47·36	..	..	..	19·00	47·36	..
Do. ..	618	Coronation	..	..	60·00	37·34	..	..	..	60·00	37·34	..
Do. ..	(646)	Daffodil	..	..	52·50	24·48	..	..	..	52·50	24·48	..
Do. ..	615	Daphne	..	..	92·00	135·65	..	..	..	92·00	135·65	..
Do. ..	626	Jacamar North	..	..	58·50	15·82	..	..	..	58·50	15·82	..
Do. ..	606	(Lake View)	..	..	163·00	185·46	..	..	..	163·00	185·46	..
Do. ..	606	Lake View: Payne's Find Development Co., N.L.	..	..	150·00	175·63	..	..	..	150·00	175·63	..
Do. ..	660	Marigold	..	..	105·00	72·16	..	..	..	105·00	72·16	..
Do. ..	630	Marraposa	..	..	200·00	285·34	..	..	..	200·00	285·34	..
Do. ..	613	Orchid	..	..	75·00	327·78	..	..	..	75·00	327·78	..
Do. ..	616	Oversight	..	..	42·00	138·17	..	..	..	42·00	138·17	..
Do. ..	617	Oversight North	..	..	100·00	89·06	..	..	..	100·00	89·06	..
Do. ..	601	Pansy	..	..	220·00	107·61	..	..	..	220·00	107·61	..
Do. ..	(602)	Pansy North	..	..	62·00	34·84	..	..	..	62·00	34·84	..
Do. ..	605	Shamrock	..	..	26·00	8·32	..	..	..	26·00	8·32	..
Do. ..	607	(Sweet William)	..	..	..	..	..	..	2·16	4·85	81·59	..
Do. ..	607, 608, 662 ..	Sweet William Consolidated Mines, N.L.	..	..	147·96	549·17	..	..	..	147·96	549·17	..
Do. ..	..	Sundry claims	148·00	·66	492·50	234·04	..	148·00	·66	492·50	234·04	..
Gullewa ..	170, 171, 174 ..	(Monarch G.M. Syndicate)	..	..	..	..	..	..	..	12·00	9·04	..
Do. ..	170, 171, 174 ..	(Monarch leases)	..	..	..	..	..	..	..	5,571·00	1,640·88	..
Do. ..	586	Shannadoah	..	..	..	..	..	..	..	644·00	497·03	..
Do. ..	170, 171, 174, 562, 576, 577, 578, 579	Victory United G.M. Co., N.L. ..	..	..	1,302·00	476·23	..	..	..	1,540·00	553·59	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	12,600·50	11,170·02	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	169·50	127·99	..
Kirkalucka ..	..	Sundry claims	..	..	..	..	..	..	..	8·80	4·01	..

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

Yalgoo Goldfield—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Melville ..	..	Voided leases	..	..	..	..	..	..	14·37	2,716·50	1,420·76	..
Do. ..	..	Sundry claims	..	..	..	..		11·55	..	238·00	158·11	..
Messenger's Patch ..	..	Voided leases	..	..	..	..	..	..	298·88	587·20	305·89	..
Do. ..	..	Sundry claims	..	30·35	..	..	..	463·12	58·29	304·30	181·28	..
Noongal ..	(600)	Perseverance	..	..	..	..	..	..	..	50·00	6·88	..
Do. ..	672	St. Michael	..	..	27·45	37·52	..	..	..	27·45	37·52	..
Nyounda ..	..	Voided leases	..	..	..	..	..	..	217·63	416·00	183·91	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	18·00	21·67	..
Pinyalling ..	501, 523, 533, 534, 536, 537	Baron Rothschild G.Ms., Ltd. ..	..	..	..	..	..	..	..	216·00	40·60	..
Do. ..	501	(Beryl)	..	..	..	..	..	..	..	432·00	249·01	..
Do. ..	..	Voided leases	..	..	..	..	..	..	1·36	1,543·50	577·47	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	42·50	22·14	..
Rothesay ..	..	Voided leases	..	..	..	..	..	..	..	8,971·00	3,300·07	..
Wadgingarra	..	Voided leases	..	..	..	..	..	..	..	541·61	600·91	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	71·50	38·21	..
Yalgoo ..	495	(Ivanhoe)	..	..	..	..	..	..	..	6·00	5·98	..
Do. ..	495, 518 ..	Ivanhoe G.M. Co., N.L., Yalgoo) ..	..	..	..	..	..	..	..	697·00	236·19	..
Do. ..	518	(Ivanhoe Extended: Ivanhoe G.M. Co., N.L., Yalgoo)	..	..	..	..	..	..	..	123·00	41·69	..
Do. ..	(549)	Royal Mint	..	2·87	136·00	48·82	..	..	2·87	427·50	228·44	..
Do. ..	..	Voided leases	..	..	..	..	..	..	·36	4,732·50	9,412·11	..
Do. ..	..	Sundry claims	..	2·22	16·00	16·96	..	..	6·36	378·50	175·59	..
Yuin ..	409, 469, 470, 524, 525	Bullrush Gold Estates, N.L.	..	..	2,032·00	795·46	..	..	..	2,032·00	795·46	..
Do. ..	409, 469, 470 ..	(Royal Standard leases) ..	..	..	..	..	..	..	..	20,289·50	11,113·24	..
Do. ..	409, 469, 470, 524, 525	(Royal Standard leases) ..	..	..	3,839·00	1,384·38	..	..	..	4,049·00	1,679·01	..
Do. ..	..	Voided leases	..	..	..	..	..	..	127·12	139·00	20·76	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	4·70	276·50	57·88	..
		From Goldfield generally:—										
		Sundry parcels treated at:									32·64	..
		Royal Mint Cyanide Works	..	..	..	..	..	..	..	..	44·95	..
		Wright's Works—Melville	..	..	..	..	..	..	..	..	..	..
		Various Works	..	..	..	..	..	9·42	..	664·00	961·86	..
		Reported by Banks and Gold Dealers	75·76	..	..	..	..	642·24	..	..	..	..
		Total	**223·76**	**36·10**	**9,801·41**	**5,906·06**	..	**1,274·33**	**845·52**	**108,005·24**	**73,230·66**	**3·30**

Mount Margaret Goldfield.

MOUNT MORGANS DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Australia United	(93)	Australian Flag	..	..	50·50	77·42	..	..	..	50·50	77·42	..
Do.		Voided leases	..	..	..	..	..	..	1,911·63	15,863·19	23,228·34	1·76
Do.		Sundry claims	..	..	..	..	..	..	184·96	781·50	2,013·36	..
Federation Well		Voided leases	..	..	..	..	..	..	..	1,248·50	1,782·71	..
Do.		Sundry claims	..	..	..	..	..	..	..	63·50	33·20	..
Korong	(54F)	Alicia	..	..	..	..	..	..	..	..	112·83	..
Do.	(94F)	Korong Queen	..	..	..	..	..	..	..	164·00	24·19	..
Do.		Voided leases	..	..	..	..	..	17·95	72·23	2,558·00	3,336·43	..
Do.		Sundry claims	..	..	..	..	..	..	34·97	258·00	167·06	..
Mt. Margaret	(77F)	Bonanza	..	..	..	..	..	..	..	30·00	17·46	..
Do.	310F	Bonanzo	..	..	14·00	10·45	..	..	..	14·00	10·45	..
Do.	(66F)	Mt. Morven	..	..	..	..	..	·37	..	1,831·00	1,431·45	12·55
Do.		Voided leases	..	..	..	..	..	..	..	2,030·00	1,229·19	..
Do.		Sundry claims	..	..	..	..	..	16·61	44·03	365·50	281·86	..
Mt. Morgans	278F	Australian	..	..	..	..	..	..	..	71·50	19·99	..
Do.	6F	Lily of the Valley South: Westralia Mt. Morgans G.Ms. Co., Ltd.	..	..	..	..	..	..	..	1,587·50	808·18	..
Do.	6F	(Lily of the Valley South: Westralia Mt. Morgans G.Ms. Co., Ltd.)	..	..	..	..	..	..	..	3,002·00	1,022·90	..
Do.	(29F), 30F	(Mt. Morgans Transvaal G.Ms., Ltd.)	..	..	..	..	..	..	..	3,276·00	1,133·47	..
Do.	299F	Multi-Millionaire	..	..	141·00	87·23	..	..	..	141·00	87·23	..
Do.	(29F), 30F, (60F), (261F)	Rowan's Find G.M. Co., N.L.	..	..	3,949·00	1,003·90	..	..	..	3,949·00	1,003·90	..
Do.	289F	Sons of Temperance	..	..	11·00	47·89	..	..	..	11·00	47·89	..
Do.	(29F), 30F	(Transvaal leases)	..	..	..	..	..	..	..	2,309·00	3,605·48	..
Do.	(29F), 30F	(Transvaal leases)	..	..	..	..	..	..	..	5,526·75	1,516·54	..
Do.	(29F), 30F (260F), (261F)	(Transvaal leases)	..	..	..	..	..	..	29·18	350·00	166·76	..
Do.	5F, (10F), (19F), 22F, 32F, (73F)	(Westralia Mt. Morgans G.Ms. Co., Ltd.)	..	..	..	18·96	..	..	..	575,148·00	294,758·28	5,552·63
Do.	7F, 20F, 21F	(Westralia Mt. Morgans G.Ms. Co., Ltd.)	..	..	..	..	..	..	..	18,261·00	8,127·69	..
Do.		Voided leases	..	..	..	..	..	..	47·38	18,392·50	11,862·22	2·10
Do.		Sundry claims	..	..	50·00	16·68	..	6·61	22·66	1,167·25	1,038·49	..
Murrin Murrin	208F	(Alex Junior)	..	..	..	..	..	..	..	2,182·25	2,791·98	..
Do.	208F	(Alex Junior)	..	..	..	..	..	..	..	170·00	88·73	..
Do.	208F, (250F)	(Alex Junior leases)	..	..	..	..	..	..	..	4,981·00	3,504·29	..

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

Mount Margaret Goldfield—*continued.*

MOUNT MORGANS DISTRICT—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Murrin Murrin	195F	(Elbe)	..	..	..	..	..	..	..	60·00	116·41	..
Do. ..	195F	(Elbe)	..	..	..	..	..	..	..	12·00	59·17	..
Do. ..	195F, (197F)	(Elbe leases)	..	..	..	..	..	..	..	2,731·75	2,891·06	3·60
Do. ..	193F, 194F, 195F, 196F, (198F), (199F), (200F), (201F), (202F), 208F, (258F), (259F), 269F, (272F), (273F), (274F), (275F), (279F), (280F), (281F), (295F),	(Hills Proprietary, Ltd.)	..	..	..	..	..	..	..	2,563·47	1,636·94	..
Do. ..	193F, 194F, 195F, 196F, (198F), (199F), (200F), (202F), 208F, (258F), (269F), (274F,) (281F),	Hills Proprietary, Ltd.	..	..	1,940·00	2,078·83	..	..	..	1,940·00	2,078·83	..
Do. ..	269F	(Hopeful)	..	..	..	..	..	..	..	31·00	25·78	..
Do. ..	194F	(Murrin Murrin Proprietary)	..	..	..	..	..	..	..	3,767·00	4,461·70	..
Do. ..	196F	(Perseverance)	..	..	..	..	..	..	..	6,074·50	6,198·52	..
Do. ..	(200F)	(Princess Alix)	..	..	..	..	..	..	..	4,893·00	8,839·80	20·00
Do. ..	(200F)	(Princess Alix)	..	..	..	..	..	..	..	22·93	175·01	..
Do. ..	(200)F, (213F)	(Princess Alix G.M. Co., Ltd.)	..	..	..	..	..	..	..	1,090·00	890·65	..
Do. ..	(200F), (213F)	(Princess Alix leases)	..	..	..	..	..	..	44·33	929·25	1,873·51	..
Do. ..	193F	(Proprietary Extended)	..	..	..	..	..	..	..	1,454·50	1,172·33	..
Do. ..	193F, 194F, (198F), (199F), (201F), (202F)	(Proprietary Extended leases)	..	..	..	..	..	..	..	43,813·00	21,760·15	6·00
Do. ..	..	Voided leases	..	..	..	..	..	10·43	178·60	50,592·07	41,905·75	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	154·48	786·75	756·17	..
Redcastle ..	..	Voided leases	..	..	..	..	..	4·49	436·54	2,509·95	2,169·63	..
Do. ..	..	Sundry claims	..	..	23·00	7·45	..	..	103·58	139·00	163·01	..
		From District generally :—										
		Sundry parcels treated at :										
		Orotava Works—Kalgoorlie	..	..	..	..	..	..	..	..	14·16	..
		Various Works	..	..	..	..	..	..	..	788·50	2,995·91	84·03
		Reported by Banks and Gold Dealers	89·74	..	..	..	..	1,454·68	32·47	..	..	..
		Total	**89·74**	..	**6,178·50**	**3,348·81**	..	**1,511·14**	**3,297·04**	**789,982·11**	**465,514·46**	**5,682·67**

MOUNT MALCOLM DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Cardinia ..	..	Voided leases	..	..	..	..	..	..	1,568·29	1,628·24	3,550·42	..
Diorite King..	1432c	Bower Bird	..	..	34·50	169·10	..	..	..	34·50	169·10	..
Do. ..	(1179c), 1310c, 1340c	Bullfinch West G.M. Co., N.L. ..	..	..	71·00	24·31	..	..	..	71·00	28·31	..
Do. ..	(1172c)	(Homeward Bound)	..	..	..	..	..	..	..	1,127·00	625·59	..
Do. ..	(1179c)	(King of the Hills)	..	..	..	..	..	..	..	1,412·00	1,342·45	..
Do. ..	(1179c), 1310c, 1340c ..	(King of the Hills leases) ..	..	..	..	..	..	..	..	158·00	97·71	..
Do. ..	(1172c), (1205c),	Leeta G.M. Co., Ltd.	..	..	..	..	..	..	..	3,883·00	1,571·70	..
Do. ..	(1220c)	Mount Stirling	..	..	160·00	190·75	..	..	..	727·75	1,212·95	..
Do. ..	1435c	Mount Stirling	..	..	46·00	61·57	..	..	..	46·00	61·57	..
Do. ..	(1336c)	Queen of Hills	..	..	..	..	..	..	..	313·00	481·92	..
Do. ..	..	Voided leases	..	..	..	..	..	..	774·66	24,414·03	23,394·47	..
Do. ..	..	Sundry claims	..	..	20·50	29·27	..	..	65·50	2,225·55	2,770·88	..
Dodger's Well	1317c	Ivy	..	..	179·00	94·20	..	..	..	318·50	206·87	..
Do. ..	..	Voided leases	..	..	..	..	..	..	54·97	780·05	1,641·52	..
Do. ..	..	Sundry claims	..	..	73·00	96·27	..	..	3·37	654·25	452·31	..
Leonora ..	1356c	Auckland	..	..	17·50	12·64	..	..	..	71·00	86·09	..
Do. ..	1288c	Casino	..	..	360·00	705·19	..	..	133·13	897·95	2,002·80	..
Do. ..	198c	(Eastern)	..	..	..	..	..	..	..	302·00	321·72	..
Do. ..	1360c	Federal Mint	..	..	16·50	47·07	..	..	..	22·50	53·10	..
Do. ..	(210c), (253c), ..	(Forrest leases)	..	..	..	..	..	..	60·69	843·00	1,109·34	..
Do. ..	1437c	Gold Blocks West	..	..	12·00	63·73	..	..	..	12·00	63·73	..
Do. ..	(218c), (219c), (776c), (902c), (903c), (904c), (1106c), (1109c), (1110c), (1111c), (1142c), (1157c), (1167c)	(Great Tower Hill G.M., Ltd.) ..	..	..	..	..	..	..	..	62,255·00	20,034·56	10·71
Do. ..	(1357c)	Gwalia North Consolidated ..	..	..	..	..	..	..	..	260·00	91·23	..
Do ..	(218c), (219c), (776c), (902c), (903c), (904c), (1167c)	Gwalia Proprietary, Ltd.	..	..	..	..	..	..	..	244·00	111·12	..
Do. ..	1407c	Harbour Lights	..	..	679·50	72·97	..	..	..	964·50	121·67	..
Do. ..	(1431c)	Jacamar	..	..	16·00	4·70	..	..	..	16·00	4·70	..
Do. ..	195c, 196c ..	Leonora Gold Blocks leases ..	..	..	1,148·00	601·01	..	..	..	15,538·00	13,642·95	..
Do. ..	(210c), (253c) ..	Leonora Main Reefs, Ltd.	..	..	18·00	75·19	..	..	..	14,648·00	5,972·62	..
Do. ..	1424c, 1425c ..	Leonora Main Reefs, Ltd.	..	..	33·00	118·49	..	..	..	33·00	118·49	..
Do. ..	1446c	Mt. Germatong	..	..	21·00	3·42	..	..	..	21·00	3·42	..
Do. ..	1413c	Nil Desperandum	..	..	42·00	62·14	..	..	..	92·00	263·60	..

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

Mount Margaret Goldfield—*continued.*

MOUNT MALCOLM DISTRICT—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Leonora ..	(218c), (219c) ..	(Octagon Explorers, Ltd.)	..	..	..	..	..	..	..	5,000·00	1,569·68	..
Do. ..	1217c	Ping Pong	..	..	142·00	280·47	..	..	..	1,413·50	2,560·36	..
Do. ..	1216c	Rajah	..	..	73·50	234·60	..	..	..	434·00	765·54	..
Do. ..	190c, 198c, 207c, 352c, 353c, 380c, 446c, 447c, 450c, 476c, 489c, 490c, 504c, 523c, 741c, 742c, 807c, 809c, 811c, 812c, 813c, 814c, 980c, 981c, 1082c, 1225c, 1226c, 1227c, 1228c, 1229c, 1230c, 1231c, 1232c, 1259c, 1291c, 1292c, 1341c, 1342c, 1343c, 1344c, 1345c, 1346c, 1347c	Sons of Gwalia, Ltd.	..	..	140,930·00	60,893·32	3,825·20	..	..	1,571,090·50	818,472·13	37,361·68
Do. ..	198c, 1082c ..	(Sons of Gwalia South G.M. Co., N.L.)	..	..	..	..	..	..	..	631·00	903·61	..
Do. ..	198c, 1082c, (1257c), (1258c), 1259c, (1284c), (1285c), (1300c), (1301c)	(Sons of Gwalia South G.Ms., Ltd.) ..	..	..	..	..	..	..	..	98,239·00	51,593·99	8·66
Do. ..	198c, 1082c, 1259c	(Sons of Gwalia South G.Ms., Ltd.)..	..	..	9,909·00	3,169·89	..	..	..	9,909·00	3,169·89	..
Do. ..	263c	(Trump)	..	..	67·50	413·68	..	..	..	562·50	2,393·40	..
Do. ..	263c	Trump: Gwalia Central G.Ms., Ltd.	..	..	36·00	209·30	..	..	..	36·00	209·30	..
Do. ..	263, (774c), (793c),	(Trump leases)	..	..	..	..	..	..	..	21,794·45	16,002·07	..
Do. ..	1307c	Victor	..	247·95	151·00	212·45	..	..	319·35	330·55	466·67	..
Do. ..	..	Voided leases	..	..	..	..	..	..	532·09	23,763·50	9,608·09	..
Do. ..	..	Sundry claims	..	23·47	1,279·50	452·84	..	..	42·96	7,163·05	5,457·70	..
Malcolm ..	(1362c)	Alice	..	..	..	..	..	..	..	77·00	13·55	..
Do. ..	1294c	Great Northern	..	..	79·00	84·45	..	..	..	381·00	297·97	..
Do. ..	1175c	North Star: Malcolm Prospecting Co., N.L.	..	..	3,385·50	2,047·91	..	..	..	19,185·50	11,280·25	..
Do. ..	991c	Richmond Gem	..	..	211·00	669·65	..	..	..	9,179·00	8,016·86	..
Do. ..	1442c	Sunday	..	..	150·00	84·53	..	..	..	150·00	84·53	..
Do. ..	..	Voided leases	..	..	..	..	..	..	47·07	26,271·28	24,238·01	..
Do. ..	..	Sundry claims	..	..	10·00	26·38	..	..	6·64	2,684·40	1,962·59	..
Mertondale ..	(648c)	(Merton's Boulder, Ltd.)	..	..	..	..	..	..	..	160·00	117·64	..

Do. ..	638c, 644c, (645c), (648c), (653c), (1146c), (1178c)	(Merton's Reward G.M. Co., Ltd.) ..	..	..	..	..	..	..	..	..	75,476·50	37,151·80	1,497·58
Do. ..	638c, 644c, (648c), (653c)	Merton's Reward North leases ..	..	..	158·00	867·87	..	..	..	..	452·00	1,313·93	..
Do. ..	638c	(Merton's Reward North) ..	..	..	..	..	..	..	..	..	11,396·50	20,033·09	..
Do. ..	(648c)	(Merton's Reward No. 1 North)	..	..	..	..	..	..	..	..	122·00	89·97	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	..	1,005·00	730·90	..
Do. ..	..	Sundry claims	..	3·33	5·00	16·83	..	..	55·24	..	1,051·00	733·24	..
Mt. Clifford ..	1337c	Just in Time	..	..	..	..	..	..	791·79	..	10·00	272·72	..
Do. ..	1329c	Victory No. 1	..	..	5·25	31·85	..	..	..	..	138·46	4,988·17	..
Do. ..	..	Voided leases	..	..	..	..	..	..	572·66	..	3,255·50	6,723·50	..
Do. ..	..	Sundry claims	..	..	73·00	67·72	..	9·75	208·44	..	635·25	939·05	..
Pig Well ..	1089c	(Gambier Lass)	..	..	..	..	..	..	..	..	4,320·50	4,485·26	26·40
Do. ..	1089c, (1210c) ..	Gambier Lass leases	..	..	..	..	..	..	..	..	4,415·50	3,588·50	..
Do. ..	1295c	(Starlight)	..	..	..	..	..	..	..	..	181·50	695·73	..
Do. ..	1295c, 1324c ..	Starlight leases	..	..	26·00	31·32	..	..	..	..	75·50	235·87	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	..	4,246·07	5,464·44	37·28
Do. ..	..	Sundry claims	..	·55	..	..	..	..	34·61	..	2,391·40	1,036·51	..
Randwick ..	(1423c)	Kia Ora	..	..	50·00	35·83	..	..	..	..	50·00	35·83	..
Do. ..	1401c	Triangle	..	..	15·00	169·50	..	..	..	..	15·15	231·34	..
Do. ..	..	Voided leases	..	..	..	..	..	..	235·37	..	7,881·75	7,114·35	..
Do. ..	..	Sundry claims	..	..	5·00	3·04	..	66·57	79·80	..	1,241·35	847·93	..
Webster's Find	..	Voided leases	..	..	..	..	..	25·00	..	..	21,760·00	13,970·17	..
Do. ..	..	Sundry claims	36·37	..	18·00	5·32	..	36·37	15·73	..	1,365·30	916·47	..
Wilson's Creek	..	Voided leases	..	..	..	..	..	..	..	..	333·50	168·27	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	4·24	..	5·00	19·04	..
Wilson's Patch	(1411c)	All Nations	..	..	330·00	108·06	..	..	..	..	669·00	204·34	..
Do. ..	1120c	(Great Western)	..	..	..	..	..	..	..	..	4,770·00	3,206·85	..
Do. ..	1120c, 1127c, 1130c	(Great Western leases)	..	..	..	..	..	..	..	..	12,698·50	5,572·69	..
Do. ..	1120c, 1127c, 1130c	Great Western (Wilson's Patch) G.M., Ltd.	..	..	2,538·00	992·61	..	..	..	..	4,991·50	1,809·41	..
Do. ..	. . . . .	Voided leases	..	..	..	..	..	..	99·38	..	2,279·10	1,201·27	1·05
Do. ..	. . . . .	Sundry claims	..	..	12·00	20·27	..	..	1·50	..	638·00	354·85	..
	. . . . .												
	. . . . .	*From District generally :—*											
	Sundry parcels treated at :												
	Allsop and Howell's Works—Kalgoorlie		..	..	..	..	..	..	..	..	..	5·00	..
	Drew and Mason's Cyanide Works		..	..	..	..	..	..	..	..	..	93·97	..
	King of the Hills Works		..	..	..	..	..	..	..	..	19·00	749·03	..
	Lang's Cyanide Works		..	..	..	..	..	..	..	..	..	751·23	..
	Mt. Clifford Battery		..	..	..	..	..	..	..	..	..	526·76	..
	Mulcahy's Cyanide Works		..	..	..	138·48	..	..	..	..	..	234·95	..
	Orotava Works—Kalgoorlie		..	..	..	..	..	..	..	..	..	15·90	..
	Randwick Battery		..	..	..	..	..	..	..	..	88·50	124·98	..
	Richmond Gem Works		..	..	..	10·83	..	..	..	..	..	10·83	..
	State Battery—Leonora		..	..	..	56·50	..	..	..	..	95·50	8,456·27	98·14
	State Battery—Pig Well		..	..	..	..	..	..	..	..	22·00	2,297·22	20·12
	Various Works		..	..	..	..	..	..	..	..	242·00	1,398·34	..
	Reported by Banks and Gold Dealers		209·62	..	..	..	..	1,888·68	131·00	..	..	..	..
	Total		**245·99**	**275·30**	**162,606·75**	**73,767·52**	**3,825·20**	**2,026·37**	**5,838·53**	**2,100,805·88**	**1,179,612·71**	**39,061·62**	

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

Mount Margaret Goldfield—*continued.*

MOUNT MARGARET DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Burtville ..	1883T	Birthday Gift	..	..	158·00	118·61	..	..	..	168·00	121·33	..
Do. ..	1832T	Boomerang	..	..	45·00	45·97	..	..	..	387·00	557·78	..
Do. ..	1926T	Dead Horse	..	..	22·00	12·32	..	..	..	22·00	12·32	..
Do. ..	1553T	Golden Bell	..	..	..	..	..	..	..	2,463·00	6,889·87	..
Do. ..	1851T	Golden Bell North	..	..	349·00	442·82	..	..	..	1,229·00	1,610·29	..
Do. ..	1010T	(Karridale)	..	..	..	..	..	..	..	3,727·08	11,278·43	200·00
Do. ..	1010T, 1655T ..	Karridale leases	..	..	36·00	25·64	..	..	..	309·50	514·54	..
Do. ..	1655T	(Karridale South)	..	..	..	..	..	..	..	17·00	17·20	..
Do. ..	1869T	Lone Hand	..	..	84·00	124·42	..	..	..	245·00	392·14	..
Do. ..	943T	(Mikado)	..	..	..	..	..	..	..	342·00	206·14	..
Do. ..	943T, 1124T ..	Mikado G.M. Co., Ltd.	..	..	..	..	..	..	..	11,417·10	9,111·15	8·30
Do. ..	1044T	Nil Desperandum	..	..	379·00	678·53	..	..	..	4,178·00	7,700·81	..
Do. ..	1885T	Nulla Nulla	..	..	97·00	84·62	..	..	..	140·00	107·77	..
Do. ..	1841T	Redeemed	..	197·71	157·00	260·56	..	..	221·97	561·50	732·04	..
Do. ..	(1871T)	Rock of Ages	..	..	..	..	..	..	..	34·00	17·17	..
Do. ..	781T	(Sailor Prince)	..	..	..	..	..	1·27	..	4,771·00	4,725·83	16·00
Do. ..	(1089T)	Savage Captain	..	..	..	..	..	..	..	1,768·20	5,194·01	..
Do. ..	1644T, 1747T ..	Specimen Hill leases	..	..	..	..	..	..	..	2,628·00	1,397·73	..
Do. ..	..	Voided leases	..	..	..	..	..	1·02	128·78	24,007·80	42,454·70	..
Do, ..	..	Sundry claims	..	..	34·00	27·48	..	..	54·75	2,536·15	2,454·04	..
eton ..	1875T	Mulga Queen	..	..	206·00	77·18	..	..	..	470·00	221·08	..
Do. ..	..	Voided leases	..	..	..	..	..	..	110·53	29,502·00	20,300·54	..
Eagles Nest ..	..	Voided leases	..	..	..	..	..	..	145·34	331·00	1,215·78	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	55·00	42·21	..
Erlistoun ..	1382T	King of Creation	..	..	..	..	..	..	11·66	819·00	249·43	..
Do. ..	1915T	May Be	..	..	13·67	9·58	..	..	..	13·67	9·58	..
Do. ..	(1874T)	Mistake	..	..	..	34·56	..	..	..	..	132·73	..
Do. ..	1906T	Mona	..	..	..	111·31	..	..	..	..	111·31	..
Do. ..	1665T	Westralia Tasmania	..	..	2,029·00	342·06	..	..	..	12,939·00	2,396·28	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	12,496·40	15,437·72	..
Do. ..	..	Sundry claims	..	..	138·00	173·77	..	1,175·43	..	2,093·90	1,804·18	..
Euro ..	..	Voided leases	..	..	..	..	..	..	65·14	83,964·25	35,957·12	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	209·00	87·27	..
Laverton ..	1895T	Aeroplane	..	4·45	7·00	15·74	..	..	63·79	13·00	74·77	..
Do. ..	1921T	Aeroplane South	..	..	21·00	3·48	..	..	..	21·00	3·48	..
Do. ..	371T	(Augusta)	..	..	..	..	..	..	..	11,216·00	11,670·72	..

Do. ..	371T	(Augusta : Golden Rhine G.Ms. (W. A.) Ltd.)	..	..	..	..	..	..	..	15,497·50	11,031·75	..
Do. ..	371T, 1650T ..	(Augusta G.M. Co., N.L.)	..	..	..	..	..	..	..	1,753·00	2,037·66	..
Do. ..	1918T	Bega	..	12·34	22·00	122·18	..	..	12·34	22·00	122·18	..
Do. ..	1822T	Brothers United	..	..	30·00	108·85	..	..	8·93	124·00	373·19	..
Do. ..	1797T, 1798T ..	Craiggiemore leases	..	..	..	110·55	..	..	..	27,211·00	5,783·75	..
Do. ..	1922T	Fairfield	..	..	149·00	161·92	..	..	..	149·00	161·92	..
Do. ..	838T	(General Warbash)	..	..	..	..	..	..	..	100·00	288·72	..
Do. ..	829T	(Ida H).	..	..	..	..	..	..	..	111·00	285·13	..
Do. ..	829T, 838T, 846T, 1219T, 1310T, 1671T	Ida H., G.M. Co., Ltd.	..	..	13,607·00	9,058·61	..	..	..	151,751·00	112,755·22	4,674·69
Do. ..	(1784T), (1783T)	Just in Time G.M. Co., N.L. ..	..	..	..	..	..	.	..	469·00	180·50	..
Do. ..	1897T	Lady Harriet	..	..	940·00	92·10	..	..	..	991·00	98·94	..
Do. ..	715T, 806T, 1206T, 1207T, 1483T, 1523T, 1524T, 1525T, 1542T, 1544T, 1548T	(Lancefield G.M. Co., Ltd.)	..	..	..	..	..	..	..	153,829·00	58,842·47	5,824·39
Do. ..	715T, 806T, 1206T, 1207T, 1483T, 1523T, 1524T, 1525T, 1542T, 1544T, 1548T	(Lancefield G.M. Co., Ltd.)	..	..	..	..	..	..	..	102,179·78	39,402·81	..
Do. ..	715T, 806T, 1206T, 1207T, 1483T, 1523T, 1524T, 1525T, 1542T, 1544T, 1548T	Lancefield G.M. Co., Ltd.	..	..	27,694·00	11,272·33	2,415·99	..	..	260,749·00	103,535·54	21,612·29
Do. ..	1840T	(Mary Mac)	..	..	..	..	..	..	..	2,434·00	1,426·40	..
Do. ..	1820T, (1867T) ..	(Mary Mac. G.M. Co., Ltd.)	..	..	..	..	..	..	..	661·00	262·28	..
Do. ..	1840T	Mary Mac. : Mary Mac. G.M. Co., Ltd.	..	..	138·50	215·55	..	..	..	138·50	215·55	..
Do. ..	(1828T)	Normanton	..	..	25·00	21·68	..	..	11·31	242·00	313·20	..
Do. ..	(1868T)	Shiela	..	2·78	..	..	..	..	2·78	43·00	15·76	..
Do. ..	1886T	Toora	..	..	29·00	60·42	..	..	..	29·00	60·42	..
Do. ..	(1855T)	White Horse	..	..	..	..	..	..	..	44·00	89·93	..
Do. ..	..	Voided leases	..	..	..	..	..	..	1,226·99	113,221·60	41,583·99	..
Do. ..	..	Sundry claims	..	·60	208·50	284·48	..	43·56	725·65	2,668·70	2,374·97	..
Mt. Barnicoat	..	Voided leases	..	..	..	..	..	..	..	652·00	359·12	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	23·00	23·37	..
Quartz Hill ..	..	Voided leases	..	..	..	..	..	..	..	10·00	3·86	..
		From District generally :—										
		Sundry parcels treated at :										
		Caledonia Works	..	..	..	..	..	..	..	7·00	53·58	..
		Craiggiemore Works	..	..	..	..	..	..	..	..	110·28	..
		Mulcahy's Works	..	..	..	..	..	..	..	..	67·90	..
		Mulga Queen Works	..	..	..	..	..	..	..	..	140·39	..
		Orotava Works—Kalgoorlie	..	..	..	..	..	..	..	..	19·54	..
		Prosser's Cyanide Works	..	..	..	..	..	..	..	..	31·28	..
		State Battery—Burtville	..	..	..	132·80	..	..	..	62·00	3,874·19	..
		State Battery—Laverton	..	..	..	75·73	..	..	..	49·50	740·84	..
		Various Works	..	..	..	..	..	..	..	82·00	2,769·40	..
		Reported by Banks and Gold Dealers	718·51	..	..	..	..	1,723·22	..	..	..	..
		Total	**718·51**	**217·88**	**46,618·67**	**24,305·85**	**2,415·99**	**2,944·50**	**2,789·96**	**1,050,398·13**	**574,645·52**	**32,335·67**

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

North Coolgardie Goldfield.

MENZIES DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Comet Vale ..	5217z	(Gladsome)	..	..	..	..	..	..	..	10,879·50	8,678·16	95·29
Do. ..	5217z, 5333z, 5380z	Gladsome leases	..	..	4,692·00	3,335·62	100·28	..	..	19,907·00	13,722·55	294·49
Do. ..	(5379z)	Goodenough-for-me	..	..	..	..	..	..	..	21·00	4·41	..
Do. ..	5300z	(Happy Jack)	..	..	..	..	..	..	..	1,363·50	776·10	..
Do. ..	5300z, 5325z	Happy Jack leases	..	..	1,139·00	547·75	..	..	..	4,254·50	2,108·20	..
Do. ..	5325z	(Iron King)	..	..	..	..	..	..	..	41·50	20·62	..
Do. ..	5312z	(Sand King)	..	..	12·00	3·63	..	..	..	35·50	30·33	..
Do. ..	5211z	(Sand Queen)	..	..	..	..	..	..	..	3,436·75	3,639·12	2·00
Do. ..	(5208z), 5211z, 5224J, 5320z	(Sand Queen G.M's., Ltd.)	..	..	..	..	..	..	..	6,803·50	2,949·83	..
Do. ..	5211z, 5224z, 5312z, 5320z	Sand Queen Gold Mines, Ltd. ..	..	..	11,768·51	8,851·14	..	..	..	21,572·05	16,221·05	..
Do. ..	..	Voided leases	..	..	..	..	..	..	409·70	9,939·60	5,508·73	2·00
Do. ..	..	Sundry claims	..	7·98	82·75	26·91	..	..	30·98	477·00	373·26	..
Goongarrie ..	..	Voided leases	..	..	..	..	..	·94	329·39	14,764·64	9,372·01	..
Do. ..	..	Sundry claims	..	..	78·00	70·60	..	27·93	23·11	631·25	521·55	..
Menzies ..	(5253z)	(Africander)	..	..	..	..	..	..	..	236·50	557·54	..
Do. ..	(5253z,) (5267z)	Africander leases	..	..	12·00	7·20	..	..	..	1,134·50	908·97	4·13
Do. ..	(5364z)	Alathea	..	..	..	..	..	..	..	815·00	209·63	..
Do. ..	5354z	Balkis	..	..	818·00	610·22	..	..	..	1,885·50	1,828·12	..
Do. ..	5383z	Brittania	..	..	121·50	140·81	..	..	..	121·50	140·81	..
Do. ..	5377z	Coronation	..	..	254·50	273·50	..	..	..	353·00	362·19	..
Do. ..	(4965z), (4966z)	(Extrenna and Aurelia) ..	..	..	..	..	..	..	..	655·25	371·14	..
Do. ..	(5372z)	Florence: Florence G. M's., Ltd. ..	..	..	15·00	6·92	..	..	..	49·00	41·52	..
Do. ..	5089z	Flying Fish	..	..	126·00	104·42	..	..	..	1,916·00	2,294·74	..
Do. ..	(4855z)	(Goodenough)	..	..	..	..	..	..	..	3,430·95	5,177·86	..
Do. ..	(4855z), (4901z), (4977z)	(Goodenough leases)	..	..	..	..	..	..	..	1,017·00	1,042·80	25·71
Do. ..	(4855z), (4901z) (4977z)	(Lusitania leases: Westralian Machinery Corporation, Ltd.)	..	..	..	..	..	..	..	169·00	219·03	..
Do. ..	5302z	Lady Harriett	..	..	140·00	425·44	..	..	4·74	2,871·00	3,184·07	..
Do. ..	2820z, (3006z) ..	(Lady Shenton Gold Mine, Ltd.) ..	..	..	..	..	..	..	..	96,611·00	132,656·24	..
Do. ..	(2835z)	Lady Sherry	..	..	..	..	..	..	4·74	1,663·21	730·09	..
Do. ..	(2835z), (3914z)	(Lady Sherry leases)	..	..	..	..	..	..	60·77	904·25	683·88	3·11
Do. ..	(4855z)	Lusitania G.M. lease, No. 1 ..	..	..	..	..	..	..	..	400·00	163·69	..
Do. ..	(4855z), (4901z), (4977z)	(Lusitania leases)	..	..	..	..	..	..	..	367·00	303·98	170·94
Do. ..	4895z	Maranoa	..	..	420·00	202·39	..	..	..	420·00	202·39	..
Do. ..	4895z, (4944z).. (5251z), (5252z)	(Maranoa leases)	..	..	..	..	..	..	..	8,075·30	7,769·84	2·50
Do. ..	(3011z), (3031z)	(Menzies Alpha leases)	..	..	..	..	..	..	..	11,807·50	16,330·18	..
Do. ..	4931z, 4934z .. 4935z, 4936z 5074z, 5075z, 5260z, 5261z, 5315z	Menzies Consolidated G.M's., Ltd. ..	..	..	22,581·00	10,169·49	..	..	..	251,977·00	139,045·04	78·67

Do.	..	2820z, (3006z), (3031z)	Menzies Gold Mine leases	..	..	..	4,090·00	4,365·72	265·10	..	..	40,446·25	22,580·04	1,529·07
Do.	..	(2835z)	(Menzies Lady Sherry G.M. Co., N.L.)	..	..	..	..	..	..	10·88	..	2,208·00	2,330·60	..
Do.	..	(2832z), 2844z, 3100z, (3138z), (4966z), 5392z	Menzies Mining and Exploration Corporation, Ltd.	..	..	..	118·75	29·98	..	..	..	25,093·50	29,299·99	..
Do.	..	5359z	No Name	..	..	..	225·50	88·01	..	..	..	808·00	390·76	..
Do.	..	(2836z), (4855z), (4901z), (4977z), (5275z)	(Queensland Menzies G.M. Co., N.L.)	..	..	..	..	..	..	..	..	50,321·50	76,928·28	6,486·90
Do.	..	5392z	(Revival)	..	..	..	22·50	5·90	..	..	..	22·50	5·90	..
Do.	..	2823z	Robinson Crusoe	..	..	..	513·50	309·86	..	..	13·24	2,568·00	1,280·35	..
Do.	..	2823z	(Robinson Crusoe : Crusoe Gold Claims, Ltd.)	..	..	..	..	..	..	..	..	33,135·00	32,978·74	1,038·47
Do.	..	5345z	Seemore	..	..	..	279·50	234·65	..	..	..	681·00	540·00	..
Do.	..	(3031z)	(Stirling)	..	..	..	..	..	..	..	..	827·00	277·81	..
Do.	..	5318z	Surprise	..	..	..	31·00	58·80	..	..	480·50	231·00	607·25	..
Do.	..	(5370z)	Surprise, North	..	..	..	..	..	..	..	..	48·00	137·31	..
Do.	..	3048z, 5336z ..	Warrior leases	..	..	..	1,240·50	793·23	..	..	..	7,826·00	4,557·38	5·00
Do.	..	..	(Warrior : Menzies G.M. Co., N.L.) ..	..	..	..	..	..	..	..	..	1,165·00	731·48	..
Do.	..	..	Voided leases	..	..	..	..	..	..	34·54	477·87	54,847·00	59,413·94	129·03
			Sundry claims	..	69·95		891·25	876·71	..	6·69	340·71	12,581·50	7,401·50	..
Mt. Ida	..	5307z	(Copperfield)	..	..	..	..	..	..	..	..	120·00	24·89	..
Do.	..	5307z	Copperfield	..	..	..	434·00	171·41	..	..	..	1,632·00	1,432·77	..
Do.	..	(5306z), 5307z	(Copperfield leases)	..	..	..	..	..	..	..	..	158·00	89·34	..
Do.	..	5035z	Federation	..	..	..	18·00	27·12	..	..	..	1,801·00	4,677·51	..
Do.	..	5250z	Forest Belle	..	..	..	566·00	367·67	..	..	..	3,086·00	2,723·91	..
Do.	..	5243z, 5321z, (5322z), (5341z), (5355z)	(Mt. Ida Meteor leases) ..	..	..	..	..	..	..	..	..	9,472·00	7,148·80	39·00
Do.	..	5243z, 5321z ..	Mt. Ida Meteor leases	..	..	..	170·00	499·24	..	..	..	584·00	920·94	..
Do.	..	(5367z)	Sandstone	..	..	..	110·00	59·32	..	..	..	494·00	328·62	..
Do.	..	(5349z)	South Timoni	..	..	..	48·00	45·90	..	..	..	222·00	400·75	..
Do.	..	(5374z), (5375z)	Theory leases	..	..	..	..	..	..	..	..	25·00	7·54	..
Do.	..	5321z	(Timoni)	..	..	..	..	..	..	..	..	20·00	36·62	..
Do.	..	5177z	Unexpected	..	..	..	390·00	575·42	..	..	..	3,875·00	7,835·98	..
Do.	..	5363z	Unexpected North	..	..	..	51·00	44·58	..	..	..	138·00	96·61	..
Do.	..	5290z, 5329z, 5381z	Unexpected South leases ..	..	..	..	501·00	716·59	..	..	..	4,454·00	8,122·46	35·64
Do.	..	5292z	Wild Rose	..	..	..	108·00	105·67	..	..	..	664·00	563·31	..
Do.	..	..	Voided leases	..	..	..	..	..	..	..	77·07	22,698·58	27,660·91	23·74
Do.	..	..	Sundry claims	..	..	..	229·00	107·77	..	..	9·57	3,554·50	2,397·23	..
			From District generally :											
			Sundry parcels treated at :											
			Allsop and Howell's Works—Kalgoorlie	..	..	..	..	..	..	..	..	..	3·00	..
			Balkis Battery	..	..	..	..	98·51	..	..	..	..	98·51	..
			Crusoe Welderburn Cyanide Works	..	..	..	..	104·54	..	..	..	..	104·54	..
			Cully & Salkild's Works	..	..	..	..	41·36	..	..	..	..	41·36	..
			Fremantle Trading Co., Ltd.	..	..	..	..	57·29	..	..	..	..	84·45	..
			Goongarrie Cyanide Works	..	..	..	..	..	..	..	..	..	288·51	..
			Lady Harriet Battery	..	..	..	29·00	302·50	..	..	..	62·50	381·93	..
			Menzies Milling Co., Ltd.	..	..	..	..	..	..	..	..	..	365·56	..
			Menzies Mining and Exploration Corporation Ltd., Works	..	..	..	..	..	..	..	..	639·50	732·04	..
			Mt. Ida Cyanide Works	..	..	..	..	..	..	..	..	..	3,323·96	..
			Mt. Ida Meteor Works	..	..	..	..	253·05	..	..	..	..	253·05	..
			Orotava Works—Kalgoorlie	..	..	..	..	..	..	..	..	..	82·42	..
			State Battery—Menzies	..	..	..	56·50	630·42	..	..	..	1,043·50	13,439·36	..
			State Battery—Mt. Ida	..	..	..	50·00	301·06	..	..	..	1,833·25	4,471·57	..
			Various Works	..	..	..	..	..	..	..	..	763·55	2,371·64	122·93
			Reported by Banks and Gold Dealers	..	..	..	..	..	..	881·60	195·48	..	..	..
			Total	..	**77·93**		**52,433·26**	**36,048·32**	**365·38**	**962·58**	**2,457·87**	**771,156·38**	**708,121·09**	**10,088·62**

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

North Coolgardie Goldfield—*continued.*

ULARRING DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Davyhurst ..	(354U), (860U) ..	Callion G.M., Co., W.A., N.L. ..	..	..	..	..	..	..	..	819·00	335·47	..
Do. ..	(860U)	(Callion G.M. Syndicate, N.L.) ..	..	..	..	..	..	..	..	307·00	109·01	..
Do. ..	944U	Corn in Egypt	..	..	258·00	276·79	..	..	..	258·00	276·79	..
Do. ..	459U	(Golden Pole)	..	..	..	..	..	..	..	34·00	47·51	..
Do. ..	459U, 461U, 468U (484U), (786U), (873U)	(Golden Pole G.M's., Ltd.)	..	..	..	..	..	..	..	74,110·90	71,961·09	..
Do. ..	459U, 461U, 468U	Golden Pole G.M's, Ltd.	..	..	1,153·00	493·23	..	..	..	2,483·00	1,476·83	..
Do. ..	459U, 461U, 468U, (484U)	(Golden Pole G.M's., N.L.)	..	..	..	..	..	..	..	970·00	2,321·69	..
Do. ..	613U	(Great Ophir)	..	..	..	..	..	..	..	161·00	96·79	..
Do. ..	613U	(Great Ophir G.M's., Ltd.)	..	..	..	..	..	..	3·34	559·10	311·83	..
Do. ..	613U, 834U, (857U) (864U), (878U), 907U, 924U	(Great Ophir Gold Corporation, Ltd.)	..	..	..	..	..	..	..	3,342·00	468·57	..
Do. ..	613U, 834U (857U), (864U), (878U)	Great Ophir Gold Corporation, Ltd.	..	..	1,125·00	160·66	..	..	..	1,125·00	160·66	..
Do. ..	(440U)	(Homeward)	..	..	..	..	..	..	..	418·50	681·40	..
Do. ..	(440U), (496U) ..	Homeward G.M. Co., Ltd.	..	..	..	..	..	..	..	1,335·73	1,049·98	118·60
Do. ..	(440U), (496U) ..	(Homeward leases)	..	..	..	..	..	..	..	139·00	146·37	..
Do. ..	882U	Lady Ellen	..	..	27·50	29·37	..	..	20·33	629·00	895·57	..
Do. ..	898U	Light of Israel	..	..	..	161·18	..	..	..	2,817·60	643·46	..
Do. ..	(914U)	Light of Israel North	..	..	..	..	..	..	..	76·00	18·98	..
Do. ..	(877U)	(Melrose)	..	..	..	..	..	..	..	29·00	11·27	..
Do. ..	928U	Pirate	..	..	145·75	122·79	..	..	..	423·75	766·71	..
Do. ..	874U	(Resurgam)	..	..	..	..	..	..	..	415·00	769·72	..
Do. ..	874U, (877U) ..	Resurgam leases	..	..	180·25	466·78	..	..	..	1,005·25	2,660·93	..
Do. ..	438U	(Waihi)	..	..	..	..	..	..	4·51	243·50	851·09	..
Do. ..	(496U)	(Waihi Consols)	..	..	..	..	..	..	..	95·00	153·55	..
Do. ..	438U	(Waihi: Westralia Waihi G.M's., N.L.)	..	..	..	..	..	..	..	1,437·00	1,526·94	58·90
Do. ..	438U	Waihi: Westralia Waihi G.M's., N.L.	..	..	169·50	381·51	..	..	..	915·00	961·22	..
Do. ..	907U, 924U ..	Westralia United Goldfields, Ltd. ..	..	..	84·50	38·19	..	..	..	84·50	38·19	..
Do. ..	438U, (792U) ..	(Westralia Waihi G.M's, N.L.) ..	..	..	..	..	..	..	..	26,192·00	15,004·51	5,225·54
Do. ..	..	Voided leases	..	..	..	..	..	2·93	110·81	20,300·90	14,783·83	..
Do. ..	..	Sundry claims	..	..	69·50	67·09	..	..	30·12	4,669·60	2,425·67	..
Mulline ..	949U	California	..	..	22·00	25·76	..	..	..	22·00	25·76	..
Do. ..	(943U)	Corona	..	..	..	..	..	..	..	13·50	11·67	..
Do. ..	(941U)	Elsie	..	..	7·00	10·45	..	..	..	48·00	83·75	..
Do. ..	(871U)	Golden Horn	..	..	31·00	40·72	..	..	..	409·00	742·87	1·93
Do. ..	(936U)	Golden Rock	..	..	38·00	65·17	..	..	..	244·00	466·11	..
Do. ..	(940U)	Guy	..	..	..	..	..	..	..	61·00	45·28	..
Do. ..	934U	Home Turn	..	..	48·50	40·84	..	..	..	108·00	118·81	..

Do. ..	139U, 235U, 555U, 670U, (671U), (679U), (732U), (862U)	(Lady Gladys G.M. Co., N.L.) ..	..	..	..	..	..	..	..	...	16,871·50	17,777·42	..	
Do. ..	139U, 235U, 555U, 670U	(Lady Gladys G.M. Co., N.L.) ..	..	..	361·50	145·79	..	..	..	..	1,220·50	512·52	..	
Do. ..	670U	(Lady Gladys Junction) ..	..	..	..	..	..	..	..	..	..	52·78	..	
Do. ..	139U, 235U, 555U, 670U	Lady Gladys leases	..	..	371·50	169·55	..	..	..	..	371·50	169·55	..	
Do. ..	139U, 235U, 555U	(Lady Gladys leases)	..	..	..	..	..	..	170·89	7,741·00	15,025·05	..		
Do. ..	872U	Peachtree	..	..	18·50	16·44	..	..	..	..	292·50	354·92	..	
Do. ..	324U, 600U, 730U	Riverina South leases	..	..	1,743·00	1,446·49	..	..	43·87	14,364·50	10,685·16	..		
Do. ..	123U	Riverina	..	..	35·00	7·37	..	..	..	3,929·00	2,515·03	..		
Do. ..	123U, (773U) ..	(Riverina G.M. Co., N.L.) ..	..	..	..	..	..	..	..	11,254·00	7,096·21	..		
Do. ..	763U	(Young Australian)	..	..	..	..	..	..	..	1,295·00	3,609·26	..		
Do. ..	763U, (938U), 939U	Young Australian leases ..	..	..	1,769·00	4,004·28	..	..	..	1,769·00	4,004·28	..		
Do. ..	(910U)	Young Australia North ..	..	..	..	..	..	..	..	24·50	22·32	..		
Do. ..	..	Voided leases	..	..	..	..	..	..	59·33	20,319·47	21,010·38		·78	
Do. ..	..	Sundry claims	..	..	314·00	302·35	..	..	33·51	3,615·00	3,198·51		·69	
Mulwarrie ..	919U	Mulwarrie	..	..	210·50	104·47	..	..	..	441·00	225·32	..		
Do. ..	494U	Mulwarrie Main Reef	..	..	74·00	97·01	..	..	..	2,062·50	3,220·59		20·81	
Do. ..	947U	Ularring Westralia	..	..	103·00	90·95	..	..	..	103·00	90·95	..		
Do. ..	..	Voided leases	..	..	..	..	..	..	56·84	15,177·39	21,481·89		5·56	
Do. ..	..	Sundry claims	..	..	141·00	161·80	..	..	19·24	1,392·25	1,116·25	..		
Ularring ..	..	Voided leases	..	..	..	..	..	..	526·63	8,963·85	13,051·86	..		
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	143·00	113·15	..		
	From District generally :—													
	Sundry parcels treated at :													
	Oratava Works—Kalgoorlie	..	..	..	..	..	..	..	..	..	54·39	..		
	State Battery—Mulline	..	..	..	393·20	..	..	..	..	442·50	10,870·59	..		
	State Battery—Mulwarrie	..	..	7·50	206·42	..	..	..	..	586·95	3,069·81	..		
	Various Works	..	..	..	..	..	..	15·82	77·25	44·75	..			
	Reported by Banks and Gold Dealers	..	..	..	..	..	18·53	·77	..	..	..			
	Total	..	..	**8,508·00**	**9,526·65**	..	**21·46**	**1,096·01**	**258,757·99**	**261,822·82**	**5,432·81**			

NIAGARA DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Desdemona ..	725G	Hawk	..	..	..	..	..	..	..	156·00	326·00	..
Do. ..	(685G)	Othello	..	..	..	..	..	..	5·73	1,442·00	615·85	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	7,765·75	6,290·13	12·04
Do. ..	..	Sundry claims	..	..	80·00	22·67	..	..	8·99	1,331·70	634·19	..
Kookynie ..	(27G)	Altona : Cosmopolitan Proprietary Ltd.	..	..	..	..	..	..	..	4,396·00	4,102·63	..

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

North Coolgardie Goldfield—*continued.*

NIAGARA DISTRICT—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Kookynie ..	(27G), (28G) ..	(Altona leases: Cosmopolitan Proprietary, Ltd.)	..	..	..	..	..	..	..	538·00	423·30	..
Do. ..	(31G)	Altona No. 1 North: Cosmopolitan Proprietary, Ltd.	..	..	..	..	..	..	..	596·50	441·64	..
Do. ..	(28G)	Altona No. 1 South: Cosmopolitan Proprietary, Ltd.	..	..	..	..	..	..	..	5,515·00	5,467·00	..
Do. ..	762G	Carpathia	..	..	47·00	14·50	..	..	..	47·00	14·50	..
Do. ..	320G	Champion	..	..	1,349·00	640·58	..	..	..	19,812·50	9,470·37	2·28
Do. ..	320G	(Champion: Champion Proprietary, Ltd.)	..	..	..	..	..	..	..	36,310·00	18,381·09	425·32
Do. ..	320G, (335G), (347G)	(Champion leases)	..	..	..	..	..	..	..	2,157·50	2,554·15	..
Do. ..	320G, (335G), (347G)	(Champion leases: Guthrie & Co., Ltd.)	..	..	..	..	..	..	..	2,705·00	1,556·16	..
Do. ..	(739G)	Christmas Gift	..	..	20·50	7·42	..	..	..	43·50	84·78	..
Do. ..	756G	Cosmopolitan No. 1: Cosmopolitan Proprietary, Ltd.)	..	..	172·00	314·13	..	..	..	172·00	314·13	..
Do. ..	757G	Cosmopolitan No. 2: Cosmopolitan Proprietary, Ltd.	..	..	249·50	402·03	..	..	..	249·50	402·03	..
Do. ..	(26G)	Englishman: Cosmopolitan Proprietary, Ltd.	..	..	..	15·99	..	..	..	543,686·12	264,222·43	4,948·37
Do. ..	(24G)	Irishman: Cosmopolitan Proprietary, Ltd.	..	..	..	..	..	..	..	44·50	44·14	..
Do. ..	(743G)	Lady Alice	..	..	78·50	50·01	..	..	..	122·50	65·50	..
Do. ..	(761G)	Moldavia	..	..	56·50	47·68	..	..	..	56·50	47·68	..
Do. ..	(25G)	Scotchman: Cosmopolitan Proprietary, Ltd.	..	..	..	..	..	..	..	508·00	241·62	..
Do. ..	(696G)	Two D's	..	..	..	..	..	..	..	284·00	235.05	..
Do. ..	..	Voided leases	..	..	..	..	..	..	256·48	110,823·35	73,996·19	..
Do. ..	..	Sundry claims	..	..	84·00	299·52	..	30·59	74·79	3,570·25	2,547·60	..
iagara ..	518G, (529G), (577G)	(Eaglekawk Heather Co., N.L.) ..	..	..	..	..	..	..	..	6,650·00	2,423·32	..
Do. ..	419G, 461G ..	(Hannans Main Reef G.M. Co., Ltd.)	..	..	..	..	..	..	..	11,119·00	5,910·89	..
Do. ..	(661G)	Justice	..	..	10·00	9·24	..	..	..	651·00	762·59	..
Do. ..	(763G)	Lone Hand	..	..	419·00	324·17	..	..	..	419·00	324·17	..
Do. ..	734G	(Lubra Queen)	..	..	..	..	..	..	..	831·00	285·51	..
Do. ..	734G, 735G, 744G, 749G	Lubra Queen G.M. Co., N.L.	..	..	433·00	119·99	..	..	..	433·00	119·99	..
Do. ..	734G, 735G ..	(Lubra Queen leases)	..	..	..	..	..	..	..	1,230·00	966·71	..
Do. ..	721G	May	..	..	379·00	281·13	..	..	..	1,069·50	726·07	..
Do. ..	518G	(Missing Link)	..	..	..	..	..	..	23·93	431·00	563·27	..

Do. ..	518G, (520G), (577G)	Missing Link leases	..	..	..	138·47	..	..	..	440·00	342·62	..
Do. ..	419G	(Opal)	..	..	..	..	..	..	..	552·50	490·53	..
Do. ..	419G	(Opal: Hannans Main Reefs G.M. Co., Ltd.)	..	..	..	..	..	..	..	119·00	70·99	..
Do. ..	419G, 461G, (679G), 688G 689G, (705G)	Orion Mines, Ltd.	..	..	234·00	1,090·87	..	..	..	24,719·00	11,762·81	..
Do. ..	461G	(Pearl: Hannans Main Reef G.M. Co., Ltd.)	..	..	..	..	..	..	..	398·00	224·38	..
Do. ..	(674G)	Pine Lodge	..	..	..	..	..	..	..	641·50	603·06	..
Do. ..	733G	Rally Again	..	..	23·50	12·76	..	..	..	70·00	36·81	..
Do. ..	..	Voided leases	..	..	..	..	..	..	66·97	29,713·50	23,236·75	..
Do. ..	..	Sundry claims	..	2·99	584·50	391·59	..	13·27	45·49	7,263·25	4,512·57	..
Tampa ..	278G	(Fortuna)	..	..	..	..	..			109·00	187·42	
Do. ..	278G, (349G) ..	Fortuna leases	..	..	95·00	69·49	..			1,763·50	2,371·95	
Do. ..	753G, 754G, 759G, 760G	Golden Butterfly G.M. Co., N.L. ..	..	..	5,820·00	1,384·66	63·00	..	..	5,820·00	1,384·66	63·00
Do. ..	(349G)	(Grafter)	..	..	..	..	..	..	..	1,751·00	2,487·00	..
Do. ..	(722G)	Gregory	..	..	..	..	..	..	..	235·00	59·36	..
Do. ..	..	Voided leases	..	..	..	..	..	..	15·66	13,964·05	9,202·55	..
Do. ..	..	Sundry claims	..	..	59·00	22·93	..	5·07	2·06	2,471·00	1,385·76	..
		From District generally :—										
		Sundry parcels treated at:										
		Cumberland Cyanide Works	..	..	..	..	..	..	..	53·00	569·04	..
		Eaglehawk Heather Works	..	..	..	..	..	..	..	128·00	862·26	..
		Grafter Battery	..	..	..	..	..	..	..	82·00	209·74	..
		Murie's Works—Desdemona	..	..	..	..	..	..	..	..	237·41	..
		State Battery—Niagara	..	..	..	606·04	..	..	..	622·50	7,798·92	..
		Various Works	..	..	..	..	..	..	..	270·00	4,687·72	41·17
		Reported by Banks and Gold Dealers	73·81	..	..	..	..	1,312·49	776·90	..	..	..
		Total	73·81	2·99	10,194·00	6,265·87	63·00	1,331·42	1,277·00	856,352·47	477,284·99	5,492·18

YERILLA DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Edjudina ..	(982R)	Christina	..	..	56·17	26·20	..	..	..	56·17	26·20	..
Do. ..	969R	Crows Nest	..	..	110·75	60·80	..	..	..	177·25	122·75	..
Do. ..	994R	Digger	..	..	27·00	12·20	..	..	..	27·00	12·20	..
Do. ..	401R, 500R ..	Edjudina Goldfields, Ltd.	..	..	58·10	25·23	..	..	..	233·60	313·11	..
Do. ..	(980R)	Flavian	..	..	33·00	13·69	..	..	..	158·00	62·16	..

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

North Coolgardie Goldfield—*continued.*

YERILLA DISTRICT—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Edjudina ..	497R	(Gawler)	..	..	..	..	..	..	..	130·00	173·15	..
Do. ..	418R, 497R ..	Gawler G.M. Co., Ltd.	..	..	213·00	303·80	..	..	..	1,505·50	2,641·43	..
Do. ..	968R	Golden Lizard	..	6·58	124·33	120·78	..	..	10·41	419·33	359·29	..
Do. ..	401R	(Neta)	..	..	..	..	..	..	..	4,280·50	5,466·29	..
Do. ..	418R	(Neta Extended)	..	..	..	..	..	..	..	1,182·50	1,421·81	..
Do. ..	401R, 418R, 497R, 500R	(Neta leases)	..	..	..	..	..	..	..	5,217·00	9,968·12	34·58
Do. ..	401R, 500R ..	(Neta leases)	..	..	..	..	..	..	..	1,274·50	1,264·91	..
Do. ..	(981R)	Parisian	..	..	14·66	4·76	..	..	..	14·66	4·76	..
Do. ..	(539R), (557R) ..	Senate leases	..	..	..	137·71	..	..	..	4,605·50	8,666·63	..
Do. ..	..	Voided leases	..	..	..	..	..	..	3·65	8,423·25	7,353·45	3·21
Do. ..	..	Sundry claims	..	..	194·50	223·40	..	..	13·06	2,081·00	1,770·18	..
Eucalyptus ..	..	Voided leases	..	..	..	..	..	..	2,864·77	1,351·35	3,020·68	..
Do. ..	..	Sundry claims	..	..	113·00	117·84	..	..	367·50	283·50	312·33	..
Linden ..	(966R)	Alawa	..	..	..	..	..	..	..	26·00	3·18	..
Do. ..	951R	Camel Back	..	..	173·00	109·61	..	..	..	291·00	189·09	..
Do. ..	965R	Danube	..	..	158·00	254·70	..	..	..	229·50	318·44	..
Do. ..	871R	Democrat	..	..	354·50	185·66	..	..	9·01	1,451·00	3,087·09	..
Do. ..	(978R)	Federal	..	..	..	..	..	..	..	127·50	68·75	..
Do. ..	(967R)	Golden Ridge	..	..	..	..	..	..	..	28·00	21·23	..
Do. ..	928R	Great Carbine	..	..	69·50	22·49	..	7·53	..	981·50	812·83	..
Do. ..	942R	Great Junction	..	..	226·00	89·12	..	..	..	581·00	526·97	..
Do. ..	971R	Linden Star	..	..	16·00	11·08	..	..	..	28·50	21·38	..
Do. ..	972R	New Year's Gift	..	..	300·00	207·42	..	..	..	353·50	284·37	..
Do. ..	988R	Sand King	..	..	100·00	24·28	..	..	..	100·00	24·28	..
Do. ..	..	Voided leases	..	..	..	..	..	..	516·04	7,978·90	11,646·90	..
Do. ..	..	Sundry claims	..	9·81	903·00	547·37	..	77·81	35·11	4,749·50	3,269·00	..
Mt. Celia ..	..	Voided leases	..	..	..	..	..	..	..	14·00	5·39	..
Mt. Howe ..	..	Sundry claims	..	..	..	..	..	..	..	5·00	11·13	..
Mt. Remarkable	..	Voided leases	..	..	..	..	..	..	17·74	528·72	415·09	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	4·00	1·32	..

Pinjin ..	729R	Anglo-Saxon	..	..	428·00	291·50	..	..	..	5,649·90	4,907·78	..
Do. ..	(974R)	Coronation	..	..	265·00	86·51	..	..	..	312·50	110·27	..
Do. ..	962R	Unification	..	..	368·50	142·14	..	..	..	624·00	333·22	..
Do. ..	..	Voided leases	..	..	..	..	..	..	46·99	7,025·40	4,451·55	..
Do. ..	..	Sundry claims	..	..	67·50	52·70	..	..	99·36	2,613·85	1,820·91	..
Yarri ..	788R	Dostmund	..	..	..	..	..	..	..	695·00	1,421·26	2·00
Do. ..	947R	Dostmund West	..	..	19·00	9·89	..	..	..	263·50	417·58	..
Do. ..	581R	Wallaby	..	..	1,252·00	417·24	..	..	41·36	8,490·50	3,660·51	..
Do. ..	580R	(Wallaby Central)	..	..	..	..	..	..	..	2,411·00	2,335·30	..
Do. ..	580R	Wallaby Central	..	14·91	759·50	206·89	..	..	14·91	1,718·50	592·14	..
Do. ..	580R	(Wallaby Central: Lake View South Ltd.)	..	..	..	..	..	..	..	10,109·00	4,488·20	..
Do. ..	(960R)	Wallaby North	..	..	172·50	34·45	..	..	..	730·50	225·06	..
Do. ..	..	Voided leases	..	..	..	..	..	6·30	30·81	6,800·25	4,496·40	..
Do. ..	..	Sundry claims	..	..	116·50	58·21	..	..	3·31	3,792·00	2,205·96	..
Yerilla ..	850R	(Central East)	..	..	..	..	..	..	..	244·00	166·12	..
Do. ..	(970R)	Melba	..	..	28·50	8·23	..	..	..	279·50	62·88	..
Do. ..	752R, 850R ..	Viola leases	..	..	362·50	556·06	..	..	9·64	1,516·50	1,386·83	2·82
Do. ..	(975R)	Viola South	..	·96	..	..	..	..	·96	..	..	..
Do. ..	851R	Yerilla King	..	..	775·00	843·71	..	..	..	2,619·00	2,207·95	..
Do. ..	..	Voided leases	..	..	..	..	..	..	3,078·91	6,717·46	5,554·22	8·54
Do. ..	..	Sundry claims	..	..	172·50	135·40	..	19·30	15·88	1,917·50	1,056·20	..
Yilgangie ..	..	Voided leases	..	..	..	..	..	..	..	218·75	295·45	..
Do. ..	..	Sundry claims	..	..	..	..	..	121·67	2)·83	25·50	46·17	..
Yundamindera	931R	Battles Ville	..	..	382·00	59·93	..	..	..	9·88	303·29	..
Do. ..	(450R), (456R) ..	(Mt. Margaret Reward Claim, Ltd.) ..	..	..	..	..	..	..	..	10,833·00	6,875·91	..
Do. ..	(450R)	(Potosi)	..	..	..	..	..	..		76·00	152·80	..
Do. ..	(450R), (456R), (457R), (466R), (479R), (567R)	(Potosi Consolidated, Ltd.)	..	..	..	..	..	..	..	40,693·85	21,307·98	..
Do. ..	(450R), (456R) ..	Potosi leases	..	..	..	..	..	..	..	1,148·00	2,308·29	..
Do. ..	979R	Potosi	..	..	41·00	94·53	..	..	..	41·00	94·53	..
Do. ..	990R	Undaunted	..	..	23·00	11·91	..	..	..	23·00	11·91	..
Do. ..	..	Voided leases	..	..	..	..	..	..	71·37	13,236·25	14,093·36	5·82
Do. ..	..	Sundry claims	..	..	127·00	108·61	..	..	85·22	2,029·00	1,646·20	..
	From District generally :—											
	Sundry parcels treated at :											
	Edjudina Goldfields, Ltd., Works	..	..	..	284·08	..	..	..	..	..	284·08	..
	Fremantle Trading Coy's Works	...	..	..	..	..	..	..	..	..	4·92	..
	State Battery—Linden	..	..	..	..	..	..	..	..	72·00	1,642·49	..
	State Battery—Pinjin	..	..	..	39·70	..	..	..	..	115·50	1,178·69	..
	State Battery—Yarri	..	..	..	297·79	..	..	..	..	231·50	3,069·17	3·50
	State Battery—Yerilla	..	..	..	..	..	2·17	..	..	72·00	410·94	..
	Various Works	..	..	..	..	..	..	..	..	660·85	3,179·33	..
	Reported by Banks and Gold Dealers	5·02	..	..	..	..	993·72	154·74	..	..	..
	Total	**5·02**	**32·26**	**8,604·51**	**6,237·62**	..	**1,228·50**	**7,520·58**	**183,942·29**	**162,476·74**	**60·47**

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

Broad Arrow Goldfield.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Bardoc ..	(1423w)	Golden Eagle	..	..	..	..	..	..	..	96·25	427·12	..
Do. ..	(1426w)	Grafter	..	..	4·20	7·91	..	..	..	24·60	24·35	..
Do. ..	1661w	Wycheproof	..	..	23·20	1·88	..	..	..	23·20	1·88	..
Do. ..	1659w	Zoroastrian	..	..	200·00	24·75	..	..	..	200·00	24·75	..
Do. ..	..	Voided leases	..	..	..	..	..	..	256·68	71,867·31	50,012·16	203·60
Do. ..	..	Sundry claims	..	..	..	..	..	..	180·70	2,375·25	1,718·16	..
Black Flag ..	(1384w)	Lady Bountiful	..	..	..	..	..	..	3·11	273·55	409·87	..
Do. ..	..	Voided leases	..	..	..	..	..	27·81	353·45	39,654·36	23,804·71	..
Do. ..	..	Sundry claims	..	..	..	..	..	686·51	154·78	1,863·95	1,763·27	..
Broad Arrow	(3w), (138w), (139w), (173w), (1334w)	Claremont G.M. Ltd.	..	..	9·90	10·08	..	..	..	6,186·90	4,388·74	..
Do. ..	(1334w)	(Claremont)	..	..	..	..	..	..	..	118·00	33·50	..
Do. ..	(1391w)	Duke	..	..	..	..	..	..	..	2,859·00	343·29	..
Do. ..	1636w	Eldorado	..	261·72	..	..	..	..	261·72	20·00	35·65	..
Do. ..	(3w), (138w), (139w), (173w)	(Golden Arrow Mine, Ltd.)	..	..	..	..	..	..	..	35,878·75	20,187·46	15·85
Do. ..	(1411w)	Panhandle	..	..	220·22	151·13	..	..	..	545·32	417·01	..
Do. ..	(1256w)	Talbot	..	..	..	..	..	..	21·13	1,168·00	1,326·66	..
Do. ..	..	Voided leases	..	..	..	..	..	54·85	796·08	69,381·41	68,216·97	..
Do. ..	..	Sundry claims	9·67	..	319·08	483·86	..	967·96	546·45	6,499·30	4,025·55	..
Paddington ..	1639w	Mount Corlic	..	..	38·50	23·65	..	..	..	199·00	136·37	..
Do. ..	(1356w)	Recovery	..	..	..	..	..	..	..	671·40	1,008·30	..
Do. ..	(1047w)	Star of W.A.	..	..	27·50	540·86	..	..	253·38	10,908·65	9,596·34	..
Do. ..	1658w	Star of W.A.	..	..	65·80	218·47	..	..	..	65·80	218·47	..
Do. ..	1650w	Try it Again	..	..	83·00	35·68	..	..	..	83·00	35·68	..
Do. ..	..	Voided leases	..	..	..	..	..	5,557·72	4·37	161,325·15	69,956·11	18·96
Do. ..	..	Sundry claims	..	..	59·56	35·37	..	1,714·16	..	9,259·65	5,360·05	..
Siberia ..	1399w, 1424w, 1429w, 1442w, 1655w	Associated Northern Blocks (W.A.), Ltd.	..	..	22,913·00	5,256·19	..	..	..	22,913·00	5,256·19	..
Do. ..	(1347w)	Expectation	..	..	14·00	12·95	..	..	..	367·50	357·67	..
Do. ..	(1475w)	Gimblet Duke	..	..	..	..	..	..	..	83·00	28·11	..
Do. ..	1371w	Gimblet South	..	..	1,340·00	396·21	..	..	..	9,107·50	2,236·81	..
Do. ..	1399w	(Gimblet South Extended) ..	..	..	..	..	..	..	..	525·00	835·44	..
Do. ..	1399w, 1424w, 1429w, 1442w	(Gimblet South Extended leases)	..	..	..	..	..	..	..	215·00	39·98	..
Do. ..	1338w	(Gimblet West)	..	..	..	..	..	..	..	680·50	482·83	..

o. ..	1286w, 1403w	Golden leases	..	80·80	25·50	70·52	..	..	363·28	143·91	503·88	..
o. ..	(1390w)	(Golden Gimblet)	..	..	..	..	..	..	1·23	202·00	150·42	..
o. ..	(1390w), (1453w), (1476w)	Golden Gimblet leases	..	..	67·00	26·77	..	..	..	67·00	26·77	..
Do. ..	1358w	Golden Mount	..	..	23·00	7·80	..	..	4·26	1,234·00	726·94	..
Do. ..	(1292w)	Invincible	..	..	15·00	48·72	..	..	..	1,232·50	375·00	..
Do. ..	1435w	Invincible South ..	..	..	20·00	12·88	..	..	..	20·00	12·88	..
Do. ..	1434w	Jack Hugh	..	..	75·00	332·89	..	..	..	91·00	454·76	..
Do. ..	1289w, 1308w ..	Lady Evelyn leases	..	..	131·50	126·48	..	..	6·90	2,679·75	2,670·07	..
Do. ..	(1632w)	Lily	..	..	..	..	..	..	..	52·00	3·11	..
Do. ..	1293w	Mexico	..	..	95·00	157·45	..	..	..	95·00	157·45	..
Do. ..	1293w, (1298w)	(Mexico leases)	..	..	40·00	83·32	..	..	..	457·00	999·75	..
Do. ..	1291w	Missouri	..	..	176·00	63·12	..	..	8·64	1,434·50	533·29	..
Do. ..	1416w	Prince Foote	..	..	..	..	..	..	..	22·50	23·26	..
Do. ..	1375w	Siberia Consols	..	41·58	403·50	530·00	..	..	41·58	1,013·50	3,136·03	..
Do. ..	(1587w)	Sink to Rise	..	..	..	..	..	..	..	24·00	15·90	..
Do. ..	1336w	(Slippery Gimblet)	..	..	..	..	..	..	..	26,110·50	8,217·79	..
Do. ..	1336w, 1338w, 1419w	Slippery Gimblet Leases ..	..	..	..	..	..	..	..	1,735·00	831·36	..
Do. ..	(1420w)	Slug Hill Bend	..	..	..	..	..	..	28·29	77·50	90·77	..
Do. ..	(1409w)	(Stirling West, late Stirling Extended)	..	..	..	..	..	..	..	125·00	23·40	..
Do. ..	(1409w), 1446w ..	Stirling West leases	..	..	289·00	40·77	..	..	..	389·00	67·96	..
Do. ..	(1608w)	Twilight	..	..	..	..	..	..	..	21·00	3·15	..
Do. ..	(1623w)	Valentine	..	..	23·00	5·51	..	..	..	23·00	5·51	..
Do. ..	(1569w), (1570w)	Waverley leases	..	..	171·50	43·21	..	..	..	241·50	61·35	..
Do. ..	(1510w)	Whitehaven	..	..	..	..	..	..	..	93·00	38·89	..
Do. ..	1586w	Whitehaven Extended	..	..	80·00	72·17	..	..	..	200·00	146·58	..
Do. ..	(1576w)	Whitehaven North	..	..	..	..	..	..	..	36·00	1·99	..
Do. ..	(1575w)	Whitehaven Westralia	..	..	..	..	..	..	..	59·00	31·20	..
Do. ..	..	Voided leases	..	..	..	..	..	..	130·05	13,104·25	5,735·51	..
Do. ..	..	Sundry claims	..	11·57	279·60	547·32	..	84·34	305·80	3,260·10	4,220·41	..
Smithfield ..	..	Voided leases	..	..	..	..	..	..	..	1,027·00	200·90	..
Do. ..	..	Sundry claims	..	23·79	29·50	139·93	..	..	23·79	49·50	149·47	..
		From Goldfield generally :—										
		Sundry parcels treated at :										
		Allsop & Howell's Works—Kalgoorlie	..	..	..	..	..	..	..	..	6·70	271·76
		Braybrook's Cyanide Works	..	..	..	..	..	..	..	..	427·54	..
		Broad Arrow Consols Works	..	..	..	..	..	..	..	..	118·29	..
		Duke Cyanide Works	..	..	..	..	..	..	..	..	5·25	..
		Fremantle Trading Co., Ltd., Works	..	..	..	4·00	..	..	..	..	80·10	..
		New Arrow Proprietary Works	..	..	..	..	..	299·35	..	5,229·08	4,666·06	..
		Northey's Venture Works	..	..	..	151·69	..	..	..	..	393·27	..
		Ora Banda Works	..	..	..	2,657·22	..	..	..	77·00	5,040·75	..
		Oratava Works—Kalgoorlie	..	..	..	..	..	..	..	..	94·89	..
		Paddington Consols Works	..	..	..	92·63	..	..	..	9·75	6,932·37	..
		Paddington Slimes Plant	..	..	..	..	..	..	..	..	789·17	..
		Pole Works	..	..	..	313·87	..	..	..	..	356·07	..
		Regan's Works	..	..	..	..	..	..	..	27·00	348·42	..
		State Battery—Siberia	..	..	..	171·75	..	..	..	..	577·77	..
		Vettersburg Cyanide Works	..	..	..	10·43	..	..	..	..	665·36	..
		Zoroastrian Works	..	..	..	..	..	..	..	116·50	1,082·23	..
		Various Works	..	..	..	..	..	1,971·82	..	11,306·85	12,401·29	7·09
		Reported by Banks and Gold Dealers	36·86	..	..	..	..	7,258·27	..	..	..	..
		Total	**46·53**	**419·46**	**27,262·06**	**12,909·44**	..	**18,622·79**	**3,745·67**	**527,525·49**	**336,310·73**	**517·26**

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

North-East Coolgardie Goldfield.

KANOWNA DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Black Swan	..	Voided leases	..	..	..	..	..	..	..	160·00	141·76	..
Gambier ..	434x, (878x) ..	(Atlas G.Ms., Ltd.)	..	..	..	..	..	..	..	8,007·00	3,378·99	..
Do. ..	434x	(Camelia)	..	..	..	..	..	..	..	242·50	325·82	..
Do. ..	434x	Camelia	..	..	..	..	..	..	3·53	2,415·00	1,103·70	..
Do. ..	..	Voided leases	..	..	..	..	..	..	35·20	2,064·50	1,829·79	·07
Do. ..	..	Sundry claims	..	..	..	..	..	24·70	245·94	858·75	750·42	...
Gindalbie ..	(1267x)	Edith	..	..	..	..	..	..	..	900·50	611·08	..
Do. ..	394x, 396x ..	Kalgoorlie Foundry, Ltd.	..	..	1,661·00	877·81	..	..	..	3,362·00	1,829·23	..
Do. ..	(392x), 394x, 396x, (1048x), (1207x)	(Melton Gold Mining Co., N.L.) ..	..	..	..	..	..	..	..	654·00	485·80	..
Do. ..	(392x), 394x, 396x, (1048x), (1207x)	(Queen Margaret G.M. Co., Ltd.) ..	..	..	..	..	..	..	..	25,540·03	24,642·71	38·31
Do. ..	(392x), 394x, 396x	(South Gippsland leases) ..	..	..	..	..	..	..	..	3,697·00	3,805·05	..
Do. ..	(392x), 394x, 396x, (1048x, 1207x)	(South Gippsland leases) ..	..	..	..	..	..	..	..	1,060·00	1,119·69	..
Do. ..	1174x, 1176x ..	United leases	..	..	134·00	60·08	..	..	..	2,710·50	2,274·44	..
Do. ..	..	Voided leases	..	..	..	..	..	..	19·94	4,519·05	4,027·85	..
Do. ..	..	Sundry claims	..	..	12·00	159·72	..	..	674·82	1,017·75	1,207·80	..
Gordon ..	891x	(Sirdar)	..	..	..	..	..	..	32·60	168·50	1,319·35	..
Do. ..	891x, 1222x, 1223x, (1229x)	Sirdar G.M. Co., Ltd.	..	..	3,850·00	359·06	..	..	..	35,988·00	5,759·77	..
Do. ..	..	Voided leases	..	..	..	..	..	..	205·17	1,570·80	1,074·78	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	54·65	630·50	577·80	..
Kanowna ..	1270x	Andrew Fisher	..	..	..	..	..	..	881·38	1·00	122·06	..
Do. ..	(35x), (64x) ..	Ballarat and Prince Oscar Co., Ltd.	..	..	70·50	30·34	..	3·59	667·72	8,677·50	3,314·32	227·93
Do. ..	(35x), (64x), (345x)	(Ballarat and Prince Oscar Syndicate, Ltd.)	..	..	..	..	..	..	47·79	5,497·00	2,926·09	..
Do. ..	(1283x)	Black Feather	..	2·25	101·00	25·21	..	..	2·25	269·00	104·90	..
Do. ..	(1160x)	Bulong United	..	..	..	..	..	..	355·64	326·00	365·50	..
Do. ..	1062x	Gentle Polly	..	..	89·00	43·19	..	..	23·82	6,884·25	12,453·16	359·00
Do. ..	(1287x)	Golden Cement	..	..	1,607·00	236·12	..	..	..	4,749·00	816·47	..

Do.	..	1288x	Golden Crown	..	10·89	529·00	161·55	..	..	10·89	1,050·00	263·83	..	
Do.	..	(1289x)	Golden Valley	..	..	175·00	32·76	..	..	..	227·00	37·47	..	
Do.	..	1302x	Golden Valley		..	148·00	23·91	..	..	..	148·00	23·91	..	
Do.	..	1256x	Havilah	..	..	..	..	..	..	..	205·00	231·61	..	
Do.	..	1019x	Kanowna	..	..	594·00	314·56	..	..	691·94	6,255·50	8,578·29	..	
Do.	..	1299x	Kanowna Consols	..	..	265·00	39·78	..	..	..	265·00	39·78	..	
Do.	..	1055x	Kintore	..	..	116·00	64·45	..	..	..	1,964·75	2,492·73	..	
Do.	..	18x, 19x.. ..	(Lily Australis G.Ms., Ltd.) ..	..	..	..	..	..	..	..	197·00	119·18	..	
Do.	..	1295x	Louisa	..	6·32	187·00	49·99	..	..	6·32	187·00	49·99	..	
Do.	..	1282x	Luck at Last	..	..	207·00	208·68	..	..	..	427·00	385·19	..	
Do.	..	(1076x)	Madam Melba	..	..	103·00	24·19	..	..	42·13	2,116·50	2,890·40	18·00	
Do.	..	52x	(Marquis of Queensbury: Lake View South G.M. (W.A.), Ltd.)	..	..	..	..	..	..	..	23,579·65	10,136·28	24·33	
Do.	..	52x	Marquis of Queensbury: Lake View South, Ltd.	..	..	591·00	176·32	..	..	..	2,185·25	973·48	..	
Do.	..	52x	(Marquis of Queensbury: Robinson G.Ms., Ltd.)	..	..	..	..	..	..	..	16,478·75	16,213·33	..	
Do.	..	1236x	North Lead	..	..	4,912·00	944·46	..	..	..	4,912·00	944·46	..	
Do.	..	(3x), 14x, 15x, 18x, 19x, (60x), (81x), (938x), 974x, 1035x, 1103x, (1263x)	(North White Feather G.Ms., Ltd.) ..	..	..	..	..	..	..	..	147,974·75	74,343·01	159·19	
Do.	..	14x, 15x, 18x, 19x, 974x, 1035x, 1103x, (1263x), (1276x), 1278x	(North White Feather G.Ms., Ltd) ..	..	..	2,897·00	847·17	..	..	..	37,768·50	10,594·79	..	
Do.	..	12x, 13x, 14x, 15x, 18x, 19x, 72x, 855x, 974x, 1035x, 1103x, (1263x), 1278x	North White Feather G.Ms., Ltd. ..	..	..	9,653·00	4,244·02	..	..	..	9,653·00	4,244·02	..	
Do.	..	1261x	Prince Foote	..	..	..	..	..	..	..	429·00	155·03	..	
Do.	..	1301x	Prince Oscar	..	..	13·00	30·97	..	..	..	13·00	30·97	..	
Do.	..	(1273x)	Sunrise	..	20·89	78·50	66·05	..	..	23·15	321·50	152·47	..	
Do.	..	1300x	Sunset	..	2·27	136·00	34·00	..	..	2·27	136·00	34·00	..	
Do.	..	1232x	(Try Again)	..	..	..	..	..	..	..	1,678·50	471·90	..	
Do.	..	1232x	Try Again: Last Chance G.M. Co., N.L.	..	..	389·00	170·77	..	..	..	457·00	183·61	..	
Do.	..	(1298x)	Try Once Again	..	..	17·00	3·44	..	..	..	17·00	3·44	..	
Do.	..	12x, 13x, 14x, 15x, 855x, (1001x), (1012x), 1103x, (1107x), (1108x), (1109x)	(White Feather Main Reefs, Ltd.) ..	..	..	..	..	..	..	..	123,327·56	82,334·52	1,675·68	
Do.	..	(9x), (10x), 12x, 13x, 72x, (83x), (201x), 855x, (1001x), (1012x), (1108x), (1249x)	(White Feather Main Reefs (1906), Ltd.)	..	..	171·50	103·03	..	..	20·45	24,393·00	9,138·31	..	
Do.	..	(9x), (10x), 72x, (83x), (180x), (200x), (201x), (431x)	(White Feather Reward, Ltd.) ..	..	..	..	..	..	..	..	42,767·75	22,255·23	14·80	
Do.	..	..	Voided leases	..	..	..	..	..	..	1,403·62	107,687·56	52,451·52	..	
Do.	..	..	Sundry claims	..	36·72	280·50	154·31	..	88·57	1,297·08	11,984·56	5,775·59	..	

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

North-East Coolgardie Goldfield—*continued.*

KANOWNA DISTRICT—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Mulgarrie ..	(1293x)	Lady Clara	..	35·71	42·00	42·83	..	..	35·71	42·00	42·83	..
Do. ..	1228x	Lady Pratt	..	..	70·00	12·55	..	..	148·46	301·00	104·41	..
Do. ..	1284x	Moorilla	..	9·62	126·50	63·07	..	..	20·93	335·00	140·81	..
Do. ..	1297x	Valentine	..	3·43	103·00	114·63	..	..	3·43	103·00	114·63	..
Do. ..	..	Voided leases	..	..	..	..	..	..	1,008·10	3,173·00	1,757·79	..
Do. ..	..	Sundry claims	..	..	25·00	13·05	..	..	13·29	667·50	367·24	..
Six-Mile ..	..	Voided leases	..	..	..	..	..	..	1,595·63	559·00	767·72	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	31·44	105·50	83·08	..
		From District generally :—										
		Sundry parcels treated at :										
		Edquist, Truman and Co's. Works	..	..	..	..	..	..	..	..	1,677·87	..
		Golden Valley Works	..	..	..	144·71	..	..	..	..	188·30	..
		Kalgoorlie Foundry Ltd., Works	..	..	..	..	..	..	..	..	235·79	..
		Last Chance Cyanide Works	..	..	..	..	..	..	..	..	1,314·62	..
		Middleton's Cyanide Works	..	..	..	..	..	..	..	..	1,765·01	..
		Morrison's Cyanide Works	..	..	..	..	..	..	..	..	377·07	..
		North White Feather Filter Press Plant	..	..	..	..	..	..	..	..	797·46	..
		Old Cement Works	..	..	..	693·87	..	..	..	52·00	5,118·39	..
		Riedel and Norton's Works	..	..	..	47·94	..	..	..	642·00	1,360·82	..
		Robinson's Cyanide Works	..	..	..	..	..	..	..	..	5,657·98	..
		State Battery Cyanide Works—Kalpini	..	..	..	..	..	..	..	..	95·12	..
		W.A. Slimes Co., Ltd.	..	..	..	..	..	..	..	..	2,420·35	..
		Various Works	..	..	..	..	..	25·01	..	903·10	8,244·57	..
		Total for Leases and Quartz claims	..	128·10	29,353·50	10,618·59	..	141·87	9,605·29	697,660·31	414,548·53	2,517·31
		Cement from Alluvial Claims :—										
		Reported by Owners	..	..	89·00	7·74	..	305·41	867·52	26,376·40	12,715·90	..
		Treated locally (not reported by Owners at) :										
		Kalgoorlie Foundry Ltd., Works	..	..	..	..	..	..	..	50·00	12·75	..
		Old Cement Works	..	..	1,114·00	256·30	..	..	..	9,008·00	3,028·61	..
		Riedel and Norton's Works	..	..	2,167·00	282·46	..	..	..	10,900·00	1,456·29	..
		State Battery—Kalpini	..	..	..	..	..	..	..	260·00	22·69	..
		Various Works	..	..	..	..	..	..	..	77,090·21	54,895·82	..
		Treated outside district (not reported by owners) ..	..	..	..	..	..	..	..	27,804·55	36,711·17	..
		Reported by Banks and Gold Dealers	71·34	..	..	..	..	103,845·09	·86	..	84·69	..
		Total	**71·34**	**128·10**	**32,723·50**	**11,165·09**	..	**104,292·37**	**10,473·67**	**849,149·47**	**523,476·45**	**2,517·31**

KURNALPI DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Jubilee ..	..	Voided leases	..	..	..	..	..	..	145·13	1,821·25	1,408·51	..
Do. ..	..	Sundry claims	..	..	..	..	..	18·87	..	46·00	28·91	..
Kurnalpi ..	378K	Full Tide [redacted]	..	22·74	..	..	..	..	22·74	..	..	..
Do. ..	333K	Kurnalpi King	..	732·96	8·09	243·25	..	..	732·96	8·09	243·25	..
Do. ..	337K	Kurnalpi Wonder	..	373·09	3·68	93·56	..	..	373·09	3·68	93·56	..
Do. ..	420K	Maori	..	..	44·00	19·59	..	..	..	44·00	19·59	..
Do. ..	332K	Turn of the Tide	..	6·83	10·50	30·29	..	..	6·83	10·50	30·29	..
Do. ..	..	Voided leases	..	..	..	..	..	371·18	424·72	2,677·05	1,698·95	6·27
Do. ..	..	Sundry claims	..	32·72	1·00	10·99	..	217·92	76·23	126·00	150·96	..
a bbie ..	(323K)	General Rodeski	..	..	..	..	..	..	..	3·50	841·57	..
Do. ..	(303K)	Hope	..	3·01	..	37·80	..	..	150·71	28·00	1,702·43	..
Do. ..	312K	Mulgabbie Perseverance ..	..	..	3·00	608·51	..	..	..	20·90	2,178·70	4·95
Do. ..	338K	White Elephant	..	..	1·50	81·39	..	..	..	1·50	81·39	..
Do. ..	..	Voided leases	..	..	..	..	..	..	363·98	9·50	967·60	..
Do. ..	..	Sundry claims	..	65·00	..	..	..	6·50	1,430·03	81·00	614·78	..
		From District generally :—										
		Sundry parcels treated at :										
		Glorus Works	..	..	..	..	..	..	..	..	4·76	..
		Various Works	..	..	..	..	..	..	..	56·50	187·39	..
		Reported by Banks and Gold Dealers	129·45	..	..	..	..	11,212·75	19·62	..	..	..
		Total	**129·45**	**1,236·35**	**71·77**	**1,125·38**	..	**11,827·22**	**3,746·04**	**4,937·47**	**10,252·64**	**11·22**

East Coolgardie Goldfield.

EAST COOLGARDIE DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Binduli ..	4483E	New Year's Gift	..	..	55·80	20·67	..	..	..	55·80	20·67	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	120·00	76·93	..
Do. ..	..	Sundry claims	..	..	57·00	18·87	..	..	..	119·00	66·92	..
Boorara ..	3908E, 3910E, 3912E, 4033E, 4045E, 4327E	Golden Ridge G.M. Co., Ltd. ..	..	..	31,457·00	14,718·50	308·79	..	..	151,598·75	92,070·33	308·79

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

Eas Coolgardie Goldfield—*continued.*

EAST COOLGARDIE DISTRICT—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Boorara ..	3908E, 3910E, 3912E, 4033E	(Waterfall leases)	..	..	..	..	..	..	..	2,849·00	2,389·48	..
Do. ..	..	Voided leases	..	..	..	..	..	..	268·28	56,587·63	31,157·14	..
	..	Sundry claims	..	..	..	..	..	·49	2·30	45·00	20·87	..
oulder ..	392E	(Acrobat : Paringa Consolidated Mines, Ltd.)	..	..	..	..	..	..	..	10·25	37·15	..
Do. ..	38E, 71E, 72E, 101E	Associated G.Ms., of W.A., Ltd. ..	..	..	111,032·00	38,810·00	1,034·00	...	8·49	1,213,676·70	810,713·85	27,359·18
Do. ..	49E, 4211E ..	Associated Northern Blocks (W.A.), Ltd.	..	..	18,830·50	19,119·01	..	..	524·18	315,250·92	393,857·87	2,448·20
Do. ..	(682E), 902E, 923E, 986E, (1064E), 1124E, 1196E, 4075E	(Boulder Deep Levels, Ltd.) ..	..	..	..	..	..	..	..	3,043·00	1,778·10	26·71
Do. ..	902E, 923E, 986E, 1124E, 1196E, 4075E	(Boulder Deep Levels (1907), Ltd.)..	..	..	..	..	..	..	..	787·50	210·30	..
Do. ..	281E	(Brookman Bros., Boulder G.M. Co., Ltd.)	..	..	..	..	..	..	..	8,655·00	8,417·00	..
Do. ..	989E	(Brown Hill Central G.Ms., Ltd.) ..	..	..	..	..	..	..	..	2,957·50	2,071·92	..
Do. ..	558E, (1175E), 3961E	Brown Hill Extended, Ltd.	..	..	1,548·84	482·50	..	..	..	32,133·15	43,266·86	..
Do. ..	1163E	Cassidy's North	..	..	..	..	..	..	..	67·00	7·95	..
Do. ..	24E, 888E, 949E	Central and West Boulder G.Ms., Ltd	..	..	4,160·25	1,875·90	..	..	..	45,793·09	26,828·62	..
Do. ..	352E	(Chaffers G.M. Co., Ltd.)	..	..	..	..	..	..	..	4,256·00	1,299·03	161·50
Do. ..	352E, 873E, 4334E,	Chaffers G.M. Co., Ltd.	..	..	126·00	92·63	..	..	..	110,965·00	44,781·61	..
Do. ..	(4307E)	Confidence	..	..	..	..	..	..	8·20	201·00	86·05	..
Do. ..	1621E	(Croesus Proprietary G.M. Co.) ..	..	..	..	..	..	..	..	79·00	45·87	..
Do. ..	13E, 90E, 302E, 989E	Croesus South G.Ms., Ltd.	..	..	5,101·00	1,061·42	..	..	..	63,166·02	24,640·28	..
Do. ..	351E, 1001E, 1002E, 1085E, 1113E, 1219E, 1326E, 1397E	Golden Horseshoe Estates Co., Ltd...	..	..	280,868·00	91,342·51	23,305·63	..	..	2,712,458·00	2,000,293·24	234,574·65
Do. ..	750E	(Golden Link Consolidated G.Ms., Ltd.)	..	..	..	..	..	..	..	10,729·00	6,096·80	..
Do. ..	2325E, 2326E ..	(Golden Link Consolidated G.Ms., Ltd.)	..	..	..	..	..	..	..	1,525·00	733·48	..
Do. ..	750E, 1621E ..	(Golden Links, Ltd.)	..	..	..	..	..	..	..	87,115·02	43,504·60	19·06
Do. ..	(4475E)	Golden Mile Extended	..	..	180·00	20·96	..	..	..	479·00	73·52	..
Do. ..	(1294E)	Golden Pike and Lake View East Mines, Ltd.	..	..	..	..	..	..	..	490·50	131·44	..
Do. ..	873E	(Great Boulder Main Reef, Ltd.) ..	...	..	..	..	..	..	..	143,292·39	119,541·14	761·98
Do. ..	50E	Great Boulder No. 1, Ltd.	..	..	1,063·54	484·55	..	..	..	14,127·56	11,793·81	..
Do. ..	66E	Great Boulder Perseverance G.M. Co., Ltd.	..	..	209,507·00	62,932·23	7,838·88	..	..	1,951,153·23	1,294,901·72	96,084·42

Do. ..	16E, 51E, 61E, 102E, 280E, 1109E, 4366E	Great Boulder Proprietary G.Ms., Ltd.	..	..	193,451·00	134,678·93	19,050·00	..	..	1,978,432·00	2,005,259·95	157,989·64
Do. ..	902E, 1124E ..	(Great Boulder South G.M. Co., Ltd.)	..	..	..	..	..	..	..	437·00	122·11	..
Do. ..	3643E	Hainault G.Ms., Ltd.	..	..	57,924·00	16,745·77	..	..	..	511,801·70	182,899·01	113·30
Do. ..	6E	(Hannan's Block 45, Ltd.)	..	..	..	..	..	..	..	2,343·55	3,226·69	..
Do. ..	131E, 245E, 269E, 743E, 794E, 969E	(Hannan's Central G.Ms., Ltd.) ..	..	..	..	..	..	..	..	6,098·00	3,360·33	..
Do. ..	739E	(Hannan's Croesus G.M. Co., Ltd.) ..	..	..	..	..	..	..	..	4,256·75	4,416·90	..
Do. ..	(1294E)	(Hannan's Golden Pike G.M., Ltd.) ..	..	..	..	..	..	..	..	25·00	15·15	..
Do. ..	1004E	(Hannan's North Croesus G.M. Co., Ltd.)	..	..	..	..	..	..	..	50·00	13·21	..
Do. ..	15E, 60E, 902E, 923E, 986E, 1116E, 1124E, 1196E, 4075E	(Hannan's Star Consolidated) ..	..	..	..	..	..	..	..	360·00	175·59	..
Do. ..	15E, 60E, 1116E	(Hannan's Star G.M. Co., Ltd.) ..	..	..	..	..	..	..	..	85,652·75	40,438·85	2,142·59
Do. ..	15E, 60E, 1116E	(Hannan's Star, Ltd.)	..	..	..	..	..	..	..	13,470·50	4,716·66	191·22
Do. ..	4317E, 4318E, 4442E	Idaho leases	..	676·59	3,400·00	3,536·87	..	..	1,912·11	15,027·77	14,851·95	..
Do. ..	946E, 4370E ..	Ironsides North leases	..	..	2,939·00	6,126·81	..	..	..	22,481·50	26,234·69	..
Do. ..	946E	(Ironsides North G.M. Co., N.L.) ..	..	..	..	..	..	..	..	1,348·00	807·48	..
Do. ..	31E, 1357E, 1413E, 1507E, 4399E, 4445E, 4476E	Ivanhoe Gold Corporation, Ltd. ..	..	..	211,844·00	110,452·47	23,390·97	..	..	2,327,382·00	1,689,753·39	234,568·41
Do. ..	1507E, (2899E), (3712E), (3713E)	(Ivanhoe Junction G.M. Co., N.L.)..	..	..	..	..	..	..	..	1,764·00	121·43	..
Do. ..	6E, 131E, 245E, 269E, 301E, 739E, 743E, 794E, 969E	(Kalgoorlie Amalgamated, Ltd.) ..	..	..	..	..	..	..	..	32,589·00	8,859·95	..
Do. ..	6E, 131E, 245E, 269E, 301E, 739E, 743E, 794E, 969E	(Kalgoorlie Amalgamated (new) Ltd.)	..	..	..	..	..	..	..	27,145·00	6,265·27	..
Do. ..	6E, 131E, 245E, 269E, 301E, 739E, 743E, 794E, 969E	(Kalgoorlie Amalgamated (1909) Ltd.)	..	..	..	..	..	..	..	7,940·50	1,568·40	..
Do. ..	33E	(Kalgoorlie Bank of England G.M. Co., Ltd.)	..	..	..	..	..	..	..	11,775·50	7,080·49	..
D . ..	73E, (74E) ..	(Kalgoorlie Mint and Iron King Gold Estates, (Ltd.)	..	..	..	..	..	..	..	3,020·00	1,762·00	..
Do. ..	73E, (74E) ..	(Kalgoorlie Mint and Iron King G.Ms., Ltd.)	..	..	..	..	..	..	..	3,647·00	7,454·80	..
Do. ..	1004E	(Kalgurli Golden Eagle) ..	..	..	..	..	..	..	..	4,891·50	1,289·65	..
Do. ..	1004E	(Kalgurli Golden Eagle : Golden Links, Ltd.)	..	..	..	..	..	..	..	193·00	31·63	..
Do. ..	22E, 34E ..	Kalgurli G.Ms., Ltd.	..	..	111,092·00	58,444·63	..	..	..	1,022,606·98	753,087·68	..
Do. ..	15E, 25E, 32E, 60E, 902E, 923E, 986E, 1116E, 1124E, 1196E, 2325E, 2326E, 4075E, 4432E, 4433E, 4434E	Lake View and Star, Ltd.	..	..	188,399·98	63,980·06	7,905·10	..	..	410,901·71	145,603·20	17,791·74
Do. ..	25E, 32E, 2325E, 2326E	(Lake View Consols, Ltd.)	..	..	..	..	..	..	..	1,179,303·55	1,016,875·27	38,491·89
Do. ..	75E	(Lake View South G.M. (W.A.), Ltd.)	..	..	..	..	..	..	..	10,712·98	11,393·57	..
Do. ..	75E	Lake View South, Ltd.	..	..	3,922·00	908·80	..	..	..	12,891·90	3,297·71	..
Do. ..	4439E	Lake View Extended	..	..	157·00	61·85	..	..	..	425·50	135·84	..

East Coolgardie Goldfield—*continued.*

EAST COOLGARDIE DISTRICT—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Boulder ..	(4393E)	Medindie Hill	..	..	867·00	164·26	..	..	..	2,070·00	530·83	..
Do. ..	4487E	Medindie Hill	..	..	176·00	22·86	..	..	..	176·00	22·86	..
Do. ..	33E, 35E, 975E ..	New North Boulder G.Ms., Ltd. ..	..	..	3,968·08	2,262·46	..	..	..	8,459·12	7,928·08	..
Do ..	33E, 35E, 975E ..	(North Boulder G.M. Co., Ltd.) ..	..	..	..	..	..	..	..	33,549·15	47,532·52	..
Do. ..	33E, 35E, 975E ..	(North Boulder G.Ms., Ltd.) ..	..	..	..	..	..	..	..	4,542·50	4,256·55	·63
Do. ..	281E, 287E, 444E	North Kalgurli Co., Ltd.	..	..	9,799·92	4,702·04	55·24	43·99	..	100,137·62	58,234·36	7,202·47
Do. ..	535E	(Octagon Explorers, Ltd.)	..	..	..	..	..	..	..	3,180·00	1,069·29	..
Do. ..	73E, 410E, 448E, 532E, 578E, 698E, 944E, 1395E, (3031E), (4180E)	(Oroya Brownhill Co., Ltd.)	..	..	..	..	..	..	..	1,075,862·55	1,163,881·77	61,682·30
Do. ..	4211E	(Oroya East (Hannan's) G.M., Ltd.)	..	..	..	..	..	..	..	625·00	288·39	..
Do. ..	6E, 73E, 131E, 245E, 269E, 301E, 410E, 448E, 532E, 578E, 698E, 739E, 743E, 750E, 794E, 944E, 969E, 1004E, 1395E, 1621E, (3031E), (4180E)	Oroya Links, Ltd.	..	..	124,424·37	40,953·10	3,054·93	..	..	331,267·44	114,378·09	11,577·15
Do. ..	4E, 392E ..	(Paringa Mines, Ltd.)	..	..	..	..	..	..	..	37,962·98	16,779·96	..
Do. ..	4E, 392E ..	Paringa Mines (1909), Ltd.	..	..	5,775·23	5,446·63	..	..	..	26,890·74	12,599·54	..
Do. ..	1208E, 3612E ..	South Kalgurli G.Ms., Ltd.	..	..	100,228·00	32,676·07	3,079·87	..	..	783,790·00	334,501·86	16,945·21
Do. ..	(3031E)	(Trafalgar G.M. (W.A.), Ltd.) ..	..	..	..	..	..	..	..	189·95	56·84	..
Do. ..	535E	(Union Jack)	..	..	..	..	..	..	..	23·00	4·49	..
Do. ..	535E	Union Jack: Union Jack G.M. Co., N.L.	..	..	286·00	192·12	..	..	..	865·78	330·16	..
Do, ..	..	Voided leases	..	..	..	..	..	109·90	5,772·66	57,045·75	39,166·29	..
Do. ..	..	Sundry claims	..	..	54·75	5·68	..	24·58	..	1,126·75	914·74	..
Feysville ..	Block 48 ..	Hampton Plains Estate, Ltd. ..	..	..	..	..	..	4,565·62	..	20,583·40	2,413·76	..
Do. ..	Block 50 ..	(Hampton Plains Estate (1906) Ltd.)	..	..	..	..	..	..	..	85·00	108·82	..
Do. ..	Block 50 ..	(Hampton Properties, Ltd.)	..	..	..	..	..	..	7·26	6,348·00	3,956·22	..
Do. ..	Block 45 ..	Hampton Properties, Ltd.	..	..	..	..	..	..	52·75	51·75	76·63	..
Do. ..	Block 50 ..	Hampton Properties, Ltd.	..	..	4·20	7·60	..	..	6·26	353·85	357·25	..
Do. ..	..	Voided leases	..	..	..	..	..	..	22·86	214·85	106·88	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	134·00	42·81	..
Kalgoorlie ..	796E, 1228E ..	(Bonnie Lass leases)	..	..	..	..	..	..	160·69	6,011·00	5,945·22	..
Do. ..	796, 1228E, 3771E	Bonnie Lass leases ..	..	..	2,900·00	916·27	..	..	..	4,360·00	3,132·34	..
Do. ..	4088E	Bonnie Play	..	..	14·00	3·25	..	..	..	35·00	7·48	..
Do. ..	(3880E), (4146E)	(Devon Consols leases)	..	..	..	..	..	..	36·73	26,777·00	11,650·19	..
Do. ..	4037E, 4039E, 4054E	(Devon Consols South Extended leases)	..	..	..	..	..	..	..	2,251·00	1,400·94	..

Do. ..	4037E, 4039E, 4054E, 4231E, 4368E	(Devon Consols South Extended leases)	..	..	506·00	114·52	..	..	..	8,269·14	2,712·76	..	
Do. ..	3770E	Eagle Hawk United	..	59·03	47·56	15·13	..	109·01	812·10	4,161·56	3,180·60	..	
Do. ..	4509E	Enterprise	..	..	219·00	76·49	..	..	..	219·00	76·49	..	
Do. ..	4052E, 4063E, (4319E)	Fair Play leases	..	..	251·80	120·43	..	..	4·77	2,590·34	3,838·88	..	
Do. ..	4331E	(Gem)	..	..	..	..	..	..	30·75	57·00	10·40	..	
Do. ..	1694E	(Golden Zone)	..	..	..	..	..	..	..	5,614·50	2,639·52	..	
Do. ..	1694E	(Golden Zone)	..	..	..	..	..	..	489·50	2,106·00	3,295·08	..	
Do. ..	1694E, 4273E, 4274E, 4331E, (4380E)	Golden Zone leases	..	..	5,415·00	7,398·68	..	..	28·25	34,296·00	45,983·91	..	
Do. ..	4412E	(Gordon)	..	..	30·00	7·95	..	..	..	629·00	84·79	..	
Do. ..	4412E	Gordon: Cunard G.M. Co., N.L. ..	..	..	3,690·00	269·92	..	..	..	3,690·00	269·92	..	
Do. ..	14CE, 415E, 1163E,	Hannan's Consols leases ..	2·84	188·04	4,470·00	700·39	..	2·84	188·04	45,009·00	5,603·12	..	
Do. ..	14CE, 415E, 1163E,	(Hannan's Consols, Ltd.)	..	..	..	..	..	..	..	6,584·00	3,806·65	..	
Do. ..	(4470E)	(Hannan's Find)	..	..	..	..	..	..	..	140·00	27·38	..	
Do. ..	(4470E, 4471E)..	Hannan's Find leases	..	..	867·00	153·15	..	..	..	1,132·00	196·45	..	
Do. ..	983E	(Hannan's Golden Group, Ltd.) ..	..	..	..	..	..	..	..	6·00	17·27	..	
Do. ..	4273E, 4274E ..	(Hannan's North G.Ms., Ltd.) ..	..	..	..	..	..	..	..	1,244·00	392·72	..	
Do. ..	97E, 160E, 211E, 212E, 213E, 1653E	(Hannan's Reward and Mount Charlotte, Ltd.)	..	..	..	..	..	..	2·58	121,605·10	47,203·84	..	
Do. ..	97E, 160E, 211 E, 212E, 213E, 1653E	Hannan's Reward, Ltd.	..	..	30,111·00	3,879·56	..	..	..	154,049·50	21,044·35	..	
Do. ..	796E, 1228E ..	(Hannan's Reward North G.M. Co., N.L.)	..	..	..	..	..	..	16·87	334·00	247·34	..	
Do. ..	4001E, 4035E, 4036E	Hidden Secret leases	..	..	1,044·40	294·10	..	..	..	8,814·07	14,278·06	43,383·29	
Do. ..	(3991E)	Hird's lease	..	..	59·22	11·40	..	..	42·85	1,152·47	1,174·78	..	
Do. ..	4406E	Hyman	..	..	..	..	..	..	..	80·00	3·44	..	
Do. ..	4502E	Ineeda	..	..	249·00	46·59	..	..	..	249·00	46·59	..	
Do. ..	983E	Isabel	..	9·81	114·44	74·56	..	..	108·44	5,264·26	1,293·00	..	
Do. ..	4346E	(Little Wonder)	..	..	..	..	..	..	..	3,796·00	1,530·61	..	
Do. ..	4346E, 4347E ..	Little Wonder leases	..	..	2,088·00	992·25	..	..	..	2,698·00	1,022·89	..	
Do. ..	4345E	(Lone Hand)	..	..	..	..	..	..	..	6,092·00	408·02	..	
Do. ..	4345E, 4459E, 4461E	Lone Hand leases	..	..	1,610·00	1,059·22	..	..	..	1,610·00	1,059·22	..	
Do. ..	4477E	Lord Nelson	..	65·75	950·67	234·00	..	..	65·75	1,034·67	293·41	..	
Do. ..	(4464E)	Lucknow	..	..	..	..	..	..	..	31·00	3·91	..	
Do. ..	2E, 279E ..	(Maritana G.M. Co., N.L.)	..	..	..	..	..	..	32·27	11,373·50	4,628·55	..	
Do. ..	2E, 279E ..	Maritana leases	24·19	113·53	829·48	807·26	..	24·19	193·27	11,799·48	2,661·77	..	
Do. ..	4293E	(Milanese)	..	..	..	..	..	..	..	7,663·00	1,389·36	..	
Do. ..	4293E	Milanese: Golden Dream G.M. Co., N.L.	..	..	13,082·00	1,197·70	..	..	..	22,817·00	2,517·12	..	
Do. ..	4347E	(Mystery)	..	..	..	..	..	..	..	8,783·00	1,815·12	..	
Do. ..	4025E	Napoleon	..	..	157·00	68·05	..	..	..	2,878·00	1,499·30	..	
Do. ..	1694E	(New Golden Zone Co., N.L.).. ..	..	..	..	..	..	..	..	344·00	175·61	..	
Do. ..	983E	(New Standard Exploration Co., Ltd.)	..	..	..	..	..	..	..	213·00	86·76	..	
Do. ..	4482E	North Collier	..	..	175·01	1,382·66	..	..	..	175·01	1,382·66	..	
Do. ..	4037E, 4039E, 4054E	(North End Mines, Ltd.)	..	..	..	..	..	..	..	5,876·00	2,425·03	4·00	
Do. ..	4485E	North End Extended	..	..	145·00	42·00	..	..	..	145·00	42·00	..	
Do. ..	4037, 4039E, 4054E	(North End Mines, Ltd.)	..	..	..	..	..	..	..	1,812·00	833·27	..	
Do. ..	(4277E)	Off Chance	..	..	..	..	..	..	98·80	1,751·75	280·63	..	
Do. ..	4E..	(Paringa Consolidated Mines, Ltd.) ..	..	..	..	..	..	..	..	216·00	157·80	..	
Do. ..	1228E	(Red White and Blue)	..	..	..	..	..	..	..	130·00	25·56	..	
Do. ..	4039E	(Rising Sun)	..	..	..	..	..	..	..	170·00	28·50	..	
Do. ..	4039E	(Rising Sun)	..	..	..	..	..	..	..	16·00	1·88	..	

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

East Coolgardie Goldfield—*continued.*

EAST COOLGARDIE DISTRICT—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs	Fine ozs.	Fine ozs.
Kalgoorlie ..	4037E, 4039E .. 4054E, 4231E	(Rising Sun leases)	..	..	..	..	..	..	..	294·00	98·78	..
Do. ..	4468E	Sir John	..	..	824·00	37·29	..	..	..	916·00	44·12	..
Do. ..	3771E	(Sons of Gwalia, Kalgoorlie) ..	..	..	..	..	..	..	..	1,428·00	844·54	..
Do. ..	4429E	Territoria	..	..	304·13	45·09	..	..	..	714·13	145·36	..
Do. ..	4289E	(Union Club)	..	..	..	..	..	..	..	700·00	257·45	..
Do. ..	4289E	Union Club	61·09	..	634·00	353·65	..	61·09	..	1,008·00	503·48	..
Do. ..	4289E, 4320E ..	(Union Club leases)	..	..	..	..	..	..	53·28	4,626·00	1,437·28	..
Do. ..	(3880E), (4146E)	Westralia Machinery Corporation, Ltd.	..	..	..	..	..	..	..	2,904·00	863·11	..
Do. ..	4037E, 4039E, 4054E, 4231E, 4368E	Westralia United Goldfields, Ltd. ..	..	..	584·21	196·51	..	..	..	584·21	196·51	..
Do. ..	4499E	Williamstown	..	..	82·18	36·92	..	..	..	82·18	36·92	..
Do. ..	4496E	Zelma	..	..	53·75	23·42	..	..	..	53·75	23·42	..
Do. ..	..	Voided leases	..	..	..	..	..	45·35	775·17	171,932·85	72,043·62	586·64
Do. ..	..	Sundry claims	..	46·21	3,116·62	807·75	..	207·69	153·47	8,830·04	1,935·08	..
Wombola ..	4349E	Sudden Jerk	..	..	..	..	..	..	301·49	..	..	..
Do. ..	..	Voided leases	..	..	..	..	..	..	312·37	4,708·78	1,882·55	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	469·13	97·16	..
		From District generally :— Sundry claims	..	..	..	..	..	10,907·93	431·95	5,208·00	1,560·12	..
	Sundry parcels treated at :											
	Adeline Slimes Works		..	..	..	6,092·99	..	42·64	35·12	25·00	19,033·35	..
	Allsop and Don's Works		..	..	..	191·01	96·45	..	..	..	264·88	188·96
	Allsop and Howell's Works		..	..	..	..	..	..	..	..	89·63	231·72
	Associated Northern Works		..	..	..	6·13	..	..	..	..	69·81	..
	Barne's Works		..	..	..	..	..	..	..	..	1,522·50	..
	Bonnie Lass Works		..	..	..	..	..	..	..	55·00	1,297·73	..
	Boulder Puddling Works		..	..	..	..	..	2·54	..	..	72·89	..
	Brown Hill Consols Works		..	..	10·50	4,748·05	..	..	..	683·85	33,754,81	..
	Croesus South Works		..	..	..	..	..	..	..	9,230·35	13,912·25	..
	Fremantle Trading Co's. Works		..	..	..	682·71	1,125·02	..	..	..	2,041·37	2,306·20
	Glenartney Works		..	..	..	..	..	..	..	..	830·97	..
	Golden Dream Works		..	..	..	..	..	..	..	..	85·87	..
	Golden Zone Works		..	..	..	..	..	..	..	..	340·97	..
	Hannan's Central Lakeside Works		..	..	..	1,311·40	..	..	..	..	4,585·19	..
	Hannan's Central Works		..	..	35·00	3,654·58	..	..	..	135·00	30,082·80	..
	Ironsides North Works		..	..	50·00	1,186·45	..	..	..	73·00	8,827·06	..
	Kalgoorlie Gold Recovery Works		..	..	..	1,988·36	202·37	..	..	..	2,061·64	202·37
	Leviathan Tailings lease : Barnett's Works		..	..	..	112·03	..	..	..	..	208·58	..
	Oratava Works		..	..	..	..	..	..	..	..	1,458·29	..
	Whitehart Works		..	..	..	..	..	..	..	..	24·39	..
	Various Works		..	..	..	..	..	339·18	15·15	29,452·55	43,397·55	403·37
	Reported by Banks and Gold Dealers		432·76	..	..	..	..	9,616·15	9,013·32	..	4·57	..
	Total		**520·88**	**1,158·96**	**1,757,419·43**	**753,688·72**	**90,447·25**	**26,103·19**	**21,988·33**	**17,910,564·00**	**13,161,391·48**	**957,747·60**

BULONG DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Balagundi ..	(1084Y)	Adelaide Enterprise	..	..	18·68	6·82	..	..	..	18·68	6·82	..
Do. ..	1080Y	Balagundi	..	329·48	10·00	84·70	..	..	329·48	10·00	84·70	..
Do. ..	..	Voided leases	..	..	..	..	..	..	1,815·53	1,061·00	1,240·40	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	3·97	138·65	74·42	..
Bulong ..	(1078Y)	Daisy	..	..	..	..	..	..	..	24·00	5·72	..
Do. ..	(1074Y)	Gorge	..	..	..	..	..	..	75·63	5·30	53·78	..
Do. ..	1067Y, 1076Y ..	Southern Cross leases	..	..	5,617·00	758·75	..	..	..	14,419·66	2,073·82	..
Do. ..	(1077Y)	Trump	..	..	..	..	..	..	..	14·00	11·28	..
Do. ..	..	Voided leases	..	..	..	..	..	107·54	8,288·59	84,660·26	80,205·35	..
Do. ..	..	Sundry claims	..	..	66·90	142·69	..	1,648·60	911·09	6,631·42	14,276·00	..
Hogan's Find	..	Voided leases	..	..	..	..	..	..	908·82	309·50	276·51	..
Majestic ..	..	Voided leases	..	..	..	..	..	..	..	1,001·25	318·78	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	43·20	..	..	..
Mt. Monger ..	..	Voided leases	..	..	..	..	..	..	1,862·57	1,121·35	969·69	..
Do. ..	..	Sundry claims	..	..	..	..	..	215·60	..	357·80	220·18	..
Randalls ..	1079Y	Cornstock, W.A.	..	..	87·24	31·91	..	..	..	143·24	61·53	..
Do. ..	(805Y), (892Y), (990Y)	New Santa Claus G.M. Co., Ltd. ..	..	..	..	..	..	..	..	7,342·80	3,827·39	..
Do. ..	(805Y), (892Y) ..	(Santa Claus G.M. Co., Ltd.) ..	..	..	..	..	..	..	..	50·00	41·29	..
Do. ..	..	Voided leases	..	..	..	..	..	..	60·04	4,060·30	1,723·48	..
Do. ..	..	Sundry claims	..	..	30·00	8·08	..	20·45	..	1,646·55	429·65	..
Sudden Jerk ..	..	Voided leases	..	..	..	..	..	..	63·91	14·25	53·67	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	·15	10·23	..
Taurus ..	..	Voided leases	..	..	..	..	..	2·06	3·70	1,678·15	760·83	..
Do. ..	..	Sundry claims	..	..	16·00	64·15	..	112·69	..	276·00	411·01	..
Woodline ..	.	Voided leases	..	..	..	..	..	..	..	792·75	610·57	..
Do. ..	.	Sundry claims	..	..	..	..	..	..	..	39·33	61·57	..
		From District generally :—										
		Sundry claims	..	..	..	..	..	5·64	41·85	790·75	284·26	..
		Sundry parcels treated at :										
		Hilda Mill	..	..	..	..	..	..	..	..	150·78	..
		State Battery, Randall's	..	..	..	..	..	..	..	..	131·73	..
		Various Works	..	..	..	..	..	..	..	6,102·15	5,565·74	..
		Reported by Banks and Gold Dealers	..	..	..	...	..	24,387·42	52·39	..	..	..
		Total	..	329·48	5,845·82	1,097·10	..	26,500·00	14,460·77	132,709·29	113,941·18	..

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

Coolgardie Goldfield.

COOLGARDIE DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Bonnievale ..	4433	Lorna	..	..	235·75	153·40	..	..	..	235·75	153·40	..
Do. ..	1552	(New Victoria)	..	..	..	..	..	..	..	264·00	169·00	..
Do. ..	1552, 4313 ..	New Victoria leases	..	..	1,278·00	736·38	..	..	..	1,404·00	838·93	..
Do. ..	4313	(New Victoria South)	..	..	..	..	..	..	..	1,065·00	324·87	..
Do. ..	1552, (3947), (4353)	(Vale of Coolgardie G.M., Ltd.) ..						..	..	74,835·00	38,993·49	..
Do. ..	..	Voided leases	..	..	..	..	..	..	2·26	270,459·85	145,666·92	..
Do. ..	..	Sundry claims	..	..	202·00	136·10	..	..	..	976·50	504·20	..
Bulla Bulling	(4403)	Golden Gate	..	..	30·50	6·75	..	..	..	137·13	58·50	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	426·50	281·51	..
Do. ..	..	Sundry claims	..	..	9·10	·94	..	..	12·82	314·60	182·17	..
Burbanks ..	134, 135, 136, 1527, (1705), 2761, 3571, 3661, (3806), (3996), (4025), (4032)	(Burbanks Birthday Gift G.M., Ltd.)	..	..	..	..	..	..	..	132,706·00	126,351·59	..
Do. ..	134, 135, 136, 1527, (1705), 2761, 3571, 3661, (3806), (3996), (4025), (4032)	(Burbanks Birthday G.M., Ltd.) ..	..	..	..	..	..	..	..	36,677·20	25,186·99	334·85
Do. ..	134, 135, 136, 1527, 2761, 3571, 3661	Burbanks Birthday G.Ms., Ltd. ..	..	..	14,224·95	10,409·71	..	..	..	16,474·08	11,887·40	89·38
Do. ..	2985, 2986, 3444, 3870, 4059	(Burbanks Main Lode, Ltd.) ..	..	..	..	..	..	..	..	3,209·00	1,671·63	..
Do. ..	2985, 2986, 3444, 3870, 4059	(Burbanks Main Lode (1902), Ltd.) ..	..	..	..	..	..	..	..	4,824·00	3,214·50	..
Do. ..	2985, 2986, 3444, 3870, 4059	(Burbanks Main Lode (1904), Ltd.) ..	..	..	..	..	..	..	..	76,844·10	44,924·94	..
Do. ..	(1705), 2985, 2986, 3444, 3870, 4059, 4446, 4447	Burbanks Main Lode (1904), Ltd. ..	..	..	19,130·00	11,558·24	..	..	..	32,446·00	19,716·53	..
Do. ..	4409	Burbanks Mainstay	..	..	..	..	..	..	..	609·00	165·62	..
Burbanks ..	(1705)	(Burbanks North G.M., Ltd.) ..	..	..	..	..	..	..	..	22·50	7·70	..
Do. ..	(4429)	Coronation	..	..	103·00	60·40	..	..	..	301·00	168·63	..
Do. ..	4168	Glenloth South	..	..	93·00	214·76	.	..	79·67	635·50	990·55	..

Do.	..	4379	Ivanhoe Burbanks	..	..	378·50	279·45	..	..	..	776·50	553·32	..
Do.	..	2160	(Lady Robinson)	..	..	..	..	..	..	..	5,315·40	3,327·12	..
Do.	..	2160, (3950), (4125)	(Lady Robinson G.M. Co., N.L.) ..	..	..	..	..	..	..	..	16,823·50	7,797·88	..
Do.	..	2160	Lady Robinson: Lady Robinson G.M. Co., N.L.	..	..	1,505·00	464·82	..	..	..	1,835·00	562·98	..
Do.	..	(4241)	Lord Bobs	..	..	..	..	..	..	..	1,264·00	2,829·90	..
Do.	..	(4241), (4286), (4287)	(Lord Bobs G.M. Syndicate)	..	..	..	..	..	..	..	1,744·00	2,151·90	..
Do.	..	(4241)	Lord Bobs: Lord Bobs G.M. Syndicate	..	..	..	..	..	..	..	486·00	936·84	..
Do.	..	4436	Lord Bobs	..	..	560·00	515·95	13·10	..	..	560·00	515·95	13·10
Do.	..	..	Voided leases	..	..	..	..	..	13·36	105·24	22,138·63	15,617·74	80·73
Do.	..	..	Sundry claims	43·37	..	215·00	109·52	..	43·37	56·60	2,482·50	1,600·98	..
Coolgardie	..	133, 139, (142) ..	(Bayley's G.Ms., Ltd.)	..	..	..	..	..	882·14	89·41	76,402·97	99,179·62	..
Do.	..	133, 139, (142) ..	(Bayley's leases)	..	..	803·75	2,013·62	..	7·18	171·21	7,820·80	8,904·15	..
Do.	..	133, 139, (142) ..	(Bayley's Mines, Ltd.)	..	..	..	..	..	15·10	10·59	2,319·74	2,323·66	..
Do.	..	4444	Benjamin George	..	6·44	116·00	397·95	..	..	6·44	116·00	397·95	..
Do.	..	(4067)	(Clydesdale)	..	..	..	..	..	..	..	9·00	24·48	..
Do.	..	4421	Columbia Park	..	..	6·00	21·13	..	..	9·00	6·00	21·13	..
Do.	..	1865	Empress of Coolgardie ..	..	..	122·50	40·52	..	..	..	2,021·50	795·03	..
Do.	..	1865	(Empress of Coolgardie G.M. (1896), Ltd.)	..	..	..	..	..	..	..	2,868·00	950·53	..
Do.	..	1865	(Empress of Coolgardie: Phœnix G.Ms., Ltd.)	..	..	..	..	..	..	..	12,028·50	4,524·96	..
Do.	..	4431	Good Luck	..	14·18	139·60	37·08	..	..	14·18	178·60	47·18	..
Do.	..	(73), (1902), (3556), (3701), (3811), (3813), (3998)	Griffiths leases	..	..	..	..	..	..	..	35,381·00	14,433·46	..
Do.	..	Block 53 ..	Hampton Plains Estate, Ltd. ..	..	..	..	..	..	..	358·42	67·00	112·49	..
Do.	..	Block 59 ..	Hampton Plains Estate, Ltd. ..	..	..	266·00	167·81	..	..	..	6,435·00	5,899·82	..
Do.	..	4122	(King's Cross)	..	..	..	..	..	..	..	792·00	561·39	..
Do.	..	(4297)	King Solomon	..	..	56·00	9·62	..	..	10·45	1,140·50	775·81	..
Do.	..	4443	King Solomon	..	..	25·00	10·51	..	..	..	25·00	10·51	..
Do.	..	(3556)	(Lily)	..	..	..	..	..	..	..	342·75	217·64	..
Do.	..	4411	May Queen	..	..	140·00	78·73	..	..	..	363·50	249·32	..
Do.	..	(3701)	(Morning Star South)	..	..	..	..	..	..	..	250·00	30·63	..
Do.	..	133, 139 (4067) 4122, 4372,	New Bayley's Mines, Ltd.	..	..	12·50	101·14	..	..	..	129·50	166·99	..
Do.	..	4439	Proprietary	..	..	48·50	38·09	..	..	..	48·50	38·09	..
Do.	..	4935	Prosperity	..	16·21	157·50	87·31	..	..	16·21	157·50	87·31	..
Do.	..	(4427)	Redeemer	..	..	34·00	9·06	..	..	..	34·00	9·06	..
Do.	..	(4295), (4319) ..	(Richmond G.M. Syndicate)	..	..	..	..	..	..	154·82	457·00	607·40	..
Do.	..	(4295), (4319) ..	(Richmond leases)	..	..	..	..	..	..	..	144·00	171·95	..
Do.	..	(4295)	Richmond: Richmond G.M. Syndicate	..	..	13·00	7·19	..	..	..	93·00	40·90	..
Do.	..	(73)	(Star of the South)	..	..	..	..	..	..	..	975·00	819·75	..
Do.	..	33, 3824, 3830, 4227, 4323, 4326	Tindal's Coolgardie G.M. Co., N.L. ..	..	..	5,484·00	1,575·74	..	..	..	126,764·25	31,962·56	..
Do.	..	(4407)	Union Jack South	..	..	..	..	..	..	..	22·50	69·79	..
Do.	..	4445	Union Jack South	..	150·66	30·50	109·98	..	..	150·66	30·50	109·98	..
Do.	..	4260	W.A. Mint	..	1·45	69·00	57·01	..	..	53·03	717·00	289·93	..
Do.	..	(4067), 4122 ..	(W.A. Sluicing Syndicate, Ltd.) ..	..	..	..	..	..	..	..	742·00	373·22	..
Do.	..	4368	Waterfall Prospecting Syndicate	..	..	209·32	120·29	..	..	..	841·82	1,596·19	..
Do.	..	..	Voided leases	..	..	..	..	..	392·08	2,602·29	232,615·70	135,358·01	·96
Do.	..	..	Sundry claims	2·46	79·57	1,857·40	1,134·61	..	44·60	828·18	15,672·35	7,801·84	..

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

Coolgardie Goldfield—*continued.*

COOLGARDIE DISTRICT—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Eundynie ..	4253	(Hidden Secret North)	..	..	..	..	..	..	..	68·00	60·72	..
Do. ..	4253, 4266, 4351, (4405), (4406)	Hidden Secret North leases ..	..	..	5,513·00	2,825·50	..	..	..	15,844·00	7,685·92	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	1,473·50	644·31	1·75
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	117·00	31·11	..
Gibraltar ..	4418	Reform	..	..	22·00	12·61	..	..	..	22·00	12·61	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	227·50	70·20	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	41·50	18·33	..
Gnarlbine ..	(4401)	Baroota Wonder Extended ..	..	..	..	..	..	..	..	47·00	11·96	..
Do. ..	(4400), (4401) ..	(Baroota Wonder leases) ..	..	..	..	..	..	..	..	135·00	15·76	..
Do. ..	..	Voided leases	..	..	..	..	..	..	10·94	1,717·75	1,022·18	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	1·31	108·00	57·62	..
Higginsville ..	4184, (4185), (4191), (4206), (4207)	(Red Hill Westralia G.Ms., Ltd. ..	..	..	..	..	..	..	..	16,983·00	6,848·02	127·78
Do. ..	4184..	(Sons of Erin: Forwood, Down & Co., Ltd.)	..	..	44·00	169·97	..	..	..	117·00	1,000·35	...
Do. ..	(4185), 4184 ..	(Sons of Erin G.M. Co., N.L.) ..	..	..	..	..	..	..	285·20	4,742·00	2,938·77	..
Do. ..	4184, (4185), (4191), (4206), (4207)	(Sons of Erin Leases)	..	..	..	..	..	..	..	1,394·00	911·95	..
Do. ..	4184, 4428 ..	Sons of Erin leases: Forwood, Down & Co., Ltd.	..	..	230·00	124·42	..	..	..	230·00	124·42	..
Do. ..	..	Voided leases	..	..	..	..	..	..	2·06	5,274·00	1,0.0·45	..
Do. ..	..	Sundry claims	..	..	38·00	9·10	..	..	16·52	541·50	405·18	..
Londonderry	3834 ..	Cheapside	..	..	500·00	283·80	..	..	..	3,871·25	2,214·19	..
Do. ..	..	Voided leases	..	..	..	..	..	..	46·25	14,498·66	13,130·68	..
Do. ..	..	Sundry claims	..	1·06	48·50	141·67	..	..	1·06	709·35	490·88	..
Mungari ..	..	Voided leases	..	..	..	..	..	..	17·71	735·00	331·78	..
Do. ..	..	Sundry claims	..	..	40·66	17·80	..	..	..	219·91	79·70	..
Red Hill ..	..	Voided leases	..	..	..	..	..	..	1,439·42	40,793·20	31,064·05	..
Do. ..	..	Sundry claims	..	2·58	5·50	38·81	..	..	27·18	115·80	50·99	..
Widgiemooltha	(4440)	Dingo	..	26·84	29·00	55·96	..	..	26·84	29·00	55·96	..

Do. ..	4028	Flinders	..	..	24·00	104·10	..	..	29·11	383·10	2,029·92	..
Do. ..	3906	(Yorkshire Lass)	..	..	..	..	..	..	..	1,783·70	1,180·97	..
Do. ..	3906, 4426 ..	Yorkshire Lass leases	..	..	258·50	124·45	..	..	..	258·50	124·45	..
Do. ..	..	Voided leases	..	..	..	..	..	..	439·18	6,538·40	2,225·18	·17
Do. ..	..	Sundry claims	..	3·47	59·50	19·10	..	3·62	22·68	1,916·65	792·92	..
		From District generally:										
		Sundry parcels treated at:										
		Allsop and Howell's Works, Kalgoorlie	..	..	..	..	..	..	..	..	360·85	..
		Burbanks Main Lode Works	..	..	..	139·16	..	2·77	..	557·50	1,019·82	..
		Carswell's Cyanide Works	..	..	..	43·68	..	..	..	..	98·29	..
		Fremantle Smelting Works	..	..	..	..	..	..	..	..	135·52	108·89
		Fremantle Trading Co's Works	..	..	..	..	..	..	..	..	20·08	..
		Highgate Works	..	..	..	..	..	..	..	100·00	286·51	..
		Howell's Works	..	..	..	179·21	..	..	..	..	179·21	..
		King Solomon Works	..	..	..	..	..	·87	..	695·00	1,299·50	..
		Lady Robinson Cyanide Works	..	..	..	..	..	..	..	70·00	348·28	..
		Moss' Cyanide Works	..	..	..	..	..	..	..	..	2,958·84	..
		Oratava Works, Kalgoorlie	..	..	..	..	..	..	..	..	171·81	..
		Red Hill Westralia Works	..	..	..	..	..	..	..	10·00	75·81	..
		State Battery—Coolgardie	..	..	..	1,573·06	..	..	..	647·50	5,063·76	..
		State Battery—Widgiemooltha	..	..	..	..	..	..	..	38·50	307·73	..
		Various Works	..	..	..	..	..	4·11	..	2,340·11	9,166·26	..
		Reported by Banks and Gold dealers	372·27	..	..	..	..	6,032·49	543·04	..	..	..
		Total	**418·10**	**302·46**	**54,368·03**	**36,526·21**	**13·10**	**7,441·69**	**7,639·98**	**1,361,698·60**	**874,460·21**	**757·61**

KUNANALLING DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Balgarrie ..	622s	(Balgarrie G.M. Co., N.L.)	..	..	..	..	..	..	1·64	340·00	81·43	..
Do. ..	622s	United Australia	..	..	..	..	..	..	8·53	1,253·50	687·39	..
Do. ..	..	Voided leases	..	..	..	..	..	10·94	65·31	3,530·75	4,036·92	1·38
Do. ..	..	Sundry claims	..	..	..	..	..	..	18·57	912·25	358·01	..
Carbine ..	33s	(Carbine)	..	..	..	..	..	..	10·85	2,401·00	1,164·53	..
Do. ..	33s. 710s, 711s ..	Carbine l ases	..	..	3,010·00	1,597·92	..	..	677·13	18,361·50	10,201·46	..
Do. ..	(758s)	(Carbine South)	..	..	..	..	..	..	..	22·00	10·29	..
Do. ..	(758s), (771s), (805s)	Homeward G.M. Co., Ltd.	..	..	..	..	..	..	..	327·00	35·12	..
Do. ..	776s	Spearmint	..	..	82·00	92·34	..	..	..	522·00	633·56	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	1,653·00	1,977·02	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	39·00	21·87	..
Carnage ..	..	Voided leases	..	..	..	..	..	176·04	659·31	2,402·00	2,170·67	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	61·00	27·50	..

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

Coolgardie Goldfield—*continued.*

KUNANALLING DISTRICT—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Cashman's ..	716s, [1289w] ..	Lady Evelyn	..	..	..	..	..	..	..	241·75	479·81	..
Do. ..	..	Voided leases	..	..	..	..	..	67·51	793·44	7,187·90	6,395·33	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	6·16	116·00	67·61	..
Chadwin ..	(843s)	Lady Beatrice	..	..	3·00	28·25	..	..	..	3·00	28·25	..
Do. ..	822s	Resolute	..	..	53·00	152·63	..	..	..	171·00	593·40	..
Do. ..	816s	Wheel of Fortune	..	..	92·00	336·71	..	..	..	233·25	759·39	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	586·50	310·14	..
Do. ..	..	Sundry claims	..	..	24·00	35·57	..	..	·86	487·00	439·76	..
Dunnsville ..	(836s)	Elizabeth	..	..	..	..	..	..	..	15·00	16·51	..
Do. ..	(828s)	Robin Adair	..	..	32·00	23·67	..	..	..	119·10	62·00	..
Do. ..	..	Voided leases	..	..	..	..	..	..	181·12	17,273·00	7,903·72	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	22·07	285·09	254·52	..
Jourdie Hills	(773s), 786s ..	Jourdie Enterprise leases ..	..	..	725·00	397·05	..	..	..	9,884·00	3,715·75	..
Do. ..	786s	(Jourdie Enterprise South) ..	..	..	..	..	..	..	..	91·00	39·42	..
Do. ..	369s, (661s) ..	(Jourdie Hills G.M. Co., Ltd.) ..	..	..	..	..	..	..	..	9,635·00	7,868·08	..
Do. ..	369s, (661s) ..	(Jourdie United G.Ms., Ltd.) ..	..	..	..	..	..	..	..	1,520·00	1,027·65	..
Do. ..	514s	Pride of Jourdie North ..	..	..	211·00	279·90	..	..	..	2,638·00	2,228·32	..
Do. ..	369s	(Pride of the Jourdies) ..	..	..	..	..	..	..	..	410·74	465·47	..
Do. ..	369s	Pride of the Jourdies: Forwood Down & Co., Ltd.	..	..	106·00	181·47	1·45	..	..	481·00	346·66	1·45
Do. ..	..	Voided leases	..	..	..	..	..	..	18·00	1,823·00	726·67	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	760·50	405·00	..
Kandana ..	..	Voided leases	..	..	..	..	..	..	..	465·00	68·12	..
Kintore ..	(802s)	Last Chance	..	..	4·50	9·31	..	..	..	142·83	274·17	..
Do. ..	(808s)	London	..	..	6·00	3·71	..	..	..	123·50	84·10	..
Do. ..	797s	Sugarloaf	..	..	25·00	46·70	..	..	..	471·00	610·85	..
Do. ..	..	Voided leases	..	..	..	..	..	..	143·66	42,289·81	30,778·32	..
Do. ..	..	Sundry claims	27·03	..	29·00	30·36	..	100·30	..	904·20	903·59	..
Siberia ..	674s, [1286w] ..	Golden	..	..	..	..	..	..	82·17	22·40	120·37	..
Do. ..	(720s, [1292w]) ..	Invincible	..	..	..	..	..	..	..	185·00	368·63	..
Do. ..	728s, [1293w] ..	(Mexico)	..	..	..	..	..	..	..	216·50	427·07	..
Do. ..	718s, [1291w] ..	Missouri	..	..	..	..	..	..	..	196·00	79·88	..
Do. ..	..	Voided leases	..	..	..	..	..	1·07	1,475·64	7,596·95	9,534·19	..
Do. ..	..	Sundry claims	..	..	..	..	..	30·91	..	223·00	349·86	..

25-Mile ..	696s	(Blue Bell)	..	..	..	..	..	..	8·05	697·00	429·47	..
Do. ..	727s	(Blue Bell Extended)	..	..	..	..	..	..	..	113·00	71·32	..
Do. ..	696s, 727s ..	Blue Bell leases	..	..	15·00	61·37	..	..	..	1,405·00	1,556·53	..
Do. ..	839s	Hopeful	..	..	128·00	199·04	..	..	..	151·00	256·20	..
Do. ..	823s	Premier	..	..	692·00	331·65	..	..	..	1,668·00	767·77	..
Do. ..	845s	Sadie	..	..	188·00	166·05	..	..	..	188·00	166·05	..
Do. ..	(586s), (602s) ..	Shamrock leases	..	..	20·00	30·48	..	..	192·12	3,944·35	5,100·90	..
Do ..	645s	Star of Fremantle	..	..	..	59·90	..	..	..	4,853·50	3,249·29	..
Do. ..	603s	Sydney Mint	..	..	382·00	281·20	..	..	213·30	1,083·75	2,738·02	..
Do. ..	847s	Turn of the Tide	..	..	62·00	47·67	..	..	..	62·00	47·67	..
Do. ..	..	Voided leases	..	..	..	..	..	..	258·64	79,542·14	59,353·15	18·84
Do. ..	..	Sundry claims	2·83	..	370·50	307·41	..	6·62	87·17	4,221·45	2,283·72	..
		From District generally :—										
		Sundry parcels treated at :										
		Blue Bell Works	..	..	..	203·98	..	..	..	26·00	442·60	..
		Bow and Carswell's Works	..	..	..	..	..	9·22	..	239·00	640·13	..
		Lindsay's Works	..	..	..	..	..	..	..	..	6·40	..
		Orotava Works—Kalgoorlie	..	..	..	..	..	..	..	..	71·90	..
		Stanley Works	..	..	..	..	..	14·86	..	402·60	370·43	..
		Various Works	..	..	..	..	..	..	..	1,037·66	1,250·15	..
		Reported by Banks and Gold Dealers	·62	..	..	..	..	80·88	1·10	..	..	..
		Total	**30·48**	..	**6,260·00**	**4,904·34**	**1·45**	**498·35**	**4,924·84**	**238,257·47**	**177,940·06**	**21·67**

Yilgarn Goldfield.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Blackbourne ..	..	Voided leases	..	..	..	..	..	..	..	1,282·50	341·37	..
Bullfinch ..	(969), (970) ..	Bullfinch East G.M. Co., Ltd. ..	..	..	..	..	..	..	..	22·85	78·60	..
Do. ..	(1263)	Bullfinch Great Northern ..	..	..	16·00	2·91	..	..	..	16·00	2·91	..
Do. ..	914, 915, 916, 926, 928, 942, 960	(Bullfinch leases)	..	..	..	..	..	..	..	1,027·52	10,958·88	..
Do. ..	914, 915, 916, 926, 928, 942, 960	Bullfinch Proprietary (W.A.), Ltd. ..	..	..	..	..	..	..	..	653·42	5,544·42	..
Do. ..	(962)	Chaffinch : Great Chaffinch G.M., Co. N.L.	..	..	..	..	..	..	..	1·00	6·55	..
Do. ..	(2579)	Derwent Jack	..	..	58·60	38·30	..	..	..	58·60	38·30	..
Do. ..	(2325)	Golden Area	..	..	..	..	..	..	..	12·00	2·11	..
Do. ..	2337	Illawarra : Cosgrove Prospecting Syndicate	..	..	..	..	..	..	..	15·00	5·13	..
Do. ..	2494	Lady Agnes	..	..	189·65	177·99	..	..	..	189·65	177·99	..

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

Yilgarn Goldfield—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Corinthian ..	(1589)	(Babylonia Extended)	..	..	..	..	..	..	..	28·00	6·84	..
Do. ..	(1589), (1590) ..	Babylonia Extended G.M. Co., N.L. ..	..	..	18·00	7·52	..	..	..	53·00	16·02	..
Do. ..	(1391), (1393) ..	Babylonian G.M. Co., N.L.	..	..	72·50	57·96	..	..	..	52·50	57·96	..
Do. ..	(1391), (1392), (1393)	(Babylonia North leases) ..	..	..	120·00	119·58	..	..	..	371·00	312·83	..
Do. ..	893	Corinthian	..	..	..	..	..	..	..	1,262·00	737·01	..
Do. ..	(955)	Pilot	..	..	65·00	10·75	..	..	..	65·00	10·75	..
Do. ..	.. ..	Voided leases	..	..	..	..	..	..	..	12·00	1·34	..
Do. ..	.. ..	Sundry claims	..	..	16·00	2·75	..	..	..	69·00	68·93	..
Golden Valley	(920)	(Ada May)	..	..	..	..	..	..	..	115·00	179·99	..
Do. ..	(1750)	Budgerrigah	..	1·11	..	..	..	..	1·11	..	..	..
Do. ..	(1751)	Bullin Bullin	..	..	..	..	..	..	..	13·00	5·03	..
Do. ..	(2304)	Bullwark	..	11·00	48·00	57·63	..	..	11·00	62·00	74·32	..
Do. ..	2272	Glide Away	..	..	254·00	360·52	..	..	..	254·00	360·52	..
Do. ..	(1337)	Golden Crown	..	..	..	..	..	..	..	40·00	5·19	..
Do. ..	(2453)	Golden Hole	..	..	..	..	..	..	..	19·50	16·24	..
Do. ..	2559	Golden Valley	..	..	30·00	2·67	..	..	..	30·00	2·67	..
Do, ..	(2297)	Green Harp	..	..	..	..	..	..	..	46·00	53·21	..
Do. ..	(2435)	Lady Mollie	..	..	..	..	..	..	..	17·25	6·76	..
Do. ..	(2357)	Light Wing	..	..	..	..	..	..	..	4·50	1·75	..
Do. ..	(922)	Lily of the Valley	..	..	..	..	..	..	..	117·00	22·70	..
Do. ..	(2296)	Manxman Main Lode	..	..	..	..	..	..	..	20·00	32·35	..
Do. ..	2255	Manxman South Extended ..	..	..	40·00	103·58	..	..	..	69·00	162·02	..
Do. ..	2389	Marie's Find	..	..	252·00	317·66	..	..	..	252·00	317·66	..
Do. ..	(1848)	Marionette	..	..	14·00	11·95	..	..	..	14·00	11·95	..
Do. ..	924	(Mountain Oaks)	..	..	..	..	..	..	..	302·50	418·46	..
Do. ..	2541, 2542 ..	New Green Harp leases ..	..	..	230·00	184·39	..	..	..	230·00	184·39	..
Do. ..	829, (920), 924 (1043)	Pine Hill G.M. Co., N.L.	..	..	95·00	56·58	..	..	..	421·00	449·64	..
Do. ..	829	(Pioneer)	..	..	..	..	..	..	..	102·00	336·35	..
Do. ..	(1807)	Red Robin	..	..	..	..	..	..	..	25·50	11·44	..
Do. ..	(2391)	Rosalie	..	..	23·00	23·98	..	..	..	23·00	23·98	..
Do. ..	2240	Sunset: Sunset Gold Mining Co., Ltd.	..	..	47·00	8·34	..	..	..	67·00	14·30	..
Do. ..	835	Violet	..	..	490·00	167·81	..	..	..	730·00	434·85	..
Do. ..	2553	Wainui	..	5·00	20·00	17·30	..	..	5·00	20·00	17·30	..
Do. ..	2239	Welcome	..	..	77·00	37·09	..	..	..	77·00	37·09	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	198·00	300·93	..
Do. ..	..	Sundry claims	..	..	100·15	89·95	..	..	..	237·65	168·72	..
Greenmount	503, (535), (555)	(Greenmount G.Ms., Ltd.)	..	..	..	..	..	..	..	5·00	2·11	..

Do.	503, (555)	Greenmount Mines, N.L.									64,186·00	15,788·99	364·72
Do.	550	(Sunbeam)							14·00		4,472·00	1,427·25	
Do.	550	Sunbeam	55·00	22·06							200·00	100·14	
Do.	550, (565)	(Sunbeam leases)									3,191·00	816·42	
Do.	536	Transvaal									30,233·00	7,317·08	579·78
Do.	503	(United Australia)									410·00	120·15	
Do.		Voided leases							31·99	21·62	5,696·00	1,548·63	
Do.		Sundry claims	313·00	72·63						4·12	605·00	225·45	
Hope's Hill	2544	Colleen Bawn	102·60	75·18							102·60	75·18	
Do.	(1052)	Cross									15·00	17·45	
Do.	(2502)	Great Boulder No. 2	18·00	19·95							58·00	25·42	
Do.	(1727), (1771)	Hopefinch leases	20·00	1·72							107·00	10·41	
Do.	(795)	Hope's Hill									357·00	152·99	
Do.	(895)	Hope's Hill Perseverance	35·00	50·98							426·50	459·37	
Do.	(2524)	Lady Käthe									45·00	7·76	
Do.	2523	Parisian	191·00	207·57							196·00	212·22	
Do.	1432	Phœnix	663·50	267·69						50·20	855·50	366·41	
Do.	(2354)	Renegade									123·00	21·85	
Do.	921	Rodda's Reward									312·00	42·13	1·00
Do.		Voided leases								2·53	126,049·35	32,043·90	
Do.		Sundry claims	119·50	77·04						2·71	458·00	221·40	
Marvel Loch	(2484)	Bee									68·00	36·16	
Do.	2530	Beta	40·00	5·76							40·00	5·76	
Do.	923	Bohemian	344·00	162·94	·96					17·44	957·00	393·15	
Do.	1689	Broncho	217·00	22·17							217·00	22·17	
Do.	2538	Cadonia	40·00	43·19							40·00	43·19	
Do.	1465	Comet	621·50	1,253·84							989·50	2,121·94	
Do.	2588	Dalmore	14·00	38·40							14·00	38·40	
Do.	(925)	(Dell)								24·77	100·00	38·04	
Do.	768	(Donovans Find)									1,768·00	1,999·43	
Do.	768	Donovan's Find: Greenmount Mines, N.L.									1,057·00	950·88	
Do.	1463	Eclipse	290·00	217·43							656·00	426·30	
Do.	869	(Eveless Eden)									104·00	44·29	
Do.	(823)	Exhibition									1,111·00	430·83	
Do.	2609	Geelong	222·50	142·01							222·50	142·01	
Do.	820	Gentle Annie	348·00	90·02							1,193·00	522·22	
Do.	2563	Golden Gate	18·00	3·74							18·00	3·74	
Do.	719	(Great Victoria)									1,356·00	281·53	
Do.	719, 944, 945, 1227, 1228, 1606	Great Victoria leases	6,830·00	913·70							10,190·00	1,412·09	
Do.	490, 517, 558	Jacoletti G.Ms., Ltd.	232·00	262·88							6,419·00	2,611·06	
Do.	490, 517, 558, (559)	(Lady Loch Mines, Ltd.)									2,091·00	674·01	
Do.	714	(Marvel Loch)									500·00	316·81	
Do.	714, 723, 822, 869,	Marvel Loch G.M. Co., N.L.	7,380·00	2,266·37							32,425·00	12,793·68	379·96
Do.	(739)	Marvel Loch North									626·00	398·76	
Do.	852	May Queen	120·00	577·65						4·07	281·00	1,504·70	
Do.	(1603)	Mountain King									205·00	137·50	
Do.	805	Mountain Prince									120·00	72·87	
Do.	(1156)	Mountain Prince North	60·00	11·67							60·00	11·67	
Do.	803, 838, 948, 949, 950, 951	(Mountain Queen leases)									748·00	208·39	
Do.	803, 838, 948, 949, 950, 951, 2543	Mountain Queen, Limited	38,756·00	9,589·25	95·06						38,756·00	9,589·25	95·06

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

Yilgarn Goldfield—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Marvel Loch	665	(Never Never)	..	..	..	..	..	..	..	29,395·00	7,709·26	..
Do.	2490	New Democrat	..	..	15·50	27·76	..	..	..	120·50	112·73	..
Do.	824	Newry	..	..	..	..	..	..	..	990·50	218·36	..
Do.	1011	Rising Star	..	..	140·00	11·48	..	..	..	140·00	11·48	..
Do.	839	Scorpio	..	..	301·00	387·55	..	..	25·69	1,428·50	1,235·84	..
Do.	(2522)	Southern Kingfisher	..	..	..	..	..	..	..	114·00	13·15	..
Do.	1435	Starfinch	..	..	28·00	5·80	..	..	..	149·00	58·10	..
Do.	490, 517	(Turnbull leases)	..	..	..	..	..	..	..	2,143·00	1,481·72	..
Do.	1452	Undaunted	..	..	90·00	87·46	..	..	..	465·00	190·59	..
Do.	665, 765	Yilgarn G.M. Co., Ltd.	..	..	130·00	31·13	..	..	..	130·00	31·13	..
Do.		Voided leases	..	..	..	..	..	..	3·68	5,337·50	2,608·83	..
Do.		Sundry claims	..	..	182·00	73·31	..	..	28·14	2,450·25	1,494·45	..
Kennyville	2574	Bournville	..	..	51·00	16·16	..	..	..	51·00	16·16	..
Do.	(813)	Catherine	..	..	25·00	3·06	..	..	..	399·50	161·63	..
Do.	776	Cornishman	..	13·18	289·00	99·92	..	..	13·18	1,366·00	1,211·35	..
Do.	(2545)	Emperor	..	..	53·00	8·04	..	..	..	53·00	8·04	..
Do.	570	(Great Leviathan)	..	..	..	..	..	..	..	3,821·85	2,948·67	..
Do.	570	Great Leviathan	..	..	545·00	559·23	..	..	..	2,224·00	2,018·79	..
Do.	570	(Great Leviathan: Northern Blocks Syndicate, Ltd.)	..	..	..	..	..	..	..	10,705·00	2,974·64	..
Do.	2539, 2568	Mornington Prospecting Syndicate, N.L., W.A.	..	..	20·00	3·18	..	..	..	20·00	3·18	..
Do.	911	Trafalgar	..	..	157·00	153·41	..	..	..	665·00	662·05	..
Do.		Voided leases	..	..	..	..	..	..	5·58	493·00	234·46	·09
Do.		Sundry claims	..	..	..	..	..	..	..	204·00	129·98	..
Koolyanobbing		Voided leases	..	..	..	..	..	..	..	308·00	116·74	..
Do.		Sundry claims	..	..	..	·84	..	..	..	55·00	11·24	..
Mt. Jackson	1979	Allen's Find	..	..	139·30	106·23	..	..	..	139·30	106·23	..
Do.	(2284), (2285)	Athlone Reward leases	..	..	100·00	82·61	..	..	..	105·00	104·81	..
Do.	2547	Best Known	..	..	20·80	33·35	..	..	..	20·80	33·35	..
Do.	(2336)	Bronzewing	..	..	44·50	60·03	..	..	..	44·50	60·03	..
Do.	1933	Butcher Bird No. 1	..	..	288·00	266·70	..	..	..	288·00	266·70	..
Do.	(2362)	Flemington	..	..	..	..	..	..	4·36	..	..	..
Do.	(2505)	General Jackson	..	..	36·00	26·27	..	..	..	36·00	26·27	..
Do	2053	Great Unknown	..	..	411·05	1,374·63	..	..	37·22	448·93	1,641·72	..
Do.	2444	Great Unknown North	..	..	11·00	23·07	..	..	30·62	11·00	23·07	..
Do.	(2156)	Inglewood	..	..	13·50	8·96	..	..	..	13·50	8·96	..

Do.	(2602)	Known Best	..	..	..	12·00	13·93	..	..	..	12·00	13·93	..
Do.	(2387)	Marda East	..	..	..	..	..	..	..	..	7·50	12·01	..
Do.	2190	Miner's Dream	..	..	..	45·00	16·42	..	..	..	45·00	16·42	..
Do.	(2397)	Mt. Jackson Wonder	..	..	..	120·00	44·27	..	..	..	120·00	44·27	..
Do.	(2527)	Persian	..	..	..	16·00	31·96	..	..	..	16·00	31·96	..
Do.	(2300)	Queen of the Hills	..	..	..	..	..	..	..	..	8·00	20·85	..
Do.	2548	Standard	..	..	..	67·00	355·13	..	..	..	67·00	355·13	..
Do.	(2157)	Three Kings	..	..	..	..	..	..	..	..	10·00	12·31	..
Do.	2614	Titanic	..	..	..	13·50	18·69	..	..	..	13·50	18·69	..
Do.	2564	Victoria Reef	..	..	..	27·00	5·14	..	..	..	27·00	5·14	..
Do.	2569	Wellknown	..	..	..	6·00	6·96	..	..	..	6·00	6·96	..
Do.	(2310)	Yarbu	..	..	..	10·00	16·42	..	..	..	10·00	16·42	..
Do.		Voided leases	..	..	..	..	..	..	..	..	30,148·75	19,662·04	2,305·28
Do.		Sundry claims	..	..	1·92	208·40	116·70	..	..	1·92	208·40	116·70	..
Mt. Rankin		Voided leases	..	..	..	..	..	..	3·84	5·20	496·00	122·17	..
Do.		Sundry claims	..	..	..	122·00	32·46	..	..	..	170·00	54·38	..
Parker's Range	508	Australia	..	..	..	240·00	62·73	..	..	..	2,557·00	1,508·40	..
Do.	(2128)	Ell-Ess-Dee	..	..	..	..	..	..	..	..	11·00	3·24	..
Do.	(707)	Golden Cube	..	..	..	..	..	..	..	12·85	1,344·00	505·95	..
Do.	(2512)	Golden Links	..	..	..	13·00	12·81	..	..	..	13·00	12·81	..
Do.	2606	King of the Range	..	..	..	51·00	108·39	..	..	..	51·00	108·39	..
Do.	(2503)	Lone Hand	..	..	..	23·00	3·33	..	..	..	23·00	3·33	..
Do.	1099	(McIntosh)	..	..	..	..	..	..	..	..	110·00	54·89	..
Do.	1099, 1566	Parker's Range G.Ms., N.L.	..	..	..	35·00	37·48	..	..	..	35·00	37·48	..
Do.	(1688)	Raven	..	..	..	..	..	..	..	..	25·00	4·71	..
Do.	2324	Searchlight North: Yarloop Prospecting Syndicate	..	..	..	..	..	..	..	..	1 0·50	31·77	..
Do.	1779	Searchlight: Ziegler Prospecting and Option Syndicate, N.L.	..	..	..	..	..	..	..	..	1·50	30·03	..
Do.	2611	Snowdrop	..	..	..	37·00	47·08	..	..	..	37·00	47·08	..
Do.	2546	South End	..	..	4·82	40·00	13·78	..	..	4·82	40·00	13·78	..
Do.	(1425)	Splendid Kingfisher: King of the Range G.M. Co., Ltd.	..	..	..	27·00	53·95	..	..	..	52·00	85·08	..
Do.	724	Spring Hill	..	..	..	716·00	135·46	..	..	..	716·00	135·46	..
Do.	724 (760)	(Spring Hill leases)	..	..	..	1,171·00	207·18	..	..	..	8,910·00	2,215·59	..
Do.		Voided leases	..	..	..	..	..	..	..	50·37	6,648·25	4,949·85	..
Do.		Sundry claims	..	..	..	130·00	244·88	..	..	..	716·25	453·38	..
Southern Cross	2529	Allerton	..	..	..	142·00	50·18	..	..	..	142·00	50·18	..
Do.	(881), (882), 888, 889, (890)	(British and Foreign Development Syndicate, Ltd.)	..	..	..	1,781·00	1,660·47	14·00	..	..	90,791·75	66,545·29	356·35
Do.	(890)	(Central)	..	..	..	..	..	..	..	..	44,958·00	19,702·85	..
Do.	(749)	(Central Extended)	..	..	..	..	..	..	..	28·39	760·82	904·29	8·00
Do.	889	(Fraser's G.M. Co., N.L.)	..	..	..	..	..	..	..	..	151,771·00	67,870·33	..
Do.	888, 889	Fraser's G.M. Syndicate	..	..	..	50·00	324·13	..	..	..	50·00	324·13	..
Do.	888	(Fraser's South G.M. Co.. N.L.)	..	..	..	..	..	..	..	..	48,233·00	20,013·23	..
Do.	2342	Haddon Consolidated	..	..	..	480·00	218·03	..	..	..	500·00	223·26	..
Do.	(1056)	(Lady Edeline)	..	..	..	..	..	..	..	..	12·00	13·87	..
Do.	(749), (1056,) (1543), (2218)	Lady Edeline G.M. Co., N.L.	..	..	..	..	15·54	..	..	..	12·00	148·11	..
Do.	1042	Lord Cardigan	..	..	..	124·00	37·77	..	..	..	432·00	127·61	..
Do.	2416	Maori Lass	..	..	..	..	..	..	..	..	250·00	52·31	..
Do.	(1889)	Pretoria	..	..	..	..	..	..	..	..	127·00	32·26	..

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

Yilgarn Goldfield—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Southern Cross	(2382)	Yess	..	..	..	..	..	..	..	22·00	8·64	..
Do.	..	Voided leases	..	..	..	..	..	..	182·83	88,089·38	33,057·94	·06
Do.	..	Sundry claims	..	..	202·00	53·48	..	3·73	592·81	1,224·30	328·14	..
Westons	2083	Christmas Birthday Central	..	..	16·75	22·07	..	..	..	20·75	33·56	..
Do.	(2577)	Diorite Queen	..	..	5·00	1·20	..	..	..	5·00	1·20	..
Do.	2180	Edna May	..	..	581·00	919·27	..	..	..	581·00	919·27	..
Do.	2086, 2087, 2088	Greenfinch Proprietary G.M., N.L.	..	..	3,450·00	1,547·93	..	..	..	3,922·00	2,026·86	..
Do.	(2361)	Independent	..	..	28·00	18·47	..	..	..	28·00	18·47	..
Do.	(2241)	Jessie No. 1	..	..	16·50	18·24	..	..	..	16·50	18·24	..
Do.	(2092)	Little Mary	..	..	16·00	3·47	..	..	..	16·00	3·47	..
Do.	2291	Myrtle Central	..	..	595·00	190·38	..	..	..	595·00	190·38	..
Do.	2168, 2238	Myrtle Consols leases	..	..	41·00	22·81	..	..	..	41·00	22·81	..
Do.	2565	Nevertire	..	..	12·00	2·13	..	..	..	12·00	2·13	..
Do.	..	Sundry claims	..	·25	111·75	45·67	..	..	·25	111·75	45·67	..
		From Goldfield generally :—										
		Sundry parcels treated at:										
		Allsop and Don's Works	..	..	..	588·44	..	..	..	..	989·96	..
		Allsop and Howell's Works	..	..	..	..	..	..	..	..	1,026·12	..
		Andre's Cyanide Works	..	..	..	..	..	..	..	..	377·33	..
		Barnett's Cyanide Works	..	..	..	..	..	..	..	..	40·88	..
		British and Foreign Development Works	..	..	..	..	..	..	..	..	199·85	..
		Fraser's South Extended Tailings Works	..	..	..	..	..	..	..	..	1,443·31	2·64
		Fremantle Smelting Works	..	..	..	..	..	..	..	21·28	576·69	33·90
		Greenfinch Proprietary G.M. Works	..	..	..	241·28	..	..	..	..	241·28	..
		Greenmount Works	..	..	..	..	..	..	..	..	154·77	..
		Hope's Hill Cyanide Works	..	..	..	304·36	..	..	..	..	310·17	..
		Jacoletti Works	..	..	..	..	..	..	..	..	1,018·17	..
		Jones' Cyanide Works	..	..	..	..	..	..	..	..	127·39	..
		Lather's Cyanide Works	..	..	..	17·14	..	..	..	..	587·13	..
		Miller's Cyanide Works	..	..	..	..	..	..	..	..	120·57	..
		Never Never Works	..	..	..	..	..	..	..	..	53·83	..
		Orotava Works—Kalgoorlie	..	..	..	..	..	..	..	..	238·22	..
		Spring Hill Works	..	..	..	12·08	..	..	..	..	159·31	..
		Sunbeam Works	..	..	..	832·77	..	..	..	8·00	2,411·14	..
		Violet Works	..	..	..	84·86	..	..	..	..	179·85	..
		Yilgarn G.M. Co., N.L's. Works	..	..	..	113·22	..	..	..	..	113·22	..
		Various Works	..	..	..	..	..	..	..	59·00	4,479·58	..
		Reported by Banks and Gold Dealers	3·39	..	..	..	..	22·05	3·53	..	..	..
		Total	**3·39**	**38·24**	**73,199·05**	**80,633·77**	**109·06**	**75·61**	**1,176·01**	**899,106·70**	**406,518·87**	**4,126·84**

Dundas Goldfield.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Buldania ..	(1151)	Coronation	..	..	21·50	23·00	..	..	..	54·50	60·82	..
. . Do. ..	..	Voided leases	..	..	..	..	..	..	3·02	791·55	648·17	..
. . Do. ..	..	Sundry claims	..	31·25	9·50	23·98	..	..	36·53	291·02	472·24	..
. .												
Dundas ..	..	Voided leases	..	..	..	..	..	..	..	4,543·23	2,208·48	..
. . Do. ..	..	Sundry claims	..	..	..	..	..	..	385·37	182·50	143·88	..
. .												
Killaloe ..	..	Voided leases	..	..	..	..	..	..	..	20·65	6·88	..
.												
Norseman ..	(1144), (1147) ..	Abbotshall leases: Cumberland G.M. Co., N.L.	..	..	..	..	..	..	..	50·00	13·97	..
Do. ..	987, 1113 ..	After Years leases	..	..	..	..	..	..	..	709·00	248·18	..
Do. ..	(1018)	Bandit King	..	..	25·00	8·86	..	..	8·86	295·10	154·96	..
Do. ..	(1143)	Bonanza	..	..	..	..	..	..	..	36·50	9·92	..
Do. ..	(1150)	Bonanza North	..	..	..	..	..	..	..	25·50	8·54	..
Do. ..	(42), (43), (53), (579), (690), (889), (898), (1011)	(Cumberland G.M. Co., N.L.) ..	..	..	..	..	..	..	..	47,282·60	46,899·61	..
Do. ..	(42), (43), (53), (579), (889)	Cumberland G.M. Co., N.L.	..	..	492·50	924·55	..	..	..	967·50	1,738·50	..
Do. ..	966	(Esperanza No. 2)	..	..	..	..	..	..	·96	689·00	948·88	..
Do. ..	1171	Fire King	..	..	185·00	18·13	..	..	..	185·00	18·13	..
Do. ..	938, 945, 988 ..	(Hampton Plains Estate (1906), Ltd.)	..	..	..	..	..	..	9·50	8,493·00	2,229·24	..
Do. ..	938, 945, 988 ..	Hampton Uruguay, Limited ..	..	..	15,933·00	3,273·07	..	..	..	15,933·00	3,697·29	..
Do. ..	(53)	(John Bull)	..	..	..	..	..	..	..	314·00	281·93	..
Do. ..	(53)	(John Bull : Midas G.M. Co., N.L.) ..	..	..	..	..	..	..	..	416·00	204·15	..
Do. ..	1160	King	..	..	1,944·00	306·15	..	..	..	2,129·00	334·40	..
Do. ..	956	(Kirkpatrick West)	..	..	..	..	..	..	3·68	214·00	329·54	..
Do. ..	956, 1032 ..	Kirkpatrick West leases ..	..	..	29·00	22·09	..	..	1·10	211·00	224·10	..
Do. ..	945	(Lady Miller South)	..	..	..	..	..	..	..	17·00	4·36	..
Do. ..	1172	Last Hope	..	..	13·00	3·79	..	..	..	13·00	3·79	..
Do. ..	(1139)	Little Gladys	..	..	..	..	..	..	41·51	18·00	15·58	..
Do. ..	(1132)	Lucky Call No. 2	..	..	..	..	..	..	..	35·00	11·00	..
Do. ..	852	(Mararoa)	..	..	..	..	..	..	..	9,167·00	4,484·90	..
Do. ..	(992)	(Mararoa Extended)	..	..	..	..	..	..	..	169·50	24·08	..
Do. ..	852, 912, 966, 977, 979, 980, 985, 1031	Mararoa G.M. Co., N.L.	..	..	28,401·00	14,901·68	..	..	..	128,457·50	68,592·76	21,868·38
Do. ..	(991)	(Mararoa North No. 1) ..	..	..	..	..	..	..	..	17·00	13·35	..
Do. ..	(42), (43), (53) ..	(Mt. Benson G.M. Co., N.L.) ..	..	..	..	..	..	..	..	4,797·40	4,181·00	..
Do. ..	(964)	(New Moon)	..	..	..	..	..	..	..	983·00	940·25	64·27
Do. ..	(964)	New Moon	..	..	..	..	..	..	..	29·50	14·45	2·04
Do. ..	(964), (1017), (1025)	(New Moon leases)	..	..	..	..	..	..	..	2,344·00	1,894·63	157·04
Do. ..	(821)	(Northern Star)	..	..	..	..	..	..	355·36	717·00	1,137·32	..
Do. ..	(991), (992), (999)	North Mararoa G.M. Co., N.L. ..	..	..	..	..	..	..	..	564·50	110·05	..
Do. ..	903	(O.K.)	..	..	..	..	..	..	21·23	1,147·25	1,293·01	..
Do. ..	995	O.K. Extended	..	..	132·00	75·92	..	..	..	1,120·00	930·52	..
Do. ..	903, 1138 ..	O.K. leases	..	..	144·50	146·87	..	..	..	436·50	340·05	..

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

Dundas Goldfield—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Norseman ..	(914)	(Oversight)	..	..	..	..	..	..	..	373·00	534·12	..
Do. ..	1163	Oversight	..	..	51·50	83·37	..	..	..	51·50	83·37	..
Do. ..	(914), (1020), (1037)	Oversight leases	..	..	..	..	..	..	..	2,540·00	2,183·61	..
Do. ..	(1104)	Penneshaw	..	..	..	..	..	..	..	503·50	249·77	..
Do. ..	106, 187, 587, 840, 972	Princess Royal G.M. Co., N.L. ..	..	..	..	21·89	..	..	..	166,351·50	140,471·58	9,364·14
Do. ..	1021	Princess Royal North	..	..	..	296·02	..	..	..	593·00	1,113·85	..
Do. ..	1021	(Princess Royal North G.M. Co., N.L.)	..	..	..	..	..	..	..	1,311·00	1,197·01	..
Do. ..	187	Princess Royal South	..	..	..	..	..	..	..	358·00	568·05	..
Do. ..	1158	Queen	..	..	199·00	23·99	..	..	..	199·00	23·99	..
Do. ..	849	St. Patrick	..	..	60·50	18·00	..	..	160·91	1,235·50	2,466·62	..
Do. ..	1092, 1125 ..	Sun leases	..	..	154·00	273·00	..	..	..	154·00	273·00	..
Do. ..	1092	(Sun)	..	..	..	..	..	..	142·26	655·50	737·49	..
Do. ..	989	(Surprise)	..	..	..	..	..	..	..	806·50	395·44	..
Do. ..	989, 1145 ..	Surprise leases	..	..	312·00	144·73	..	..	..	392·00	212·97	..
Do. ..	1103	Swanage	..	..	205·00	67·55	..	..	..	924·00	245·42	..
Do. ..	(1026)	Venture	..	..	..	..	..	..	..	221·50	85·32	..
Do. ..	1016	(Viking Extended)	..	..	..	..	..	..	133·35	72·50	419·67	4·90
Do. ..	990	(Viking No. 1)	..	..	..	..	..	..	..	1,274·00	3,095·95	..
Do. ..	990, 1060 ..	(Viking No. 1 leases)	..	..	..	..	..	..	..	775·50	1,176·13	16·89
Do. ..	990, 1016, 1060, 1117	Viking No. 1 leases	..	..	4,772·00	3,314·77	..	..	..	8,309·50	10,683·44	100·49
Do. ..	(1140)	Viking North	..	..	..	..	..	..	..	12·75	11·86	..
Do. ..	1034, 1153 ..	Viking South leases	..	..	184·00	169·71	..	..	..	270·50	236·35	..
Do. ..	986	Veni Vidi Vici	..	..	..	..	..	..	1,765·39	389·00	687·91	..
Do. ..	(821), (1038) ..	(Westralia Waihi G.Ms., N.L.) ..	..	..	..	..	..	..	..	10,244·00	2,836·19	561·04
Do. ..	(821), (1120) ..	Westralia Waihi G.Ms., N.L. ..	..	..	38·00	27·35	..	..	..	95·00	37·41	2·00
Do. ..	..	Voided leases	..	..	..	..	..	4·23	3,049·33	154,275·35	108,896·91	128·58
Do. ..	..	Sundry claims	..	307·02	477·50	270·21	..	996·60	987·59	12,632·65	6,455·46	·59
Peninsula ..	..	Voided leases	..	..	..	..	..	..	17·61	7,764·00	4,705·10	..
		From Goldfield generally :—										
		Sundry parcels treated at :										
		Break-o'-Day Cyanide Works	..	..	..	..	..	..	..	..	179·38	..
		Lady Mary Works	..	..	..	..	..	..	..	16·00	984·04	..
		Little Wonder Cyanide Works	..	..	..	..	..	..	..	..	174·54	..
		Mararoa Crushing and Cyaniding Works	..	..	..	..	..	..	..	232·50	2,543·56	38·75
		Pike and Ross' Works	..	..	..	..	..	..	..	..	2·73	..
		Rawlings, Bullen, and Rumble's Works	..	..	..	471·25	..	..	..	..	786·61	..
		State Battery—Norseman	..	..	..	66·15	..	..	..	316·00	9,964·32	885·41
		Various Works	..	..	..	..	..	..	54·52	103·00	2,574·46	607·70
		Reported by Banks and Gold Dealers	..	..	..	..	..	998·97	..	..	1·04	..
		Total	..	**338·27**	**53,783·50**	**24,976·08**	..	**1,999·80**	**7,178·08**	**607,218·55**	**452,167·58**	**33,802·22**

Phillips River Goldfield.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Kundip ..	M.L. 184 ..	Christmas Gift	..	..	68·50	22·42	..	..	26·34	1,167·00	649·35	71·55
Do. ..	147	Fair Play	..	..	686·00 ..	345·09 *249·24	..	..	..	875·75	742·17	12·63
Do. ..	136, 137, 138, (139)	(Flag Gold and Copper Co., Ltd.) ..	..	..	..	..	..	..	..	7,031·50	4,729·53	1,078·38
Do. ..	136, 137, 138 ..	Flag leases	..	..	600·00	130·05	..	..	..	600·00	130·05	..
Do. ..	65	(Gem)	..	..	..	..	..	..	..	687·50	613·34	..
Do. ..	151	(Gem Consolidated)	..	..	..	..	..	..	..	777·50	616·30	..
Do. ..	151, 156 ..	Gem Consolidated leases ..	..	..	1,799·00	642·77	..	..	..	3,360·00	1,345·97	8·00
Do. ..	65, 79	Gem leases	..	..	220·00	139·32	..	..	..	8,118·35	3,481·31	..
Do. ..	M.L. 52, M.L. 94	(Harbour View leases)	..	..	..	..	..	..	379·86	3,619·25	1,560·86	61·41
Do. ..	M.L. 52, M.L. 94	Harbour View leases	..	..	1,332·50 ..	811·65 *6·37	..	..	..	3,196·50	2,146·47	1·88
Do. ..	98	Hillsborough	..	..	242·00	225·50	..	..	..	1,338·34	2,484·73	118·03
Do. ..	180	Jack's Come Home Again ..	..	..	40·00	8·65	..	..	..	40·00	8·65	..
Do. ..	(M.L. 338) ..	Little Wonder	..	..	..	..	..	..	..	4·44	7·39	10·76
Do. ..	174	May Day	..	..	361·00	297·85	..	..	..	361·00	297·85	..
Do. ..	(173)	Missing Link	..	..	103·00	34·60	..	..	..	103·00	34·60	..
Do. ..	M.L. 52, M.L. 94	(Ravensthorpe G.M. Syndicate, N.L.)	..	..	..	..	..	..	..	1,124·00	433·94	164·98
Do. ..	74	Two Boys	..	..	2,134·00	702·02	..	..	3·90	8,236·62	5,634·80	..
Do. ..	..	Voided leases	..	..	..	..	..	113·28	146·07	4,645·25	3,758·69	1,909·51
Do. ..	..	Sundry claims	12·61	44·22	70·00	16·31	..	75·24	71·58	441·04	305·68	15·45
Mt. Desmond	M.L. 203 ..	British Flag	..	..	..	..	..	..	..	..	7·76	..
Do. ..	(M.L. 335) ..	Comstock	..	..	..	..	..	..	..	..	6·46	38·53
Do. ..	M.L. 208 ..	(Desmond)	..	..	..	..	..	..	..	..	·77	..
Do. ..	M.L. 208 ..	Desmond: Phillips River Gold and Copper Co., Ltd.	..	..	..	*86·32	..	..	..	..	94·81	14·55
Do. ..	M.L. 95	Elverdton: Phillips River Gold and Copper Co., Ltd.	..	..	..	..	..	..	..	..	2,342·03	6,537·35
Do. ..	M.L. 95	(Elverdton: Phillips River Option Syndicate, N.L.)	..	..	..	..	..	..	..	..	9·63	..
Do. ..	M.L. 275 ..	Ironclad	..	..	..	..	..	..	..	..	82·41	109·48
Do. ..	M.L. 109 ..	(Mt. Desmond)	..	..	..	..	..	..	1·40	..	36·97	..
Do. ..	M.L. 109 ..	Mt. Desmond: Phillips River Gold and Copper Co., Ltd.	..	..	..	*24·18	..	..	..	..	212·45	180·06
Do. ..	M.L. 199 ..	P.L.P.	..	..	..	..	..	..	..	..	13·69	7·41
Do. ..	..	Voided leases	..	..	..	..	..	..	..	9·00	24·14	4·21
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	..	·56	..
Mt. Parchas ..	(89)	Mt. Agnes Reward	..	..	..	..	..	..	..	281·00	230·51	..
Do. ..	..	Voided leases	..	..	..	..	..	..	4·38	17·05	30·45	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	4·75	4·68	..

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

Phillips River Goldfield—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Ravensthorpe	(172)	Ellendale	..	..	..	..	..	..	..	20·00	28·09	..
Do.	M.L. 345	James Henry	..	..	27·50	7·86	..	..	..	27·50	7·86	..
Do.	(155)	Kooyoura	..	..	..	..	..	..	26·96	189·38	99·40	2·16
Do.	M.L. 116	Last Chance	..	..	..	*11·19	..	..	..	..	24·32	46·57
Do.	153	Maori Queen	..	..	254·00	150·24	..	..	..	517·67	316·37	..
Do.	M.L. 16	(Marion Martin)	..	..	..	..	..	..	..	..	20·09	..
Do.	M.L. 16	Marion Martin: Phillips River Gold and Copper Co., Ltd.	..	..	..	*40·29	..	..	..	..	215·38	205·97
Do.	M.L. 175	(Mt. Benson)	..	..	..	..	..	..	..	..	287·88	..
Do.	M.L. 331	Mt. Benson Extended	..	..	..	..	..	..	..	..	4·39	3·47
Do.	M.L. 175	Mt. Benson: Phillips River Gold and Copper Co., Ltd.	..	..	..	..	..	..	..	..	458·77	199·83
Do.	M.L. 15	(Mt. Cattlin)	..	..	..	..	..	..	·49	200·00	85·50	..
Do.	M.L. 15	(Mt. Cattlin: Mt. Cattlin Copper Mining Co., Ltd.)	..	..	..	..	..	..	..	..	1,496·92	52·92
Do.	M.L. 15	(Mt. Cattlin: Phillips River Gold and Copper Co., Ltd.)	..	..	..	..	..	..	..	..	387·33	..
Do.	M.L. 15	Mt. Cattlin: Phillips River Gold and Copper Co., Ltd.	..	..	..	..	..	..	..	..	2,942·81	3,814·45
Do.	177	North Revival	..	..	51·00	32·22	..	..	..	51·00	32·22	..
Do.	160	Revival	..	..	70·00	32·72	..	..	..	225·50	239·61	..
Do.	..	Voided leases	..	..	..	..	..	..	114·35	20,419·94	16,840·71	58·70
Do.	..	Sundry claims	13·90	..	192·50	63·45	..	157·82	..	1,692·18	890·54	20·65
West River	..	Voided leases	..	..	..	..	..	..	..	..	10·34	31·06
Do.	..	Sundry claims	..	..	..	..	..	..	..	..	1·69	3·44
		From Goldfield generally:—										
		Sundry parcels treated at:										
		Gem Battery	..	..	..	50·32	..	..	..	..	50·32	..
		Phillips River Smelter	..	..	..	..	..	..	..	..	170·27	398·82
		Two Boys Works	..	..	..	..	..	..	..	..	100·95	..
		Various Works	..	..	..	..	..	..	..	..	4·76	..
		Reported by Banks and Gold Dealers	..	..	..	..	..	122·05	..	..	..	..
		Total	26·51	44·22	8,251·00	4,130·63	..	**468·39**	**775·33**	**69,382·01**	**56,795·52**	**15,182·21**

* From copper ore.

* Donnybrook Goldfield.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Donnybrook	..	Voided leases	..	..	..	..		23·24	..	1,613·30	816·23	..
Do. ...	..	Sundry claims	..	..	..	..	..	..	..	40·00	2·29	..
		Total	..	..			..	**23·24**	..	**1,653·30**	**818·52**	..

* Abolished 4th March, 1908.

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

State generally.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1912.					Total Production.				
			Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.
			Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
		Sundry parcels treated at:										
		Allsop and Howell's Works—Kalgoorlie	..	..	..	..	..	..	..	..	69·13	..
		Fremantle Trading Co., Ltd.—Fremantle	..	..	..	240·40	1,327·08	..	..	..	1,447·80	2,246·94
		Hacke's Works—Boulder	..	..	..	..	..	..	..	..	22·16	..
		Hannan's Proprietary Works—Kalgoorlie	..	..	..	..	..	..	..	10·00	·90	..
		Oratava Works—Kalgoorlie	..	..	..	..	..	..	..	..	164·67	..
		Rasmussen's Works—Boulder	..	..	..	..	..	..	..	..	1,082·21	..
		Seabrook Works—Northam	..	..	..	..	..	..	..	..	348·09	..
		Various Works	..	..	..	..	..	..	..	17·00	2,723·98	481·77
		Sundry specimens	..	..	..	..	..	..	2·87	..	..	..
		Reported by Banks and Gold Dealers	..	..	..	..	..	124·89	153·03	..	..	..
		Total	..	..	..	240·40	1,327·08	**124·89**	**155·90**	**27·00**	**5,858·94**	**2,728·71**

TABLE V.

COMPARATIVE RETURN OF GOLD BULLION ENTERED FOR EXPORT AND RECEIVED AT THE PERTH BRANCH OF THE ROYAL MINT, DURING THE YEARS 1910, 1911, AND 1912, SHOWING IN FINE OUNCES THE QUANTITY RECORDED EACH MONTH, AND ITS VALUE.

MONTHS AND QUARTERS.	1910.				1911.				1912.			
	EXPORT.	MINT.	TOTAL.	VALUE.	EXPORT.	MINT.	TOTAL.	VALUE.	EXPORT.	MINT.	TOTAL.	VALUE.
	fine ozs.	fine ozs.	fine ozs.	£ s. d.	fine ozs.	fine ozs.	fine ozs.	£ s. d.	fine ozs.	fine ozs.	fine ozs.	£ s. d.
JANUARY	24,206·18	103,144·78	127,350·96	540,952 9 10½	17,463·20	102,034·66	119,497·86	507,594 12 10¾	10,697·39	95,672·55	106,369·94	451,830 15 8½
FEBRUARY	25,506·60	85,528·41	111,035·01	471,646 14 10½	22,047·52	84,990·54	107,038·06	454,668 15 7	10,440·49	92,091·18	102,531·67	435,526 17 0
MARCH	16,694·17	100,781·15	117,475·32	499,003 8 10	12,296·29	93,266·30	105,562·59	448,401 7 7¼	408·28	92,596·60	93,004·88	395,059 12 4½
1st January to 31st March ...	66,406·95	289,454·34	355,861·29	1,511,602 13 6½	51,807·01	280,291·50	332,098·51	1,410,664 16 1	21,546·16	280,360·33	301,906·49	1,282,417 5 1
APRIL	18,825·54	106,422·32	125,247·86	532,019 1 10	20,455·25	91,791·17	112,246·42	476,792 9 8½	10,698·58	99,707·68	110,406·26	468,975 19 7¾
MAY	22,175·53	105,608·31	127,783·84	542,791 5 0½	22,076·16	88,952·30	111,028·46	471,618 18 5	9,288·33	98,104·59	107,392·92	456,176 2 6½
JUNE	14,297·96	106,390·61	120,688·57	512,652 9 2¼	10,523·62	106,463·67	116,987·29	496,930 8 5	1,214·05	106,929·69	108,143·74	459,365 8 2¾
1st January to 30th June ...	121,705·98	607,875·58	729,581·56	3,099,065 9 7	104,862·04	567,498·64	672,360·68	2,856,006 12 7½	42,747·12	585,102·29	627,849·41	2,666,934 15 6
JULY	18,038·08	105,752·04	123,790·12	525,827 0 1½	15,333·44	97,387·22	112,720·66	478,806 18 7	8,802·06	96,837·59	105,639·65	448,728 14 2½
AUGUST	17,969·46	98,431·56	116,401·02	494,440 2 1¼	11,520·89	102,476·79	113,997·68	484,231 7 3¾	7,262·43	101,377·45	108,639·88	461,472 17 6½
SEPTEMBER	13,138·22	111,093·68	124,231·90	527,703 11 4½	5,010·61	114,615·06	119,625·67	508,137 10 11¼	1,580·45	109,525·78	111,106·23	471,949 5 4
1st January to 30th September	170,851·74	923,152·86	1,094,004·60	4,647,036 3 2¼	136,726·98	881,977·71	1,018,704·69	4,327,182 9 5½	60,392·06	892,843·11	953 235·17	4,049,085 12 7
OCTOBER	21,910·77	101,183·29	123,094·06	522,870 6 7½	10,664·43	106,732·86	117,397·29	498,671 19 9¾	10,288·58	95,977·50	106,266·08	451,389 12
NOVEMBER	27,279·79	99,341·66	126,621·45	537,853 14 7¾	9,761·68	108,646·16	118,407·84	502,964 10 8¼	8,065·39	99,154·00	107,219·39	455,439 0 4¾
DECEMBER	13,928·04	112,983·87	126,911·91	539,087 10 6½	3,269·19	113,088·51	116,357·70	494,256 1 10¼	4,831·09	111,106·26	115,937·35	492,470 11 2¼
Total	233,970·34	1,236,661·68	1,470,632·02	6,246,847 15 0	160,422·28	1,210,445·24	1,370,867·52	5,823,075 1 9¾	83,577·12	1,199,080·87	1,282,657·99	5,448,384 16 5¾

TABLE

TOTAL OUTPUT OF GOLD BULLION ENTERED FOR EXPORT, AND RECEIVED AT THE PERTH BRANCH OF THE MINT, AND QUANTITY OBTAINED EACH YEAR FROM THE RESPECTIVE

Year.	KIMBERLEY.			PILBARA.			*a* WEST PILBARA.			ASHBURTON.		
	Export.	Mint.	Total.	Export.	Mint.	Total.	Export.	Mint.	Total.	Export.	Mint.	Total.
	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.
1886 ...	270·17	...	270·17	...	...	...	...	...	...	...	...	...
1887 ...	4,359·37	...	4,359·37	...	...	...	...	...	...	...	...	...
1888 ...	3,124·82	...	3,124·82	...	...	...	...	...	...	...	...	...
1889 ...	2,204·28	...	2,204·28	9,992·63	...	9,992·63	...	...	...	...	...	...
1890 ...	4,002·42	...	4,002·42	14,363·01	...	14,363·01	...	...	...	...	...	...
1891 ...	2,415·07	...	2,415·07	10,623·32	...	10,623·32	...	...	...	750·31	...	750·31
1892 ...	974·08	...	974·08	11,533·84	...	11,533·84	...	...	...	·63	...	·63
1893 ...	1,450·77	...	1,450·77	10,465·43	...	10,465·43	...	...	...	418·43	...	418·43
1894 ...	526·59	...	526·59	14,541·20	...	14,541·20	...	...	...	255·20	...	255·20
1895 ...	784·27	...	784·27	17,464·65	...	17,464·65	...	...	...	483·76	...	483·76
1896 ...	797·85	...	797·85	10,565·27	...	10,565·27	...	...	...	598·64	...	598·64
1897 ...	495·67	...	495·67	10,695·67	...	10,695·67	...	...	...	928·75	...	928·75
1898 ...	257·54	...	257·54	10,433·27	...	10,433·27	1,814·48	...	1,814·48	402·46	...	402·46
1899 ...	728·52	275·94	1,004·46	17,888·69	473·96	18,362·65	1,749·39	...	1,749·39	214·26	252·10	466·36
1900 ...	29·16	576·14	605·30	8,629·83	6,703·99	15,333·82	522·76	122·85	645·61	44·82	424·27	469·09
1901 ...	...	601·26	601·26	36·68	10,223·75	10,260·43	78·38	357·46	435·84	7·70	50·24	57·94
1902 ...	1·48	378·02	379·50	...	9,199·50	9,199·50	...	2,822·20	2,822·20	..	...	...
1903 ...	...	433·71	433·71	2·26	12,049·52	12,051·78	...	5,493·23	5,493·23	...	114·67	114·67
1904 ...	...	31·51	31·51	...	6,931·27	6,931·27	...	4,320·82	4,320·82	...	125·96	125·96
1905 ...	...	545·95	545·95	48·33	13,353·49	13,401·82	...	1,164·92	1,164·92	...	42·05	42·05
1906 ...	...	647·77	647·77	...	4,956·14	4,956·14	...	755·35	755·35	...	138·84	138·84
1907 ...	...	362·06	362·06	...	4,130·48	4,130·48	...	332·30	332·30	...	41·85	41·85
1908 ...	...	338·00	338·00	...	8,172·26	8,172·26	...	1,076·68	1,076·68	...	45·87	45·87
1909 ...	...	168·95	168·95	...	5,529·19	5,529·19	...	1,396·22	1,396·22	...	228·16	228·16
1910 ...	...	487·25	487·25	...	5,894·32	5,894·32	63·66	1,387·66	1,451·32	...	173·06	173·06
1911 ...	...	148·53	148·53	...	4,874·00	4,874·00	58·00	819·35	877·35	...	270·68	270·68
1912 ...	...	294·55	294·55	...	6,274·04	6,274·04	...	747·34	747·34	...	38·73	38·73
Total ...	**22,422·06**	**5,289·64**	**27,711·70**	**147,284·08**	**98,765·91**	**246,049·99**	**4,286·67**	**20,796·38**	**25,083·05**	**4,104·96**	**1,946·48**	**6,051·44**

Year.	*d* YALGOO.			*c* MT. MARGARET.			*e* NORTH COOLGARDIE.			*f* BROAD ARROW.		
	Export.	Mint.	Total.	Export.	Mint.	Total.	Export.	Mint.	Total.	Export.	Mint.	Total.
	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.
1886 ...	...	...	...	...	...	...	...	...	...	...	...	...
1887 ...	...	...	...	...	...	...	...	...	...	...	...	...
1888 ...	...	...	...	...	...	...	...	...	...	...	...	...
1889 ...	...	...	...	...	...	...	...	...	...	...	...	...
1890 ...	...	...	...	...	...	...	...	...	...	...	...	...
1891 ...	...	...	...	...	...	...	...	...	...	...	...	...
1892 ...	...	...	...	...	...	...	...	...	...	...	...	...
1893 ...	...	...	...	...	...	...	...	...	...	...	...	...
1894 ...	...	...	...	...	...	...	...	...	...	...	...	...
1895 ...	...	...	...	...	...	...	...	...	...	...	...	...
1896 ...	...	...	...	...	...	...	15,351·71	...	15,351·71	...	...	...
1897 ...	1,819·81	...	1,819·81	7,770·22	...	7,770·22	66,697·57	...	66,697·57	3,720·87	...	3,720·87
1898 ...	3,360·44	...	3,360·44	38,706·19	...	38,706·19	63,181·09	...	63,181·09	22,035·17	...	22,035·17
1899 ...	5,089·83	4,643·00	9,732·83	58,064·19	15,128·98	73,193·17	54,489·26	40,059·43	94,548·69	32,224·04	7,607·18	39,831·22
1900 ...	462·55	7,918·53	8,381·08	65,998·38	60,607·45	126,605·83	15,660·11	79,340·01	95,000·12	29,955·07	12,860·80	42,815·87
1901 ...	6·80	8,330·42	8,337·22	65,352·46	114,840·17	180,192·63	6,620·82	122,806·58	129,427·40	9,313·50	17,066·09	26,379·59
1902 ...	483·32	4,396·91	4,880·23	61,846·01	124,306·49	186,152·50	4,064·18	156,856·06	160,920·24	2,128·49	13,665·52	15,794·01
1903 ...	47·08	1,430·59	1,477·67	65,416·09	125,437·19	190,853·28	1,348·74	167,153·90	168,502·64	5,201·12	18,245·41	23,446·53
1904 ...	...	2,796·23	2,796·23	63,180·89	119,889·93	183,070·82	1,614·64	139,518·37	141,133·01	318·83	20,660·78	20,979·61
1905 ...	76·75	4,549·25	4,626·00	34,949·75	153,203·05	188,152·80	1,193·71	145,615·47	146,809·18	603·66	15,300·58	15,904·24
1906 ...	...	4,833·17	4,833·17	21,869·88	137,022·23	158,892·11	1,140·45	107,890·76	109,031·21	1,245·75	16,841·70	18,087·45
1907 ...	...	3,199·60	3,199·60	23,989·43	154,059·92	178,049·35	13,240·87	72,701·05	85,941·92	4,292·34	13,610·81	17,903·15
1908 ...	...	456·43	456·43	19,324·02	147,879·90	167,203·92	6,701·28	76,700·77	83,402·05	3,613·64	7,946·35	11,559·99
1909 ...	...	626·80	626·80	24,123·15	135,914·94	160,038.09	6,389·19	66,631·79	73,020·98	6,711·37	4,863·50	11,574·87
1910 ...	...	725·79	725·79	28,507·31	131,976·01	160,483·32	1,889·24	60,886·71	62,775·95	...	321·40	321·40
1911 ...	...	294·80	294·80	21,302·54	131,280·97	152,583·51	209·17	60,270·42	60,479·59	176·57	280·54	457·11
1912 ...	...	1,169·18	1,169·18	4.835·73	101,353·79	106,189·52	53·68	49,946·08	49,999·76	...	4·33	4·33
Total ...	**11,346·58**	**45,420·70**	**56,767·28**	**605,236·24**	**1,652,901·02**	**2,258,137·26**	**259,845·71**	**1,346,377·40**	**1,606,223·11**	**121,540·42**	**149,274·99**	**270,815·41**

Year.	*h* DUNDAS.			*i* PHILLIPS RIVER.			¶ DONNYBROOK.			STATE GENERALLY.		
	Export.	Mint.	Total.	Export.	Mint.	Total.	Export.	Mint.	Total.	Export.	Mint.	Total.
	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.
1886 ...	...	...	...	...	...	...	...	...	...	...	...	...
1887 ...	...	...	...	...	...	...	...	...	...	...	...	...
1888 ...	...	...	...	...	...	...	...	...	...	...	...	...
1889 ...	...	...	...	...	...	...	...	...	...	...	...	...
1890 ...	...	...	...	...	...	...	...	...	...	...	...	...
1891 ...	...	...	...	...	...	...	...	...	...	...	...	...
1892 ...	...	...	...	...	...	...	...	...	...	...	...	...
1893 ...	132·37	...	132·37	...	...	...	...	...	...	...	...	...
1894 ...	204·31	...	204·31	...	...	...	...	...	...	...	...	...
1895 ...	216·40	...	216·40	...	...	...	...	...	...	...	...	...
1896 ...	3,891·77	...	3,891·77	...	...	...	...	...	...	...	...	...
1897 ...	17,275·36	...	17,275·36	...	...	...	...	...	...	...	...	...
1898 ...	28,655·52	...	28,655·52	...	...	...	...	...	...	...	...	...
1899 ...	39,980·65	423·71	40,404·36	...	...	...	277·27	175·49	452·76	...	809·07	809·07
1900 ...	8,144·72	28,254·19	36,398·91	...	...	...	...	237·56	237·56	5,644·83	1,450·08	7,094·91
1901 ...	5,411·46	29,752·16	35,163·62	...	...	...	...	4·20	4·20	215·91	1,511·63	1,727·54
1902 ...	4,401·31	26,714·16	31,115·47	2,946·53	4,422·56	7,369·09	4·94	57·64	62·58	7·77	2,115·52	2,123·29
1903 ...	1,311·53	33,905·88	35,217·41	2,136·09	5,441·68	7,577·77	...	82·64	82·64	53·44	2,839·44	2,892·88
1904 ...	1,834·03	31,347·06	33,181·09	936·76	2,047·59	2,984·35	...	...	...	·86	1,344·25	1,345·11
1905 ...	1,324·48	27,411·31	28,735·79	2,060·46	1,458·44	3,518·90	...	...	...	70·41	1,515·58	1,585·99
1906 ...	1,111·18	20.198·62	21,309·80	945·65	1,439·03	2,384·68	...	...	...	284·38	763·15	1,047·53
1907 ...	...	22,830·71	22,830·71	4,043·86	1,514·90	5,558·76	...	...	...	799·48	285·47	1,084·95
1908 ...	...	41,203·39	41,203·39	969·00	3,631·02	4,600·02	...	...	...	15·91	1,953·56	1,969·47
1909 ...	...	35,894·72	35,894·72	4,025·81	3,605·75	7,631·56	...	..	..	46·78	455·34	502·12
1910 ...	...	43,260·55	43,260·55	3,271·89	5,031 60	8,303·49	...	...	...	48·67	222·89	271·56
1911 ...	...	48,361·14	48,361·14	1,374.96	4,241·05	5,616·01	...	...	...	209·03	129·01	338·04
1912 ...	...	38,373·40	38,373·40	...	3,292·05	3,292 05	...	...	...	687·32	142·72	830·04
Total ...	**113,895·09**	**427,931·00**	**541,826·09**	**22,711·01**	**36,125·67**	**58,836·68**	**282·21**	**557·53**	**839·74**	**8,084·79**	**15,537·71**	**23,622·50**

a Prior to 1st May, 1898, included with Pilbara. *d* Prior to 1st April, 1897, included with Murchison. *c* From 1st August, 1897.
e Prior to 1st May, 1896, included with Coolgardie. *f* From 1st September, 1897. *h* Prior to 1893 included with Yilgarn.
i Prior to 1902 included in State generally. ¶ Abolished, 4th March, 1908.

VI.

ROYAL MINT, FROM 1ST JANUARY, 1886, TO 31ST DECEMBER, 1912, SHOWING, IN FINE OUNCES, THE GOLDFIELDS, AND THE TOTAL ANNUAL VALUE.

Year.	*b* GASCOYNE.			*c* PEAK HILL			*c* EAST MURCHISON.			MURCHISON.		
	Export.	Mint.	Total.	Export.	Mint.	Total.	Export.	Mint.	Total.	Export.	Mint.	Total.
	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.
1886 ..	...	...	...	...	...	...	...	...	...	...	...	...
1887 ...	...	...	...	...	...	...	...	...	...	...	...	...
1888 ...	..	...	...	...	...	...	...	...	...	...	...	...
1889 ...	...	...	...	...	...	...	...	...	...	...	...	...
1890 ...	...	...	...	...	...	...	...	...	...	...	...	...
1891 ...	...	...	...	...	..	...	..	...	...	1,846·83	...	1,846·83
1892 ...	...	...	...	...	...	...	...	...	...	21,789·19	...	21,789·19
1893 ...	..	...	...	...	...	...	...	...	...	18,974·77	...	18,974·77
1894 ...	...	...	...	...	...	...	...	...	...	47,365·54	...	47,365·54
1895 ...	...	...	...	...	...	...	...	...	...	58,575·66	...	58,575·66
1896 ...	...	...	...	...	...	...	...	...	...	63,769·17	...	63,769·17
1897 ..	...	...	...	4,571·38	...	4,571·38	8,457·34	...	8,457·34	74,154·67	...	74,154·67
1898 ...	...	...	...	12,288·93	...	12,288·93	35,393·19	...	35,393·19	83,794·22	...	83,794·22
1899 ...	297·96	76·63	374·59	14,064·24	14,558·64	28,622·88	33,826·08	3,361·95	37,188·03	61,586·09	22,074·71	83,660·80
1900 ..	...	77·02	77·02	9,528·14	16,119·79	25,647·93	23,545·54	28,671·55	52,217·09	53,815·70	43,423·77	97,239·47
1901 ...	6·59	16·82	23·41	231·85	19,352·44	19,584·29	29,780·63	40,557·07	70,337·70	92,149·56	38,996·10	131,145·66
1902 ...	...	107·29	107·29	85·93	28,044·55	28,130·48	25,450·63	53,583·10	79,033·73	141,731·91	40,926·08	182,657·99
1903 ...	...	30·76	30·76	203·60	29,395·32	29,598·92	21,878·06	65,334·05	87,212·11	154,012·88	54,348·53	208,361·41
1904 ...	...	10·95	10·95	...	17,475·33	17,475·33	21,296·85	64,550·36	85,847·21	165,232·67	52,683·16	217,915·83
1905 ...	...	21·34	21·34	125·01	13,371·75	13,496·76	1,361·68	89,249·93	90,611·61	131,656·36	92,742·05	224,398·41
1906 ...	...	78·73	78·73	...	2,038·62	2,038·62	140·68	95,168·89	95,309·57	79,172·69	109,936·80	189,109·49
1907 ...	...	8·44	8·44	...	5,918·75	5,918·75	2,891·66	117,735·69	120,627·35	54,811·74	115,497·50	170,309·24
1908 ...	...	31·82	31·82	...	9,864·36	9,864·36	10,701·24	137,028·14	147,729·38	45,483·05	111,540·54	157,023·59
1909 ...	...	7·37	7·37	...	7,322·29	7,322·29	11,599·83	136,637·67	148,237·50	24,682·47	107,167·27	131,849·74
1910 ...	...	26·31	26·31	...	3,057·25	3,057·25	1,557·78	137,190·44	138,748·22	19,568·85	111,414·23	130,983·08
1911 ...	...	7·87	7·87	...	134·23	134·23	11·77	96,442·87	96,454·64	13,919·70	109,444·91	123,364·61
1912 ...	...	6·55	6·55	...	196·11	196·11	...	90,397·82	90,397·82	6,377·17	105,245 32	111,622·49
Total ...	304·55	507·90	812·45	41,099·08	166,849·43	207,948·51	227,892·96	1,155,909.53	1,383,802·49	1,414,470·89	1,115,440·97	2,529,911·86

Year.	*e* NORTH-EAST COOLGARDIE.			*e* EAST COOLGARDIE.			*g* COOLGARDIE.			YILGARN.		
	Export.	Mint.	Total.	Export.	Mint.	Total.	Export.	Mint.	Total.	Export.	Mint.	Total.
	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.
1886 ...	...	...	...	...	...	...	...	...	...	...	...	...
1887 ...	...	...	...	...	...	...	...	...	...	...	...	...
1888 ...	...	...	...	...	...	...	...	...	...	...	...	...
1889 ...	...	...	...	...	...	...	...	...	...	1,662·61	...	1,662·61
1890 ...	...	...	...	...	...	...	...	...	...	2,036·99	...	2,036·99
1891 ...	...	...	...	...	...	...	...	...	...	11,480·61	...	11,480·61
1892 ...	...	...	...	...	..	...	...	...	...	18,973·91	...	18,973·91
1893 ...	...	...	...	...	...	...	...	...	...	67,760·73	...	67,760·73
1894 ...	...	...	...	...	...	...	94,227·58	...	94,227·58	28,178·31	...	28,178·31
1895 ...	...	...	...	...	...	...	111,919·21	...	111,919·21	17,666·25	...	17,666·25
1896 ...	3,679·63	...	3,679·63	76,297·42	...	76,297·42	61,848·03	...	61,848·03	14,849·20	...	14,849·20
1897 ...	29,437·40	...	29,437·40	268,411·95	...	268,411·95	93,312·00	...	93,312·00	16,097·78	...	16,097·78
1898 ...	112,039·58	...	112,039·58	402,847·31	...	402,847·31	113,816·75	...	113,816·75	10,463·35	...	10,463·35
1899 ...	57,674·82	14,940·55	72,615·37	796,696·63	29,567·58	826,264·21	101,589·22	24,700·89	126,290·11	6,919·11	8,114·60	15,033·71
1900 ...	10,400·57	36,233·90	46,634·47	600,328·29	125,105·24	725,433·53	60,988·33	46,167·62	107,155·95	688·47	25,628·83	26,317·30
1901 ...	6,798·56	39,024·18	45,822·74	698,042·56	238,840·93	936,883·49	9,584·35	70,720·21	80,304·56	49·15	26,677·85	26,727·00
1902 ...	549·07	46,316·67	46,865·74	460,462·26	546,964·68	1,007,426·94	2,872·61	80,887·85	83,760·46	3·31	22,232·80	22,236·11
1903 ...	4,308·99	36,145·75	40,454·74	570,447·27	580,790·97	1,151,238·24	7,318·63	69,681·38	77,000·01	...	22,761·00	22,761·00
1904 ...	55·09	33,262·10	33,317·19	555,016·48	584,579·88	1,139,596·36	1,100·07	61,073·11	62,173·18	28·87	29,965·37	29,994·24
1905 ...	2,187·11	40,220·19	42,407·30	479,254·37	613,103·20	1,092,357·57	177·80	62,066·34	62,244·14	...	25,291 11	25,291·11
1906 ...	1,590·31	30,943·82	32,534·13	454,645·84	612,546·81	1,067,192·65	103·78	60,474·81	60,578·59	...	25,570·77	25,570·77
1907 ...	3,132·83	25,399·75	28,532·58	323,550·05	643,139·11	966,689·16	1,050·88	61,670·65	62,721·53	...	23,311·41	23,311·41
1908 ...	925·44	23,902·44	24,827·88	267,748·62	657,936·89	925,685·51	871·76	40,982·65	41,854·41	...	20,866·10	20,866·10
1909 ...	1,774·45	24,566·87	26,341·32	306,462·21	620,612·07	927,074·28	350·91	36,311·70	36,662·61	204·41	20,958·23	21,162·64
1910 ...	...	19,082·01	19,082·01	179,062 94	653,211·05	832,273·99	...	38,264·02	38,264·02	...	24,049·13	24,049·13
1911 ...	...	18,528·97	18.528·97	123,160·54	686,386·80	809,547·34	...	33,840·93	33,840·93	...	14,688·17	14,688·17
1912 ...	194·22	14,475·38	14,669·60	71,429·00	717,356·45	788,785·45	...	42,327·65	42,327·65	...	27,439·38	27,439 38
Total ...	234,748·07	403,042·58	637,790·65	6,633,863·74	7,310,141·66	13,944,005·40	661,131·91	729,169·81	1,390,301·72	197,033·06	317,554·75	514,587·81

Year.	GRAND TOTAL.					
	Export.	Mint.	Total.	Value.		
	fine ozs.	fine ozs.	fine ozs.	£	s.	d.
1886 ...	270·17	...	270·17	1,147	12	2¼
1887 ...	4,359·37	...	4,359·37	18,517	8	6
1888 ...	3,124·82	...	3,124·82	13,273	7	10¾
1889 ...	13,859·52	...	13,859·52	58,871	9	11¼
1890 ...	20,402·42	...	20,402·42	86,663	19	5
1891 ...	27,116·14	...	27,116·14	115,182	0	10½
1892 ...	53,271·65	...	53,271·65	226,283	11	8
1893 ...	99,202·50	...	99,202·50	421,385	8	8½
1894 ...	185,298·73	...	185,298·73	787,098	19	6
1895 ...	207,110·20	...	207,110·20	879,748	4	2¼
1896 ...	251,618·69	...	251,618·69	1,068,808	5	2
1897 ...	603,846·44	...	603,846·44	2,564,976	12	9¼
1898 ...	939,489·49	...	939,489·49	3,990,697	13	10
1899 ...	1,283,360·25	187,244·41	1,470,604·66	6,246,731	10	7¾
1900 ...	894,387·27	519,923·59	1,414,310·86	6,007,610	13	4½
1901 ...	923,686·96	779,729·56	1,703,416·52	7,235,653	9	1
1902 ...	707,039·75	1,163,997·60	1,871,037·35	7,947,661	9	7¾
1903 ...	833,685·78	1,231,115·62	2,064,801·40	8,770,718	17	0¼
1904 ...	810,616·04	1,172,614·03	1,983,230·07	8,424,225	17	3¾
1905 ...	655,089·88	1,300,226·00	1,955,315·88	8,305,653	18	5¼
1906 ...	562,250·59	1,232,296·01	1,794,546·60	7,622,749	8	7
1907 ...	431,803·14	1,265,750·45	1,697,553·59	7,210,749	6	2¾
1908 ...	356,353·96	1,291,557·17	1,647,911·13	6,999,881	10	10½
1909 ...	386,370·58	1,208,898·83	1,595,269·41	6,776,273	14	7¼
1910 ...	233,970·34	1,236,661·68	1,470,632·02	6,246,847	15	0
1911 ...	160,422·28	1,210,445·24	1,370,867·52	5,823,075		9¾
1912 ...	83,577·12	1,199,080·87	1,282,657 99	5,448,384	16	5¾
TOTAL ...	10,731,584·08	14,999,541·06	25,731,125·14	109,298,872	3	9½

b. Prior to March, 1899, included with Ashburton. *c*. From 1st August, 1897. *e*. Prior to 1st May, 1896, included with Coolgardie. *g*. Declared 5th April, 1894, to which date included with Yilgarn.

TABLE VII.

MONTHLY RETURN OF GOLD, CONTAINED IN BULLION, FURNACE PRODUCTS, AND ORE, ENTERED FOR EXPORT DURING 1912.

MONTH.	UNITED KINGDOM.			VICTORIA.			U.S. OF AMERICA.			GERMANY.			TOTALS.			Minted Gold Exported.*
	Bullion.	Furnace Products.	Ore.	Bullion.	Furnace Products.	Ore.	Bullion.	Furnace Products.	Ore.	Bullion.	Furnace Products.	Ore.	Bullion.	Furnace Products.	Ore.	
1912.	Fine ozs.	Estimated fine ozs.	Estimated fine ozs.	Fine ozs.	Estimated fine ozs.	Estimated fine ozs.	Fine ozs.	Estimated fine ozs.	Estimated fine ozs.	Fine ozs.	Estimated fine ozs.	Estimated fine ozs.	Fine ozs.	Estimated fine ozs.	Estimated fine ozs.	Fine ozs.
January ...	8,354·01	1,748·07	5·51	588·55	...	...	...	...	1·25	...	...	...	8,942·56	1,748·07	6·76	† 71·55 14,221·50
February ...	8,863·85	536·77	4·03	1,035·84	...	...	...	...	...	...	...	...	9,899·69	536·77	4·03	13,052·40
March ..	...	406·22	2·06	...	...	...	..	...	...	...	...	...	...	406·22	2·06	† 72·35 18,938·15
April ...	8,856·26	924·18	...	918·14	...	...	...	...	...	...	...	...	9,774·40	924·18	...	† 20·00 11,890·19
May ...	7,440·92	9·2 81	...	894·60	...	...	...	...	...	...	...	...	8,335·52	952·81	...	35,578·15
June ...	...	734·92	126·00	353·13	...	...	...	...	...	...	...	...	353·13	734·92	126·00	† 69·52 14,230·48
July ...	7,207·38	1,312·18	...	282·50	...	...	...	...	...	...	...	...	7,489·88	1,312·18	...	† 110·12 9,691·66
August ...	6,284·30	389·58	...	588·55	...	...	...	...	...	...	...	...	6,872·85	389·58	...	13,020 50
September	...	1,132 31	4·38	423·76	...	...	...	...	...	...	20·00	...	423·76	1,152·31	4·38	19,348·13
October ...	8,016·99	1,135·08	857·55	258 96	...	...	...	...	...	...	20·00	...	8,275·95	1,155 08	857·55	† 19·25 25,050·44
November...	7,030·81	676·82	4·63	353·13	...	...	...	...	...	...	...	...	7,383·94	676·82	4·63	† 102·21 11,906·43
December...	3,640·39	434·15	4·80	565·01	...	...	...	186·74	...	...	...	...	4,205·40	620·89	4·80	11,851·28
TOTALS ...	65,694·91	10,383·09	1,008·96	6,262·17	...	...	...	186·74	1·25	...	40·00	...	71,957·08	10,609·83	1,010·21	199,244 31

* When considering the total production of gold for this State, these amounts must be disregarded, having been already recorded in the total receipts of gold at the Mint.
† To United Kingdom. All the other amounts in this column were fine bars of minted gold exported to India.

TABLE VIII.

RETURN OF GOLD BULLION RECEIVED AT THE PERTH BRANCH OF THE ROYAL MINT FROM MAY, 1899, TO THE 31ST DECEMBER, 1912, SHOWING IN GROSS OUNCES THE QUANTITY OBTAINED FROM THE RESPECTIVE GOLDFIELDS AND OTHER COUNTRIES, AND THE ACTUAL VALUE THEREOF.

Year.	Kimberley.	Pilbara.	West Pilbara.	Ashburton.	Gascoyne.	Peak Hill.	East Murchison.	Murchison.	Yalgoo.	Mt. Margaret.	North Coolgardie.	Broad Arrow.	North-East Coolgardie.
	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.
1899	308·45	529·80	...	281·80	85·65	16,274·00	3,758·07	24,675·64	5,190·05	16,911·54	44,779·38	8,503·50	16,700·90
1900	644·02	7,493·88	137·33	474·26	86·10	18,019·08	32,049·74	48,540·12	8,851·52	67,748·45	88,688·14	14,376·10	40,503·12
1901	663·37	11,279·93	394·38	55·42	18·56	21,351·67	44,746·88	43,024·65	9,191·01	126,703·91	135,493·31	18,829·13	43,055·63
1902	439·93	10,706·03	3,284·37	...	124·86	32,637·17	62,357·98	47,628·18	5,116·94	144,663·12	182,543·06	15,903·42	53,901·58
1903	511·75	14,217·53	6,481·58	135·30	36·29	34,684·27	77,089·29	64,127·18	1,687·99	148,006·49	197,229·08	21,528·20	42,649·25
1904	37·69	8,293·58	5,170·06	150·73	13·10	20,909·99	77,237·31	63,037·71	3,345·82	143,453·51	166,939·82	24,721·53	39,799·55
1905	656·34	16,053·42	1,400·46	50·54	25·65	16,075·36	107,295·17	111,493·34	5,469·06	184,178·87	175,057·14	18,394·17	48,352·22
1906	785·23	6,007·79	915·63	168·30	95·43	2,471·21	115,363·22	133,264·79	5,919·37	166,097·63	130,784·60	20,415·43	37,509·91
1907	431·72	4,924·97	396·22	49·89	10·06	7,057·22	140,382·15	137,713·43	3,815·06	183,693·29	86,685·09	16,228·85	30,285·39
1908	400·19	9,676·11	1,292·97	54·32	37·68	11,679·58	162,243·76	132,066·00	2,625·14	175,092·47	90,815·08	9,408·64	28,300·91
1909	203·59	6,662·82	1,682·49	274·93	8·89	8,823·58	164,652·43	129,139·74	755·31	163,781·55	80,293·29	5,860·66	29,603·84
1910	586·44	7,094·46	1,670·20	208·31	31·67	3,679·72	165,123·37	134,098 94	873·58	158,847·24	73,283·66	386·84	22,967·23
1911	183·78	6,033·33	1,014·60	334·38	9·78	165·36	119,267·86	135,342·96	363·85	162,319·77	74,536·34	346·78	22,917·38
1912	361·11	7,674·55	912·60	47·77	8·09	237·96	110,585·25	128,679·43	1,410·49	124,123·10	61,018·13	5·32	17,705·86
Total	**6,213·61**	**116,648·20**	**24,752·89**	**2,285·95**	**591·81**	**194,066·17**	**1,382,152·48**	**1,332,832·11**	**54,615·19**	**1,965,620 94**	**1,588,146·12**	**174,908·57**	**474,252·77**

Year.	East Coolgardie.	Coolgardie.	Yilgarn.	Dundas.	* Phillips River.	Donnybrook. †	State generally.	TOTAL. Western Australia. Quantity.	Western Australia. Actual Value.	Other Countries. Quantity.	Other Countries. Actual Value.	GRAND TOTAL. Quantity.	Grand Total. Actual Value.
	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	£ s. d.	ozs.	£ s. d.	ozs.	£ s. d.
1899	33,051·33	27,611·24	9,070·70	473·63	...	196·17	904·39	**209,306·24**	**762,546 11 6**	103·46	336 18 3	209,409·70	762,883 9 9
1900	139,845·60	51,607·26	28,648·51	31,583·20	...	265·55	1,620·93	**581,182·91**	**2,096,212 14 2**	17·49	44 15 7	581,200·40	2,096,257 9 9
1901	263,514·75	78,026·07	29,433·84	32,825·75	...	4·64	1,667·79	**860,280·69**	**3,033,311 0 4**	92·25	297 5 8	860,372·94	3,033,608 6 0
1902	636,536·52	94,134·17	25,873·68	31,088·91	5,146·80	67·08	2,461·98	**1,354,615·78**	**4,791,303 18 1**	16·27	38 10 2	1,354,632·05	4,791,342 8 3
1903	685,289·82	82,218·79	26,856·28	40,006·39	6,420·79	97·52	3,350·32	**1,452,624·11**	**5,139,852 11 9**	294·78	703 14 10	1,452,918·89	5,140,556 6 7
1904	699,475·35	73,076·66	35,854·87	37,508·11	2,450·03	...	1,608·47	**1,403,083·89**	**4,955,870 9 0**	263·05	614 11 9	1,403,346·94	4,956,485 0 9
1905	737,065·14	74,615·36	30,404·65	32,953·56	1,753·32	...	1,821·99	**1,563,115·76**	**5,475,841 2 10**	525·80	1,491 0 7	1,563,641·56	5,477,332 3 5
1906	742,525·99	73,307·24	30,996·76	24,484·65	1,744·38	...	925·10	**1,493,782·66**	**5,330,245 12 1**	413·86	974 16 0	1,494,196·52	5,331,220 8 1
1907	766,846·83	73,532·99	27,795·35	27,222·21	1,806·30	...	340·39	**1,509,217·41**	**5,416,812 0 7**	640·51	1,663 4 3	1,509,857·92	5,418,475 4 10
1908	779,009·10	48,524·18	22,835·58	48,785·54	4,299·19	...	2,080·42	**1,529,226·86**	**5,386,858 15 8**	1,313·84	3,885 2 3	1,530,540·70	5,390,743 17 11
1909	747,856·04	43,756·68	25,255·30	43,254·22	4,345·04	...	548·71	**1,456,759·11**	**5,143,035 17 1**	882·56	1,109 1 3	1,457,641·67	5,144,145 3 8
1910	786,209·41	46,054·82	28,945·68	52,068·70	6,056·08	...	268·26	**1,488,454 61**	**5,163,100 17 11**	2,251·71	1,670 11 7	1,490,706·32	5,164,771 9 6
1911	848,725·06	41,861·54	18,190·20	59,831·49	5,242·16	...	159·90	**1,496,846·52**	**5,143,795 10 5**	452·22	915 19 4	1,497,298·74	5,144,711 9 9
1912	876,900·05	51,732·78	33,429·29	52,220·76	4,026·32	...	174·26	**1,471,253·12**	**5,106,466 9 1**	641·47	1,527 8 0	1,471,894·59	5,107,993 17 1
Total ...	**8,742,850·99**	**860,059·78**	**373,590·69**	**514,307·12**	**43,290·41**	**630·96**	**17,932·91**	**17,869,749·67**	**62,945,253 10 6**	7,909·27	15,272 19 6	17,877,658·94	62,960,526 10 0

* Prior to 1902 included in State generally.

† Abolished 4th March, 1908.

PART II.—MINERALS OTHER THAN GOLD.

TABLE IX.

GENERAL RETURN OF ORE AND MINERALS, OTHER THAN GOLD, SHOWING THE QUANTITY PRODUCED AND THE VALUE THEREOF, AS REPORTED TO THE MINES DEPARTMENT FROM THE RESPECTIVE GOLDFIELDS AND MINERAL FIELDS, DURING 1912, AND PREVIOUS YEARS.

Period.	BLACK TIN.											
	PILBARA GOLDFIELD—Marble Bar District.				GREENBUSHES MINERAL FIELD.				TOTAL.			
	Quantity.			Value.	Quantity.			Value.	Quantity.			Value.
	Lode.	Stream.	Total.		Lode.	Stream.	Total.		Lode.	Stream.	Total.	
	tons.	tons.	tons.	£	tons.	tons.	tons.	£	tons.	tons.	tons.	£
Previous to 1899 ...	...	75·45	75·45	4,419	...	1,590·33	1,590·33	66,108	...	1,665·78	1,665·78	70,527
1899	...	57·50	57·50	3,612	...	277·32	277·32	21,658	...	334·82	334·82	25 270
1900	...	387·87	387·87	27,174	...	435·62	435·62	29,528	...	823·49	823·49	56,702
1901	...	412·98	412·98	21,148	...	321·34	321·34	18,852	...	734·32	734·32	40.000
1902	...	216·35	216·35	15,103	...	403·21	403·21	24,680	...	619·56	619·56	39,783
1903	...	292·11	292·11	21,528	...	524·94	524·94	34,362	...	817·05	817·05	55,890
1904	...	320·86	320·86	24,355	...	533·64	533·64	34,462	...	854·50	854·50	58,817
1905	...	435·74	435·74	33,880	...	643·52	643·52	52,960	...	1,079·26	1,079·26	86,840
1906	36·59	675·06	711·65	78,449	26·18	757·10	783·28	79,195	62·77	1,432·16	1,494·93	157,644
1907	104·13	749·56	853·69	85,603	40·40	729·60	770·00	73,045	144·53	1,479·16	1,623·69	158,648
1908	31·00	372·03	403·03	30,636	13·90	562·43	576·33	41,046	44·90	934·46	979·36	71,682
1909	81·75	212·21	293·96	22,431	44·40	414·35	458·75	34,786	126·15	*628·08	*754·23	†57,335
1910	33·75	119·75	153·50	12,899	25·06	292·65	317·71	27,974	58·81	412·40	471·21	40,873
1911	27·35	121·30	148·65	16,064	27·82	383·30	411·12	44,638	55·17	504·60	559·77	60,702
1912	10·25	113·13	123·38	14,993	14·90	415·55	430·45	50,166	25·15	528·68	553·83	65,159
Total ...	**324·82**	**4,561·90**	**4,886·72**	**412,294**	**192·66**	**8,284·90**	**8,477·56**	**633,460**	**517·48**	**12,848·32**	**13,365·80**	**1,045,872**

* Includes tons 1·52, the produce of Cue District. † Includes £118, value of tons 1·52, the produce of Cue District.

Period.	TANTALITE.												PYRITIC ORE.	
	PILBARA GOLDFIELD—Marble Bar D.				GREENBUSHES MINERAL FIELD.				TOTAL.				Mt. Morgans D.	
	Quantity.			Value.	Quantity.			Value.	Quantity.			Value.	Quantity.	†Value.
	Lode.	Stream.	Total.		Lode.	Stream.	Total.		Lode.	Stream.	Total.			
	tons.	tons.	tons.	£	tons.	tons.	tons.	£	tons.	tons.	tons.	£	tons.	£
Previous to 1899	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1899	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1900	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1901	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1902	...	...	...	...	...	...	...	...	..	...	...	...	...	...
1903	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1904	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1905	...	70·95	70·95	8,925	...	2·34	2·34	1,590	...	73·29	73·29	10,515	...	...
1906	1·80	12·85	14·65	2,644	...	...	...	...	1·80	12·85	14·65	2,644	...	...
1907	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1908	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1909	·45	...	·45	113	...	·85	·85	214	·45	·85	1·30	327	...	...
1910	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1911	...	...	...	...	...	...	...	...	...	...	...	...	*9,938·92	*3,529
1912	...	...	...	...	...	...	...	...	...	...	...	...	*7,625·80	*2,543
Total ...	**2·25**	**83·80**	**86·05**	**11,682**	...	**3·19**	**3·19**	**1,804**	**2·25**	**86·99**	**89·24**	**13,486**	**17,564·72**	**6,072**

*Includes tons 3,381·15, valued at £1,184, produced in 1910, but reported in 1911. †Represents the value of the sulphur only, the copper contents not having been treated yet.

Period.	COPPER ORE.															
	PILBARA GF.				WEST PILBARA GF.		ASHBURTON GF.		E. MURCHISON GF.		MURCHISON GF.				YALGOO GF.	
	Marble Bar D.		Nullagine D.						Lawlers D.		Nannine D.		Day Dawn D.			
	Quantity.	Value.	Qu'ntity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Qu'ntity.	Value.
	tons.	£	tons.	£	tons.	£	tons.	£	tons.	£	tons.	£	tons.	£	tons.	£
Previous to 1899 ...	...	...	...	...	7,018·00	55,270	...	...	...	...	...	...	...	...	...	...
1899 ...	...	...	...	...	2,555·00	29,478	...	...	...	...	...	...	...	...	...	...
1900 ...	...	...	...	...	1,605·00	12,139	...	...	...	...	...	...	5·15	91	...	...
1901 ...	...	...	...	...	1,162·00	15,891	...	...	...	...	...	...	10·50	76	...	...
1902 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1903 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1904 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1905 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1906 ...	...	...	...	...	...	...	...	...	...	...	133·50	2,816	...	...	13·91	91
1907 ...	7·77	190	...	...	3,365·50	63,548	...	...	...	...	...	...	31·71	274	10·00	130
1908 ...	...	...	...	...	1,486·00	17,691	188·00	2,311	6·77	69	...	...	...	...	9·50	97
1909 ...	...	...	...	...	7,135·50	62,447	10·75	259	...	...	608·00	2,823	...	...	...	...
1910 ...	...	...	...	...	8,479·80	64,861	...	...	...	...	...	...	...	...	...	...
1911 ...	25·10	196	5·00	120	9,082·02	69,140	..	...	...	...	...	...	...	...	...	...
1912 ...	...	..	...	...	12,284·02	104,289	...	...	...	...	...	...	4·80	54	...	...
Total ...	**32·87**	**386**	**5·00**	**120**	**54,172·84**	**494,754**	**198·75**	**2,570**	**6·77**	**69**	**741·50**	**5,639**	**52·16**	**495**	**33·41**	**318**

TABLE IX.—*Minerals other than Gold, etc.*—continued.

Period.	COPPER ORE—*continued.*															
	NORTHAMPTON MF.		YANDANOOKA MF.		MT. MARGARET GOLDFIELD.				NORTH COOLGARDIE GOLDFIELD.		EAST COOLGARDIE GOLDFIELD.		PHILLIPS RIVER GOLDFIELD.		STATE GENERALLY.	
					Mt. Morgans District.		Mt. Margaret District.		Menzies District.		E. Coolgardie D.					
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	tons.	£	tons.	£	tons.	£	tons.	£	tons.	£	tons.	£	tons.	£	tons.	£
Previous to 1899	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...
1899 ...	98·00	1,715	38·00	407	273·00	4,338	...	...	...	...	...	...	...	...	...	...
1900 ...	...	...	...	...	4,539·00	30,718	...	...	...	...	...	...	34·00	725	...	...
1901 ...	38·50	277	...	...	7,660·00	40,738	...	...	...	...	...	...	1,089·14	12,918	...	...
1902 ...	...	...	...	...	1,954·00	6,852	...	...	...	...	...	...	308·25	1,238	...	...
1903 ...	...	...	...	...	18,965·00	45,557	...	...	...	...	...	...	1,561·33	10,984	...	...
1904 ...	...	...	...	...	500·00	900	...	...	...	...	...	...	3,468·89	24,280	...	...
1905 ...	...	...	...	...	60·00	674	...	...	...	...	...	...	2,329·04	15,592	...	...
1906 ...	...	...	...	...	4,361·05	21,934	...	...	4·70	33	...	...	2,885·00	25,270	13·50	193
1907 ...	...	...	...	...	5,141·52	58,888	2·85	26	1·42	18	...	...	10,414·57	57,273	3·08	40
1908 ...	...	...	133·55	1,482	4,404·10	20,221	...	...	...	...	50·67	330	2,015·71	9,233	...	...
1909 ...	...	...	...	...	...	...	...	...	...	...	...	...	7,330·70	29,815	...	...
1910 ...	...	...	...	...	...	...	...	...	...	...	...	...	25,871·65	96,745	...	...
1911 ...	...	...	...	...	...	...	...	...	...	...	...	...	13,563·68	46,862	...	...
1912 ...	...	...	...	...	...	...	...	...	...	...	...	...	1,318·38	15,815	...	...
Total	**136·50**	**1,992**	**171·55**	**1,889**	**47,857·67**	**230,820**	**2·85**	**26**	**6·12**	**51**	**50·67**	**330**	**72,190·34**	**346,750**	**16·58**	**233**

Period..	COPPER ORE.		IRONSTONE.								LEAD ORE.		SILVER LEAD ORE	
	TOTAL.		W. PILBARA GF.		E. COOLGARDIE GF. E. Coolgardie D.		STATE GENERALLY.		TOTAL.		NORTHAMPTON MF.		ASHBURTON GF.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value
	tons.	£	tons.	£	tons.	£	tons.	£	tons.	£	tons.	£	tons.	£
Previous to 1899	7,018·00	55,270	100·00	300	...	...	...	...	100·00	300	...	...	...	...
1899	2,964·00	35,938	...	...	...	...	12,852·00	8,939	12,852·00	8,939	82·75	912	...	...
1900	6,183·15	43,673	...	...	...	...	12,251·00	9,258	12,251·00	9,258	268·00	533	...	...
1901	9,960·14	69,900	...	...	450·00	247	20,119·00	12,999	20,569·00	13,246	...	...	21·05	152
1902	2,262·25	8,090	...	...	...	...	4,800·00	2,040	4,800·00	2,040	...	...	35·85	277
1903	20,526·33	56,541	...	...	...	...	220·00	88	220·00	88	...	...	...	...
1904	3,968·89	25,180	...	...	...	...	1,441·50	577	1,441·50	577	...	...	...	...
1905	2,389·04	16,266	...	...	...	...	3,212·60	1,285	3,212·60	1,285	...	...	...	...
1906	7,411·66	50,337	...	...	...	...	1,279·87	512	1,279·87	512	...	...	...	...
1907	18,978·42	180,387	...	...	...	...	1,093·53	438	1,093·53	438	10·00	128	...	...
1908	8,294·30	51,434	...	...	...	...	...	...	...	...	57·00	461	727·25	6,914
1909	15,084·95	95,344	...	...	...	...	...	...	...	...	...	...	440·00	3,520
1910	34,351·45	161,606	...	...	...	...	† 10·50	† 12	10·50	12	185·10	1,777	...	...
1911	22,675·80	116,318	...	...	...	...	...	...	...	...	8,194·76	17,663	...	...
1912	13,607·20	120,158	...	...	...	...	...	...	...	...	11,098·50	24,412	...	...
Total	**175,675·58**	**1,086,442**	**100·00**	**300**	**450·00**	**247**	**57,280·00**	**36,148**	**57,830·00**	**36,695**	**19,896·11**	**45,886**	**1,224·15**	**10,863**

† Iron ore from Koolan Island, Yampi Sound.

Period.	COAL.		WOLFRAM ORE.		ASBESTOS.		LIMESTONE.								DIAMONDS.	
	COLLIE RIVER COAL MF.		STATE GENERALLY.		PILBARA GF. Marble Bar D.		MURCHISON GF. Cue District.		YILGARN GOLDFIELD.		STATE GENERALLY.		TOTAL.		PILBARA GF. Nullagine District.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value
	tons.	£	tons.	£	tons.	£	tons.	£	tons.	£	tons.	£	tons.	£	carats.	£
Previous to 1899	3,508·00	1,761	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1899	54,336·00	25,951	...	...	...	...	...	...	...	...	17,593·00	2,838	17,593·00	2,838	*	24
1900 ...	118,410·10	54,835	...	...	...	...	...	...	269·85	273	15,657·00	3,321	15,926·85	3,594	...	...
1901 ...	117,835·80	68,561	...	...	...	...	...	...	1,642·00	919	16,568·00	3,429	18,210·00	4,348	...	...
1902 ...	140,883·90	86,188	...	...	...	...	...	...	535·00	340	4,545·35	1,000	5,080·35	1,340	...	...
1903 ...	133,426·62	69,128	...	...	...	...	...	...	102·00	75	1,177·50	103	1,279·50	178	...	...
1904 ...	138,550·04	67,174	...	...	...	...	...	...	...	...	13,397·20	1,699	13,397·20	1,699	...	...
1905 ...	127,364·06	55,312	...	...	...	...	...	...	...	...	9,144·60	1,220	9,144·60	1,220	...	...
1906 ...	149,755·27	57,998	...	...	...	...	...	...	...	...	9,472·28	1,691	9,472·28	1,691	...	...
1907 ...	142,372·54	55,158	...	...	...	...	298·00	772	...	...	3,303·95	610	3,601·95	1,382	...	...
1908 ...	175,247·92	75,694	...	...	40·00	1,600	...	...	...	...	...	...	...	...	...	...
1909 ...	214,301·98	90,965	†5·00	90	2·83	154	...	...	...	...	...	...	...	...	...	...
1910 ...	262,166·06	113,699	§42·00	115	...	...	...	...	...	...	...	...	...	...	...	...
1911 ...	249,899·15	111,154	‡194·00	877	...	...	...	...	...	...	...	...	...	...	...	...
1912 ...	295,078·91	135,857	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	**2,323,136·35**	**1,069,435**	**241·00**	**1,082**	**42·83**	**1,754**	**298·00**	**772**	**2,548·85**	**1,607**	**90,858·88**	**15,911**	**93,705·73**	**18,290**	...	**24**

NOTE.—As the collection of Statistics of Minerals other than Gold commenced during 1899, the total production from the different localities can only be approximately estimated by the Customs Records, the latest available returns of which are to be found in Table XXII., pages 102-105. * Weight unknown. † Produced within the West Kimberley Magisterial District, 93 miles N.W. of Derby. § Tons 22·00, value £30, the produce of Derby, and tons 20·00, value £85, the produce of Cue. ‡ The produce of Cue District.

TABLE X.

QUANTITY AND VALUE OF BLACK TIN REPORTED TO THE MINES DEPARTMENT DURING 1912, AND TOTALS TO DATE.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1912.				TOTALS TO DATE.			
			Quantity.			Value.	Quantity.			Value.
			Lode.	Stream.	Total.		Lode.	Stream.	Total.	
			tons.	tons.	tons.	£	tons.	tons.	tons.	£
PILBARA GOLDFIELD.										
MARBLE BAR DISTRICT.										
Cooglegong ...	...	Sundry claims	...	52·98	52·98	6,351	...	1,442·47	1,442·47	117,052
Mills Find ...	...	Sundry claims	...	...	...	...	...	·85	·85	69
Moolyella ...	...	Voided leases	...	...	...	...	...	330·53	330·53	21,340
Do. ...	...	Sundry claims	...	60·15	60·15	7,335	...	2,500·61	2,500·61	224,144
Old Shaw ...	...	Voided leases	...	...	...	...	...	6·75	6·75	424
Do. ...	...	Sundry claims	...	...	...	...	...	214·04	214·04	14,525
Wodgina ...	195 ...	Cassiterite No. 1	·35	...	·35	49	·35	...	35	49
Do. ...	192 ...	Comet	·30	...	·30	36	·30	...	·30	36
Do. ...	84 ...	(Mount Cassiterite) ...	...	...	...	...	133,52	13·85	147·37	14,184
Do. ...	84, 93, 148	Mount Cassiterite leases ...	4·35	...	4·35	553	154·95	...	154·95	12,212
Do. ...	93 ...	(Mount Cassiterite North)	...	...	...	...	9·67	...	9·67	971
Do. ...	213 ...	Referenda	1·05	...	1·05	147	1.05	...	1·05	147
Do. ...	178 ...	Siffleet's Reward	·70	...	·70	84	2,70	...	2·70	264
Do. ...	198 ...	Stannum	·90	...	·90	126	90	...	·90	126
Do. ...	203 ...	Wodgina Queen	·90	...	·90	108	·90	...	·90	108
Do. ...	...	Voided leases	...	...	...	...	18·00	6·10	24·10	2,259
Do. ...	...	Sundry claims	1·70	...	1·70	204	2·18	46·70	49·18	4,384
		Totals	**10·25**	**113·13**	**123·38**	**14.993**	**324·82**	**4.561·90**	**4.886·72**	**412.294**
MURCHISON GOLDFIELD.										
CUE DISTRICT.										
Poona ...	...	Sundry claims	...	...	...	...	...	1·52	1·52	118
		Totals	...	...	...	...	...	**1·52**	**1·52**	**118**
GREENBUSHES MINERAL FIELD.										
Greenbushes	472	(Aqua)	...	...	...	...	...	1·50	1·50	128
Do. ...	436	Battery Hill: Caledonian Tin Mining Co., N.L.	·85	...	·85	83	4·49	...	4·49	406
Do. ...	296	(Central)	...	...	...	...	...	100·16	100·16	9,728
Do. ...	511	Champion	...	22·70	22·70	2,595	...	46·60	46·60	4,853
Do. ...	356, 514	Cornwall Leases	...	...	...	...	48·67	13·63	62·30	5,446
Do. ...	(527)	Dixie	...	...	...	...	·60	...	·60	65
Do. ...	369	Enterprise	...	·42	·42	39	...	4·09	4·09	323
Do. ...	510	(Excelsior Extended) ...	...	..	...	...	...	·05	·05	5
Do ...	472, 497, 510	Excelsior Leases	...	6·55	6·55	743	...	6·55	6·55	743
Do. ...	497	(Excelsior Tin Mining Co., Ld.)	...	...	...	...	...	4·05	4·05	281
Do. ...	375	(Glasgow)	...	...	...	...	·93	·61	1·54	150
Do. ...	35, 169, 218, 272, 287, 295, 296, 331, 375, 395, 421, 425, (428), (432), (448), (453)	Greenbushes Development Co., Ld.	...	63·65	63·65	6,827	·35	741·65	742·00	62,598
Do. ...	35	(Horan's)	...	...	...	...	...	188·35	188·35	11,605
Do. ...	169	(Horan's No. 1 North) ...	...	...	...	...	...	9·50	9·50	684
Do. ...	515	Kapanga	2·09	...	2·09	258	10·06	...	10·06	1,087
Do. ...	73, 233, 271	King Tin Leases	·45	10·40	10·85	1,152	4·81	37·63	42·44	4,103
Do. ...	331	(Lady Esther)	...	...	...	...	...	10·00	10·00	744
Do. ...	470	Little Wonder	...	4·35	4·35	550	5·00	47·68	52·68	5,213
Do. ...	543	Lost and Found	4·57	...	4·57	549	4·57	...	4·57	549
Do. ...	507	Lost and Found North ...	1·55	·25	1·80	213	5·57	·25	5·82	611
Do. ...	460, 461	Mount Jones Leases ...	...	42·00	42·00	5,360	...	140·95	140·95	16,706
Do. ...	73	(Nelson)	...	...	...	...	...	22·40	22·40	1,675
Do. ...	73, 233	(Nelson Leases)	...	...	...	...	...	61·01	61·01	4,164
Do. ...	(17), (24)	New Zealand Syndicate N.L.	...	...	...	...	...	·80	·80	50
Do. ...	(413), (423) (424), 425, 470, (471)	(Nickel Kramer Tin Mining Co., Ld.)	...	...	...	...	...	9·17	9·17	726
Do. ...	(396), (397), 460, 461, (479), (480)	(Norilup Tin Mining and Dredging Co., Ld.)	...	...	...	...	...	3·82	3·82	291

TABLE X.—*Quantity and Value of BLACK TIN, etc.*—continued.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1912.				TOTALS TO DATE.			
			Quantity.			Value.	Quantity.			Value.
			Lode.	Stream.	Total.		Lode.	Stream.	Total.	
			tons.	tons.	tons.	£	tons.	tons.	tons.	£
GREENBUSHES MINERAL FIELD—*continued.*										
Greenbushes	504	Old Bunbury	...	2·50	2·50	253	...	35·05	35·05	3,129
Do. ...	271	(Pioneer)	...	...	...	...	...	1·84	1·84	117
Do. ...	505	Scotia	...	6.42	6·42	694	...	21·15	21·15	1,810
Do. ...	⅄30H (late 300)	South Cornwall	4.46	...	4·46	515	13·84	...	13·84	1,470
Do. ...	450, 458, 485, 486, 487, 488, 489	Stanhope United leases ...	...	74·65	74·65	9,635	...	240·54	240·54	25,198
Do. ...	529	Three C's	...	5·38	5·38	639	...	5·38	5·38	639
Do. ...	218	(W.A. Mt. Bischoff) ...	...	...	...	...	...	5·38	5·38	342
Do. ...	(381,) (435,) 436, 472, (478)	(Westralian Gully Tin Co. Ltd.)	...	...	...	...	6·38	34·38	40·76	3,235
Do. ...	35, 169, (195), 218, (221,) (228), 272, 287, (293), 295, (299), (310), 375	(Westralian Stanneries Ltd.)	...	...	...	...	...	109·33	109·33	8,171
Do. ...	Loc. 289, 290 ...	Freehold Ground (Clarth and others)	...	...	...	...	...	318·04	318·04	28,959
Do. ...	...	Voided leases	...	...	...	...	65·83	449·66	515·49	40,848
Do. ...	...	Sundry claims	·93	176·28	177·21	20·061	21·56	5,613·70	5,635·26	386,608
		Totals	**14·90**	**415·55**	**430·45**	**50·166**	**192·66**	**8,284·90**	**8,477·56**	**633,460**

TABLE XI.

QUANTITY AND VALUE OF TANTALITE REPORTED TO THE MINES DEPARTMENT DURING 1912, AND TOTALS TO DATE.

Locality.	Number of Lease, Claim, or Area.	Registered Name of Company or Lease.	1912. Quantity. Lode.	1912. Quantity. Stream.	1912. Quantity. Total.	1912. Value.	Total to Date. Quantity. Lode.	Total to Date. Quantity. Stream.	Total to Date. Quantity. Total.	Total to Date. Value.
			tons.	tons.	tons.	£	tons.	tons.	tons.	£
PILBARA GOLDFIELD.										
MARBLE BAR DISTRICT.										
Wodgina ...	86, 87, 95	H.M. and Anchorite leases	...	...	...	...	2·25	32·30	34·55	5,558
Do. ...	...	Sundry claims ...	...	...	...	...	...	51·50	51·50	6,124
		Totals	...	...	...	...	**2·25**	**83·80**	**86·05**	**11,682**
GREENBUSHES MINERAL FIELD.										
Greenbushes	369 ...	Enterprise	...	...	...	...	...	3·19	3·19	1,804
		Totals	...	...	...	...	...	**3·19**	**3·19**	**1,804**

TABLE XII.

QUANTITY AND VALUE OF PYRITIC ORE REPORTED TO THE MINES DEPARTMENT DURING 1912, AND TOTALS TO DATE.

Locality.	Number of Lease, Claim, or Area.	Registered Name of Company or Lease.	1912. Quantity.	1912. †Value.	Total to Date. Quantity.	Total to Date. †Value.
			tons.	£	tons.	£
Eulaminna ...	M.L., 18F,	Nangaroo: Nangaroo Mines, Ltd.	1,060·40	367	1,778·76	689
Do. ...	M.L., 4F, 5F, 11F, 12F	West Australian Copper Co., Ltd.	6,565·40	2,176	15,785·96	5,383
		Totals	**7,625·80**	**2,543**	**17,564·72**	**6,072**

† Represents the value of the sulphur only, the copper contents not having been treated yet.

TABLE XIII.

QUANTITY AND VALUE OF COPPER ORE REPORTED TO THE MINES DEPARTMENT DURING 1912, AND TOTALS TO DATE.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1912.			TOTALS TO DATE.		
			Quantity.		Value.	Quantity.		Value.
			Ore.	Metallic Copper.		Ore.	Metallic Copper.	
			tons.	tons.	£	tons.	tons.	£
PILBARA GOLDFIELD.								
MARBLE BAR DISTRICT.								
Marble Bar ...	...	Voided leases	...	...	...	11·00	1·64	90
Do. ...	...	Sundry claims	...	...	...	1·75	·48	25
North Pole ...	...	Voided leases	...	...	...	9·35	1·39	81
North Shore ...	...	Voided leases	...	...	...	7·77	1·90	190
		Totals	...	...	...	**32·87**	**5·41**	**386**
NULLAGINE DISTRICT.								
McPhee's Creek	M.L. 14L	Tambina	...	...	...	5·00	2·22	120
		Totals	...	...	...	**5·00**	**2·22**	**120**
WEST PILBARRA GOLDFIELD.								
Croydon ..	M.L. 31 ...	Evelyn (British Exploration of Australasia, Ltd.)	...	...	...	549·00	96·00	6,463
Do. ...	...	Voided leases	...	...	...	55·00	12·65	870
Egina	...	Voided leases	...	...	...	542·00	104·15	6,643
Roebourne ...	M.L. 143...	Carlow Castle	31·64	4·72	316	31·64	4·72	316
Do. ...	(M.L. 64)	Fortune	...	...	...	51·07	11·68	690
Do. ...	M.L. 145, 146	Good Fortune leases	39·60	9·80	626	39·60	9·80	626
Do. ...	G.M.L. 150	Q.E.	88·28	8·07	579	303·84	34·46	2,093
Do. ...	M.L. 138	Trouble	...	...	...	23·21	6·22	343
Do. ...	...	Voided leases	...	...	...	1,327·55	261·87	22,608
Do. ...	...	Sundry claims	...	...	...	44·40	9·69	554
Whim Creek ...	M.L. 34 ...	(Balla Balla Copper Mines, Ltd.) ...	...	...	...	2,009·00	166·33	12,036
Do. ...	M.L. 34 ...	Mons Cupri: Whim Well Copper Mines, Ltd.	56·00	9.30	620	77·00	12·10	774
Do. ...	Loc. 71 ...	Whim Well Copper Mines, Ltd. ...	12,068·50	1,451·32	102,148	49,089·53	7,056·56	440,488
Do. ...	...	Voided leases	...	...	...	30·00	5·50	250
		Totals	**12,284·02**	**1,483·21**	**104,289**	**54,172·84**	**7,791·73**	**494,754**
ASHBURTON GOLDFIELD.								
Red Hill ...	...	Voided leases	...	...	...	175·50	33·85	2,126
Uaroo ...	...	Voided leases	...	...	...	23·25	7·25	444
		Totals	...	...	...	**198·75**	**41·10**	**2,570**
EAST MURCHISON GOLDFIELD.								
LAWLERS DISTRICT.								
Kathleen Valley	12 ...	Shepherd	...	...	...	6·77	1·32	69
		Totals	...	...	...	**6·77**	**1·32**	**69**
MURCHISON GOLDFIELD.								
NANNINE DISTRICT.								
Gabanintha ...	(G. M. Ls. 3, 9N, 504N) (505N)	Mountain View leases ...	...	...	...	127·00	38·10	2,681
Do. ...	...	Voided leases	...	...	...	614·50	45·50	2,958
		Totals	...	...	...	**741·50**	**83·60**	**5,639**
DAY DAWN DISTRICT.								
Day Dawn ...	G.M.L. 14D	Croesus: Murchison Associated G.Ms., Ltd.	...	...	...	6·50	1·02	84
Do. ...	P.A. 65D	(Canning, G. C.)	...	...	...	25·21	2·50	190
Do. ...	...	Voided leases	...	...	...	15·65	3·15	167
		Totals	...	...	...	**47·36**	**6·67**	**441**

TABLE XIII.—*Quantity and Value of COPPER ORE, etc.*—continued.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1912.			TOTALS TO DATE.		
			Quantity.		Value.	Quantity.		Value.
			Ore.	Metallic Copper.		Ore.	Metallic Copper.	
			tons.	tons.	£	tons.	tons.	£
YALGOO GOLDFIELD.								
Twin Peaks ...	P.A., 155	(Summers, S. D.)	...	...	...	19·50	3·49	227
Wadgingara ...	...	Voided leases	...	...	...	13·91	·98	91
		Totals	...	...	...	**33·41**	**4·47**	**318**
NORTHAMPTON MINERAL FIELD.								
Geraldine ...	...	Voided leases	...	...	...	136·50	36·05	1,992
		Totals	...	...	...	**136·50**	**36·05**	**1,992**
YANDANOOKA MINERAL FIELD.								
Arrino ...	...	Sundry claims	...	...	...	126·05	18·48	1,386
Yandanooka ...	Freehold Gd.	Muggawa Copper Mine... ...	...	...	...	7·50	1·20	96
Do. ...	...	Voided leases	...	...	...	38·00	7·95	407
		Totals	...	...	...	**171·55**	**27·63**	**1,889**
MOUNT MARGARET GOLDFIELD.								
MOUNT MORGANS DISTRICT.								
Eulaminna ...	[10c, 11c], (12c, 37 c),	(Mt. Malcolm Copper Mine) ...	...	...	...	13,516·00	1,001 98	70,754
Do. ...	(10c, 11c,) 4F, 5F	(Mt. Malcolm Copper Mine) ...	...	...	...	3,839·00	418·00	17,065
Do. ...	[10c, 11c], (12c, 37c),	(Murrin Copper Mines, Ltd.) ...	...	...	...	19,165·00	798·50	45,817
Do. ...	4F, 5F, 11F, 12F	West Australian Copper Co., Ltd. ...	...	...	...	9,794·05	1,976·05	80,199
Mt. Margaret ...	...	Voided leases	...	...	...	11·53	2·40	163
Murrin Murrin	18F. ...	Nangeroo; Nangeroo Mines, Ltd....	...	...	...	6·80	3·00	160
Do. ...	...	Voided leases	...	...	...	1,525·29	248·04	16,662
		Totals	...	...	...	**47,857·67**	**4,448·00**	**230,820**
MOUNT. MARGARET DISTRICT.								
Burtville ...	...	Voided leases	...	...	...	2·85	·29	26
		Totals	...	...	...	**2·85**	**·29**	**26**
NORTH COOLGARDIE GOLDFIELD.								
MENZIES DISTRICT.								
Goongarrie ...	...	Voided leases	...	...	...	4·70	·42	33
Do. ...	...	Sundry claims	...	...	...	1·42	·40	18
		Totals	...	...	...	**6·12**	**·82**	**51**
EAST COOLGARDIE GOLDFIELD.								
EAST COOLGARDIE DISTRICT.								
Boorara ...	...	Voided leases	...	...	...	50·67	6·22	330
		Totals	...	...	...	**50·67**	**6·22**	**330**

TABLE XIII.—*Quantity and Value of COPPER ORE, etc.*—continued.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1912.			TOTALS TO DATE.		
			Quantity.		Value.	Quantity.		Value.
			Ore.	Metallic Copper.		Ore.	Metallic Copper.	
			tons.	tons.	£	tons.	tons.	£
PHILLIPS RIVER GOLDFIELD.								
Kundip ...	M.L. 184...	Christmas Gift	...	...	...	189·05	19·84	1,226
Do. ...	G.M.L. 147, 179	Fair Play	57·17	3·85	297	91·21	3·88	299
Do. ...	G.M.Ls. 136, 137, 138 (139)	Flag Gold and Copper Mining Co., Ltd.	...	...	...	2,107·84	144·75	8,494
Do. ...	M.Ls. 52, 94	(Harbour View leases)	...	...	...	604·36	76·80	4,524
Do. ...	M.Ls. 52, 94	Harbour View leases	72·98	13·00	975	508·27	64·66	3,642
Do. ...	G.M.L. 98	Hillsborough	...	...	...	667·84	10·04	666
Do. ...	(M.L. 338)	Little Wonder	...	...	...	16·95	1·54	86
Do. ...	M.Ls. 52, 94	(Ravensthorpe G.M. Syndicate, N.L.)	...	...	...	132·56	24·36	1,382
Do. ...	...	Voided leases	...	...	...	743·50	82·94	5,438
Do. ...	...	Sundry claims	...	...	...	64·53	9·13	660
Mt. Desmond ...	(M.L. 335)	Comstock	...	...	...	40·67	7·08	394
Do. ...	M.L. 208...	Desmond: Phillips River Gold and Copper Co., Ltd.	608·17	109·70	8,390	678·79	121·31	9,046
Do. ...	M.L. 95 ...	(Elverdton)	...	...	...	130·00	5·70	570
Do. ...	M.L. 95 ...	(Elverdton: Phillips River Options Syndicate, N.L.)	...	...	...	2,946·02	401·43	22,657
Do. ...	M.L. 95 ...	Elverdton: Phillips River Gold and Copper Co., Ltd.	...	...	...	27,903·28	1,914·34	107,575
Do. ...	M.L. 168...	(Elverdton South)	...	...	...	18·48	2·39	119
Do. ...	M.L. 275...	Ironclad	...	...	...	304·68	53·11	2,951
Do. ...	M.L. 109...	(Mt. Desmond)	...	...	...	198·87	30·77	1,610
Do. ...	M.L. 109...	Mt. Desmond: Phillips River Gold and Copper Co., Ltd.	17·89	2·82	219	1,721·37	210·10	17,643
Do. ...	M.L. 199...	P.L.P.	...	...	...	208·66	33·69	2,277
Do. ...	...	Voided leases	...	...	...	600·61	95·58	5,776
Do. ...	...	Sundry claims	...	...	...	34·10	6·58	433
Ravensthorpe ...	M.L. 116...	Last Chance	107·08	19·19	1,324	1,108·12	177·97	10,782
Do. ...	M.L. 16 ...	(Marion Martin)	...	...	...	865·69	130·61	6,650
Do. ...	M.L. 16 ...	Marion Martin: Phillips River Gold and Copper Co., Ltd.	445·09	68·12	4,465	1,802·66	211·90	13,567
Do. ...	M.L. 175...	(Mount Benson)	...	...	...	605·19	73·64	3,702
Do. ...	M.L. 175...	Mount Benson: Phillips River Gold and Copper Co., Ltd.	...	...	...	1,142·40	80·21	5,692
Do. ...	M.L. 331...	Mount Benson Extended ...	10·00	1·93	145	60·45	11·68	693
Do. ...	M.L. 15 ...	(Mount Cattlin)	...	...	...	281·56	31·35	1,716
Do. ...	M.L. 15 ...	(Mount Cattlin: Mount Cattlin Copper Mining Co., Ltd.)	...	...	...	6,608·76	333·59	28,841
Do. ...	M.L. 15 ...	(Mount Cattlin: Phillips River Gold and Copper Co., Ltd.)	...	...	...	1,263·76	80·26	7,646
Do. ..	M.L. 15 ...	Mt. Cattlin: Phillips River Gold and Copper Co., Ltd.	...	...	...	14,152·95	689·85	38,759
Do. ...	...	Voided leases	...	...	...	3,274·15	405·09	24,274
Do. ...	...	Sundry claims	...	...	...	148·87	12·51	695
West River ...	...	Voided leases	..	...	...	44·04	7·41	414
Do. ...	...	Sundry claims	...	...	...	118·29	22·20	1,698
		From goldfield generally	...			801·81	68·75	4,123
		Totals	**1,318·38**	**218·61**	**15,815**	**72,190·34**	**5,657·04**	**346,750**
STATE GENERALLY.								
Jerramungup ...	(59H) ...	(Netty Copper Mine)	...	...	...	3·08	1·26	40
Twin Peaks ...	(P.A. 105H)	(Tibbetts, W. H.)...	...	...	...	13·50	2·27	193
		Totals	...	...	...	**16·58**	**3·53**	**233**

TABLE XIV.

QUANTITY AND VALUE OF IRONSTONE REPORTED TO THE MINES DEPARTMENT DURING 1912, AND TOTALS TO DATE.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1912.		TOTALS TO DATE.	
			Quantity.	Value.	Quantity.	Value.
			tons.	£	tons.	£
WEST PILBARA GOLDFIELD.						
Whim Creek ...	...	Voided leases	...	...	100·00	300
		Totals	...	...	**100·00**	**300**
EAST COOLGARDIE GOLDFIELD.						
EAST COOLGARDIE DISTRICT.						
Boulder	...	Voided leases	...	...	450·00	247
		Totals	...	...	**450·00**	**247**
STATE GENERALLY.						
Avon			...	...	22,223·00	16,241
Clackline			...	...	18,253·50	8,789
Coates' Paddock			...	...	4,712·00	3,277
Greenbushes			...	...	7,418·00	4,629
Koolan Island—Yampi Sound			...	...	10·50	12
Werribee			...	..	4,600·00	3,200
		Totals	...	...	**57,280·00**	**36,148**

TABLE XV.

QUANTITY AND VALUE OF LEAD ORE REPORTED TO THE MINES DEPARTMENT DURING 1912, AND TOTALS TO DATE.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1912.			TOTALS TO DATE.		
			Lead Ore.	Metal therefrom.	Value.	Lead Ore.	Metal therefrom.	Value.
			tons.	tons.	£	tons.	tons.	£
NORTHAMPTON MINERAL FIELD.								
Geraldine ..	..	Voided leases ..	..	..	..	57·00	41·61	461
Narra Tarra ..	..	Sundry claims ..	..	..	..	225·00	27·00	185
Northampton ..	Loc. 1472	Baddera Lead Mine ..	11,098·50	1,330·82	24,412	19,478·36	2,731·19	43,852
Do. ..	..	Voided leases ..	..	..	..	116·75	72·58	1,176
Victoria.. ..	..	Voided leases ..	..	..	..	19·00	12·54	212
		Totals ..	**11,098·50**	**1,330·82**	**24,412**	**19,896·11**	**2,884·92**	**45,886**

TABLE XVI.

QUANTITY AND VALUE OF SILVER-LEAD ORE REPORTED TO THE MINES DEPARTMENT DURING 1912 AND TOTALS TO DATE.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1912.		TOTALS TO DATE.	
			Quantity.	Value.	Quantity.	Value.
			tons.	£	tons	£
ASHBURTON GOLDFIELD.						
Ashburton ...	...	Voided leases	...	...	56·90	429
Uaroo	43, 49	Uaroo Silver-Lead Mines	...	...	1,167·25	10,434
		Totals	...	...	**1,224·15**	**10,863**

TABLE XVII.

QUANTITY AND VALUE OF COAL REPORTED TO THE MINES DEPARTMENT DURING 1912, AND TOTALS TO DATE.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1912.		TOTALS TO DATE.	
			Quantity.	Value.	Quantity.	Value.
			tons.	£	tons.	£
		COLLIE RIVER MINERAL FIELD.				
Collie... ...	197, etc.	Cardiff Coal Mining Co., Ltd.	66,532·00	26,661	376,453·32	157,759
Do. ...	151, etc.	(Collie-Boulder Coal Co., Ltd.)	...	...	71,512·70	26,139
Do. ...	244, etc.,	Collie Co-operative Collieries, Ltd.	76,693·00	38,347	398,632·33	187,628
Do. ...	88 (pt. of)	(Collie Proprietary Coalfields of W.A., Ltd. (No. 1 Pit))	9,549·00	4,783	477,781·55	242,918
Do. ...	85–100	(Collie Proprietary Coalfields of W.A., Ltd. (No. 2 Pit))	18,129·00	9,088	580,392·15	289,246
Do. ...	260–266	Premier Coal Mining Co., Ltd.	37,521·80	17,075	44,134·10	20,190
Do. ...	88 (pt. of)	Proprietary Coal Mines of W.A., Ltd. (No. 1 Pit) ...	109·00	54	109·00	54
Do. ...	85–100	Proprietary Coal Mines of W.A., Ltd. (No. 2 Pit) ...	12,011·00	5,935	12,011·00	5,935
Do. ...	151, etc.	Scottish Collieries Company	50,913·11	22,693	300,987·56	110,268
Do. ...	250–254, 256	Westralian Coal Mining Co., Ltd.	23,621·00	11,221	35,552·79	16,368
		Voided leases	...	...	25,569 85	12,930
		Totals	**295,078·91**	**135,857**	**2,323,136·35**	**1,069,435**

TABLE XVIII.

QUANTITY AND VALUE OF LIMESTONE REPORTED TO THE MINES DEPARTMENT DURING 1912, AND TOTALS TO DATE.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1912.		TOTALS TO DATE.	
			Quantity.	Value.	Quantity.	Value.
			tons.	£	tons.	£
		MURCHISON GOLDFIELD.				
		CUE DISTRICT.				
Cuddingwarra	...	Voided Leases	...	...	298·00	772
		Totals	**...**	**...**	**298·00**	**772**
		YILGARN GOLDFIELD.				
Southern Cross	...	Voided Leases	...	...	2,548·85	1,607
		Totals	**...**	**...**	**2,548·85**	**1,607**
		STATE GENERALLY.				
Fremantle ...	...	... ...	...	...	90,858·88	15,911
		Totals	**...**	**...**	**90,858·88**	**15,911**

TABLE XIX.

QUANTITY AND VALUE OF ASBESTOS REPORTED TO THE MINES DEPARTMENT DURING 1912, AND TOTALS TO DATE.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1912.		TOTALS TO DATE.	
			Quantity.	Value.	QUANTITY.	VALUE.
			tons.	£	tons.	£
PILBARA GOLDFIELD.						
MARBLE BAR DISTRICT.						
Soansville ...	155, etc.	Pilbara Asbestos Co., Ltd.	...	...	42·83	1,754
		Totals	...	...	**42·83**	**1,754**

TABLE XX.

QUANTITY AND VALUE OF WOLFRAM REPORTED TO THE MINES DEPARTMENT DURING 1912, AND TOTALS TO DATE.

LOCALITY.	NUMBER OF LEASE, CLAIM OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1912.			TOTALS TO DATE.		
			Ore.	Metallic contents.	Value.	Ore.	Metallic contents.	Value.
			tons.	tons.	£	tons.	tons.	£
STATE GENERALLY.								
Derby ...	146H	Taylor's Wolfram Reward	...	...	...	27·00	2·00	120
		Totals	...	...	...	**27·00**	**2·00**	**120**
MURCHISON GOLDFIELD.								
CUE DISTRICT.								
Cuddingwarra	M.L. 11	Socialist	...	...	...	194·00	6·11	877
Do.	...	Sundry claims	...	...	...	20·00	·85	85
		Totals	...	...	...	**214·00**	**6·96**	**962**

TABLE XXI.

QUANTITY AND VALUE OF DIAMONDS REPORTED TO THE MINES DEPARTMENT DURING 1912, AND TOTALS TO DATE.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1912.		TOTALS TO DATE.	
			Quantity.	Value.	Quantity.	Value.
			carats.	£	carats.	£
		PILBARA GOLDFIELD.				
		NULLAGINE DISTRICT.				
Nullagine ...	M.R.C.6L	(Morgans, A. E.)	...	...	...	24
		Totals	...	...	...	**24**

TABLE

RETURN OF ORE AND MINERALS OTHER THAN GOLD

YEAR.	COPPER.												
	COPPER ORE.										COPPER INGOT, MATTE, Etc.		Total Value of Copper Exported
	West Pilbara Gf.		Northampton Mf.		Phillips River Gf.		State generally.		Total.		State generally.		
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	
	tons.	£	tons.	£	tons.	£	tons.	£	tons.	£	tons.	£	£
1850	...	...	...	...	...	...	...	...	...	...	...	...	...
1	...	...	...	...	...	...	...	...	...	...	...	...	...
2	...	...	...	...	...	...	...	...	...	...	...	...	..
3	...	...	[2]†	7	...	...	...	...	...	7	...	...	7
4	...	...	...	...	...	...	...	...	...	...	...	...	...
5	...	...	2	26	...	...	...	...	2	26	...	...	26
6	...	...	57	1,018	...	...	...	...	57	1,018	...	...	1,018
7	...	...	80	1,920	...	...	...	...	80	1,920	...	...	1,920
8	...	...	433	9,531	...	...	...	...	433	9,531	...	...	9,531
9	...	...	941	14,122	...	...	...	...	941	14,122	...	...	14,122
1860	...	...	517	8,021	...	...	...	...	517	8,021	...	...	8,021
1	...	...	409	6,339	...	...	...	...	409	6,339	...	...	6,339
2	...	...	783	12,536	...	...	...	...	783	12,536	...	...	12,536
3	...	...	763	12,208	...	...	...	...	763	12,208	...	...	12,208
4	..	...	1,076	17,216	...	...	...	...	1,076	17,216	...	...	17,216
5	...	...	886	13,290	...	...	...	...	886	13,290	...	...	13,290
6	...	...	557	8,362	...	...	...	...	557	8,362	...	...	8,362
7	...	...	337	5,055	...	...	...	...	337	5,055	...	..	5,055
8	...	...	83	1,245	...	...	...	...	83	1,245	...	...	1,245
9	...	...	155	2,325	...	...	...	...	155	2,325	...	..	2,325
1870	...	...	6	90	...	...	...	...	6	90	..	...	90
1	...	...	...	...	...	...	...	...	...	...	...	...	...
2	...	...	...	...	...	...	...	...	...	...	...	...	...
3	...	...	56	848	...	...	...	...	56	848	...	...	848
4	...	.	67	998	...	...	...	...	67	998	...	...	998
5	...	. .	205	3,071	...	...	...	...	205	3,071	...	...	3,071
6	...	...	279	4,185	...	...	...	...	279	4,185	...	...	4,185
7	...	...	54	803	...	...	...	...	54	803	...	...	803
8	...	...	9	135	...	...	...	...	9	135	...	...	135
9	...	...	...	...	...	...	...	...	...	...	...	...	...
1880	...	...	8	120	...	...	...	...	8	120	...	...	120
1	...	...	...	...	...	...	...	...	...	...	...	...	...
2	...	...	2	23	...	...	...	...	2	23	...	...	23
3	...	...	5	75	...	...	...	...	5	75	...	...	75
4	...	...	118	1,770	...	...	...	...	118	1,770	...	...	1,770
5	...	..	120	1,793	...	...	...	...	120	1,793	...	...	1,793
6	...	...	249	3,735	...	...	...	...	249	3,735	...	...	3,735
7	...	...	23	345	...	...	...	...	23	345	...	...	345
8	...	...	88	1,488	...	...	...	...	88	1,488	...	...	1,488
9	...	...	112	1,904	...	...	...	...	112	1,904	...	...	1,904
1890	...	...	8	136	...	...	...	...	8	136	...	...	136
1	263	4,462	...	...	...	...	...	...	263	4,462	...	...	4,462
2	[1]† 412	6,319	155	2,377	...	...	...	...	567	8,696	...	...	8,696
3	50	606	...	...	...	...	...	...	50	606	...	...	606
4	...	...	...	...	...	...	...	...	...	...	...	...	...
5	802	12,832	24	120	...	...	...	...	826	12,952	...	...	12,952
6	6	100	...	...	...	...	...	...	6	100	...	...	100
7	65	731	21	302	...	...	...	...	86	1,033	...	...	1,033
8	281	3,334	75	932	...	...	...	...	356	4,266	...	...	4,266
9	1,404	31,979	587	9,473	...	...	...	...	1,991	41,452	...	...	41,452
1900	544	10,696	...	...	105	2,411	197	3,355	846	16,462	249	17,475	33,937
1	1,058	26,464	1	10	1,205	22,107	397	6,322	2,661	54,903	880	55,866	110,769
2	68	1,698	20	330	162	2,469	33	489	283	4,986	175	7,918	12,904
3	4	180	25	460	302	3,538	15	349	346	4,527	1,075	33,288	37,815
4	50	500	...	...	11	154	310	3,378	371	4,032	102	3,827	7,859
5	...	...	...	...	80	2,808	713	8,576	793	11,384	794	53,867	65,251
6	112	3,232	...	...	...	...	224	2,930	336	6,162	343	30,367	36,529
7	...	...	...	...	...	...	3,727	61,493	3,727	61,493	1,602	141,883	203,376
8	...	...	...	...	...	...	2,503	29,272	2,503	29,272	479	27,819	57,091
9	...	...	...	...	...	...	6,959	59,541	6,959	59,541	833	45,100	104,641
1910	...	...	...	...	...	...	6,309	27,271	6,309	27,271	1,281	68,657	95,928
1911	...	...	...	...	...	...	9,825	33,709	9,825	33,709	828	44,409	78,118
1912	...	...	...	...	...	...	9,556	59,388	9,556	59,388	8	1,149	60,537
Total	...	...	...	...	...	..	...	...	**57,148**	**581,437**	**8,649**	**531,625**	**1,113,062**

[1] † *See* Woodward's Mining Handbook, Perth: By Authority, 1895; page 123. [2] † Weight not stated.

XXII.

ENTERED FOR EXPORT FROM 1850 TO 1912, INCLUSIVE.

TIN.											
BLACK TIN (Dressed Tin).								TIN INGOT. (White tin.)		Total Value of Tin Exported.	Year.
Pilbarra Gf.		Greenbushes Mf.		[3]†State generally.		Total.		Greenbushes Mf.			
Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.		
tons.	£	tons.	£	tons.	£	tons.	£	tons.	£	£	
...	...	...	...	...	...	...	...	...	...	...	1850
...	...	...	...	...	...	...	...	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	2
...	...	...	...	...	...	...	...	...	...	...	3
...	...	...	...	...	...	...	...	...	..	...	4
...	...	...	...	...	...	...	...	...	...	...	5
...	...	...	...	...	...	...	...	...	...	...	6
...	...	...	...	...	...	...	...	...	...	...	7
...	...	...	...	...	...	...	...	...	...	...	8
...	...	...	...	...	...	...	...	...	...	...	9
...	...	...	...	...	...	...	...	...	...	...	1860
...	..	...	...	...	...	...	...	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	2
...	...	...	...	...	...	...	...	...	...	...	3
...	...	...	..	...	...	...	...	...	...	...	4
...	...	...	...	...	...	...	...	...	...	...	5
...	...	...	...	...	...	...	...	...	...	...	6
...	...	...	...	...	...	...	...	...	...	...	7
...	...	...	...	...	...	...	...	...	...	...	8
...	...	...	...	...	...	...	...	...	...	...	9
...	...	...	...	...	...	...	...	...	...	...	1870
...	...	...	...	...	...	...	...	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	2
...	...	...	...	...	...	...	...	...	...	...	3
...	...	...	...	...	...	...	...	...	...	...	4
...	...	...	...	...	...	...	...	...	...	...	5
...	...	...	...	...	...	...	...	...	...	...	6
...	...	...	...	...	...	...	...	...	...	...	7
...	...	...	...	...	...	...	...	...	...	...	8
...	...	...	...	...	...	...	...	...	...	...	9
...	...	...	...	...	...	..	...	...	...	...	1880
...	...	...	...	...	...	...	...	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	2
...	...	...	...	...	...	...	...	...	...	...	3
...	...	...	...	...	...	...	...	...	...	...	4
...	...	...	...	...	...	...	...	...	...	...	5
...	...	...	...	...	...	...	...	...	...	...	6
...	...	...	...	...	...	...	...	...	...	...	7
...	...	...	...	...	...	...	...	...	...	...	8
...	...	...	...	...	...	...	...	...	...	...	9
...	...	5	300	...	...	5	300	...	...	300	9
...	...	68	5,400	...	...	68	5,400	...	...	5,400	1890
...	...	204	10,200	...	...	204	10,200	...	...	10,200	1
...	...	265	13,843	...	...	265	13,843	...	...	13,843	2
57	3,470	171	7,664	...	...	228	11,134	...	...	11,134	3
19	949	371	14,325	...	...	390	15,274	...	...	15,274	4
...	...	277	9,703	...	..	277	9,703	...	...	9,703	5
...	...	137	4,338	...	...	137	4,338	...	...	4,338	6
...	...	96	3,275	...	...	96	3,275	...	...	3,275	7
...	...	68	2,760	...	...	68	2,760	...	...	2,760	8
30	2,025	278	21,138	...	...	308	23,163	...	...	23,163	9
368	30,146	102	8,032	...	...	470	38,178	142	18,872	57,050	1900
439	34,600	68	4,895	...	...	507	39,495	97	12,607	52,102	1
248	19,698	31	2,870	...	...	279	22,568	141	16,830	39,398	2
267	20,988	25	1,868	...	...	292	22,856	235	29,277	52,133	3
64	4,932	24	1,389	379	20,797	467	27,118	129	16,155	43,273	4
188	16,853	119	8,177	666	51,748	973	76,778	...	1	76,779	5
329	28,375	444	46,254	624	64,005	1,397	138,634	45	8,746	147,380	6
...	...	...	...	1,424	151,414	1,424	151,414	78	14,725	166,139	7
...	...	...	...	1,093	83,294	1,093	83,594	[2]†	1	83,595	8
...	...	...	...	698	62,989	698	62,989	...	...	62,989	9
...	...	...	...	500	45,129	500	45,129	...	...	45,129	1910
...	...	...	...	495	55,220	495	55,220	...	...	55,220	1911
...	...	...	...	575	70,578	575	70,578	...	...	70,578	1912
...	...	...	...	...	...	**11,216**	**933,941**	**867**	**117,214**	**1,051,155**	Total

[3]† Probably the produce of Pilbara Goldfield and Greenbushes Mineral Field.

TABLE XXII.—*Return of Ore and Minerals other than Gold*

YEAR.	SILVER.		LEAD ORE.		SILVER-LEAD ORE.		PIG LEAD.		ZINC INGOTS AND CONCENTRATES.	
	State generally.		Northampton Mf.		State generally.		State generally.		State generally.	
	Quantity.	Value	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	ozs.	£	tons.	£	tons.	£	tons.	£	tons.	£
1850 ...	...	...	5	55	...	...	...	...	...	....
1 ...	...	...	...	...	...	...	...	...	...	...
2 ...	...	...	...	...	...	...	...	...	...	...
3 ...	...	...	[2]†	4	...	...	55	1,200	...	...
4 ...	...	...	...	...	...	...	122	2,440	...	..
5 ...	...	...	25	250	...	...	134	2,675	...	...
6 ...	...	...	...	...	...	...	60	1,200	...	...
7 ...	...	...	...	...	...	...	120	2,410	...	...
8 ...	...	...	...	...	...	...	61	1,220	...	...
9 ...	...	...	13	135	...	...	25	495	...	...
1860 ...	...	...	98	985	...	...	...	...	...	...
1 ...	...	...	79	790	...	...	...	...	...	...
2 ...	...	...	9	90	...	...	...	...	...	...
3 ...	...	...	230	2,300	...	...	...	...	...	...
4 ...	...	...	80	800	...	...	...	...	...	...
5 ...	...	...	703	8,436	...	...	...	...	...	...
6 ...	...	...	273	3,282	...	...	...	...	...	...
7 ...	...	...	902	10,824	...	...	[4]†3	50	...	...
8 ...	...	...	1,100	13,206	...	...	...	...	...	...
9 ...	...	...	699	8,394	...	...	...	...	...	...
1870 ...	...	...	1,209	14,514	...	...	...	...	...	...
1 ...	...	...	420	5,040	...	...	...	...	...	...
2 ...	...	...	364	4,368	...	...	...	...	...	...
3 ...	...	...	965	11,586	...	...	...	...	...	...
4 ...	...	...	2,144	25,725	...	...	...	...	...	...
5 ...	...	...	2,289	27,468	...	...	4	89	...	...
6 ...	...	...	2,192	26,298	...	...	[4]†7	155	...	...
7 ...	...	...	3,956	47,466	...	...	[4]†1	15	...	...
8 ...	...	...	3,618	43,410	...	...	...	...	...	...
9 ...	...	...	2,775	33,300	...	...	...	...	...	...
1880 ...	...	...	1,921	15,368	...	...	[4]†5	89	...	...
1 ...	...	...	1,401	11,204	...	...	[4]†1	20	...	...
2 ...	...	...	1,794	14,348	...	...	...	...	...	...
3 ...	...	...	1,038	7,266	...	...	...	...	...	...
4 ...	...	...	696	4,872	...	...	...	...	...	...
5 ...	...	...	465	3,255	...	...	...	...	...	...
6 ...	...	...	611	4,277	...	...	...	...	...	...
7 ...	...	...	471	4,710	...	...	[4]†6	120	...	...
8 ...	...	...	532	5,320	...	...	[4]†2	40	...	...
9 ...	...	...	250	2,500	...	...	...	...	...	...
1890 ...	...	...	214	2,135	...	...	...	...	...	...
1 ...	...	...	25	250	...	...	...	...	...	...
2 ...	...	...	30	150	...	...	...	...	...	...
3 ...	...	...	...	...	...	...	...	...	...	...
4 ...	...	...	...	...	...	...	...	...	...	...
5 ...	...	...	...	...	...	...	...	...	...	...
6 ...	...	...	...	...	...	...	...	...	...	...
7 ...	...	...	[2]†	4	...	...	[4]†1	11	...	...
8 ...	...	...	5	33	...	...	...	...	...	...
9 ...	...	...	16	96	...	...	77	1,077	...	...
1900 ...	28,749	3,594	27	242	...	...	...	...	...	...
1 ...	60,869	7,609	...	...	...	...	...	...	...	...
2 ...	83,293	9,190	...	...	...	...	...	...	...	...
3 ...	168,113	19,153	...	...	...	...	...	...	...	...
4 ...	399,190	45,912	...	...	...	...	...	...	...	...
5 ...	359,744	44,278	...	...	...	...	...	...	...	...
6 ...	282,145	37,612	...	...	...	...	...	...	...	...
7 ...	189,265	25,382	...	..	211	1,866	...	...	73	3,390
8 ...	168,455	18,877	...	...	518	5,006	...	...	... 11	... 98
9 ...	176,843	18,778	...	...	211	1,199	...	...	... 19	... 244
1910 ...	176,139	18,777	248	1,433	...	...	...	...	12	147
1911 ...	169,043	18,333	‡679 870	6,682 8,320	...	...	...	...	12	189
1912 ...	138,039	16,353	1,868	22,565	...	...	...	...	14	217
Total ...	**2,399,887**	**233,848**	**37,309**	**403,756**	**940**	**8,071**	**684**	**13,306**	**141**	**4,285**

[2]† Weight not stated. [4]† Estimated. [5]† 4 cwts. [6]† Includes Cobalt ore, 2 tons, valued at £41: Plumbago ore, 1 ton, valued at £6. ‡ Concentrates

ntered for EXPORT from 1850 to 1912, inclusive—continued.

WOLFRAM.		NON-METALLIC MINERALS.						MINERALS NOT ELSEWHERE INCLUDED.		Total Value of Minerals other than Gold, Exported to Date.	Year.	
		ASBESTOS.		COAL.		MICA.						
State generally.		State generally.		Collie River Coal Mf.		State generally.						
Quantity	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.			
tons.	£	tons.	£	tons.	£	tons.	£	tons.	£	£		
...	...	...	...	...	...	...	...	...	...	55	...	1850
...	...	...	...	...	...	...	...	...	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	2
...	...	...	...	...	...	...	...	...	...	1,211	...	3
...	...	...	...	...	...	...	...	...	...	2,440	...	4
...	...	...	...	...	...	...	...	...	...	2,951	...	5
...	...	...	...	...	...	...	...	...	...	2,218	...	6
...	...	...	...	...	...	...	...	...	...	4,330	...	7
..	...	...	...	...	...	...	...	...	...	10,751	...	8
...	...	...	...	...	...	...	...	...	...	14,752	...	9
...	...	...	...	...	...	...	...	...	...	9,006	...	1860
...	...	...	...	...	...	...	...	...	...	7,129	...	1
...	...	...	...	...	...	...	...	...	...	12,626	...	2
...	...	...	...	...	...	...	...	...	...	14,508	...	3
...	...	...	...	...	.	...	...	...	...	18,016	...	4
...	...	...	...	...	...	...	...	...	...	21,726	...	5
...	...	...	...	...	...	...	...	...	...	11,644	...	6
...	...	...	...	...	...	...	...	...	...	15,929	...	7
...	...	...	...	...	...	...	...	...	...	14,451	...	8
...	...	...	...	...	...	...	...	...	...	10,719	...	9
...	...	...	...	...	...	...	...	...	...	14,604	...	1870
...	...	...	...	...	...	...	...	...	...	5,040	...	1
...	...	...	...	...	...	...	...	...	...	4,368	...	2
...	...	...	...	...	...	...	...	...	...	12,434	...	3
...	...	...	...	...	...	...	...	...	...	26,723	...	4
...	...	...	...	...	...	...	...	...	...	30,628	...	5
...	...	...	...	...	...	...	...	...	...	30,638	...	6
...	...	...	...	...	...	...	...	...	...	48,284	..	7
...	...	..	...	...	...	...	...	...	...	43,545	...	8
...	...	...	...	...	...	...	...	...	...	33,300	...	9
...	...	...	...	...	...	...	...	...	...	15,577	...	1880
...	...	...	...	...	...	...	...	...	...	11,224	...	1
...	...	...	...	...	...	...	...	...	...	14,371	...	2
...	...	...	...	...	...	...	...	...	...	7,341	...	3
.	...	...	...	...	...	...	...	...	...	6,642	...	4
...	...	...	..	...	...	...	...	...	...	5,048	...	5
...	...	...	...	...	...	...	...	...	...	8,012	...	6
...	...	...	...	...	...	...	...	...	...	5,175	...	7
...	...	...	...	...	...	...	...	...	...	6,848	...	8
..	...	...	...	...	...	...	...	...	...	4,704	...	9
...	...	...	...	...	...	...	...	...	...	7,671	...	1890
...	...	...	...	...	...	...	...	...	...	14,912	...	1
...	...	...	...	...	...	[2]†	25	...	...	22,714	...	2
...	...	...	...	...	...	[2]†	4	...	...	11,744	...	3
..	...	...	...	...	...	...	...	...	...	15,274	...	4
...	...	...	...	...	...	[2]†	3	...	...	22,658	...	5
...	...	...	...	...	...	...	...	...	...	4,438	...	6
...	...	...	...	...	...	[2]†	209	...	...	4,532	...	7
...	...	...	...	1	1	...	...	...	...	7,060	...	8
...	...	[2]†	1	798	772	[2]†	50	...	...	66,611	...	9
...	...	...	...	355	350	[2]†	3	5	85	95,261	...	1900
...	...	...	...	971	969	...	...	...	4	171,453	...	1
...	...	...	...	12	12	...	...	[6]† 3	47	61,551	...	2
...	...	[5]†	10	110	127	...	...	[7]† 22	230	109,468	...	3
...	...	...	...	11	7	...	...	7	81	97,132	...	4
...	...	...	...	108	87	...	...	[8]† 80	5,856	192,251	...	5
...	...	...	...	86	65	...	...	10	1,035	222,621	...	6
...	...	...	...	26 *1,447	28 1,138	...	...	[9]† 100	1,587	402,906	...	7
...	...	[2]†	1,242	13 *9,612	11 7,747	[2]†	10	[10]†42	3,150	176,827	...	8
1	100	...	...	353 *85,647	183 93,781	...	...	[11]†263	735	282,650	...	9
2	190	...	...	3 *48,876	2 38,400	...	...	[12]†	100	200,106	...	1910
9	826	...	...	*40,063	29,344	...	...	[13]†14	407	197,439	...	1911
...	...	...	...	6 *42,602	6 30,721	...	...	[14]†28	3,172	204,149	...	1912
12	1,116	...	1,253	231,100	203,751	...	304	...	16,489	3,100,396	Total.	

* Bunker Coal. [7]† Antimony ore. [8]† Includes Tantalite, 18 tons, valued at £5,729.

[9]†Includes Antimony ore, 25 tons ... ... = £630
Scheelite, 4 tons ... ... = 140
N.E.I., 71 tons ... ... = 817
Total ... £1,587

[10]† Includes Tantalite ... ... = £400
N.E.I., 42 tons ... ... = £2,750
Total ... £3,150

[11]†Includes Other Concentrates, 29 tons ... = £108
N.E.I., 234 tons ... = £627
Total ... £735

[12]† Includes N.E.I., ½ ton ... ... = £100

[13]† Includes: Iron ore, 9 tons ... ... = 7
Ores, N.E.I., 5 tons ... ... = 400
Total ... £407

[14]† Includes Manganese, 2 tons ... ... = 4
N.E.I., 26 tons ... ... = 3,168
Total ... £3,172

PART III.—ALL MINES.

TABLE XXIII.

MILLING AND CYANIDING PLANTS ERECTED IN THE RESPECTIVE GOLDFIELDS, DISTRICTS, AND MINERAL FIELDS ON THE 31ST DECEMBER, 1912, AND THE TOTAL VALUE OF MINING MACHINERY.

Mining Centre and Lease or Area.	Name of Mine, Company, or Works.	Milling.										Cyaniding.			Value of all Mining Machinery.
		Batteries.	Other Mills.												
		Number of Heads of Stampers.	Prospecting Mills.	Ball Mills.	Krupp Mills.	Griffin Mills.	Huntington Mills.	Tremain Mills.	Flint Mills.	Other Crushers and Grinding Pans.	Puddlers.	Leaching Vats.	Agitating Vats.	Vacuum and Filter Presses.	
	KIMBERLEY GOLDFIELD.														
The Brockman. 141 A.C., M.A. 8	Mt. Bradley Tunnelling Claim ..	25	..	..	..	..	1	..	..	..	..	..	..	..	..
Ruby Creek. (61) M.A. 9	Ruby Queen	20	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**45**	..	..	..	..	**1**	..	..	..	..	..	..	..	**£5,000**
	PILBARA GOLDFIELD.														
	Marble Bar District.														
Bamboo Creek. 695	Bulletin	10	..	..	..	..	..	..	..	..	..	4	..	..	..
Lalla Rookh. R.C., 112	British Exploration of Australasia, Ltd.	..	..	..	..	..	..	..	..	..	..	10	..	..	..
Marble Bar. (716)	British Exploration of Australasia, Ltd.	5	..	..	..	..	..	..	..	..	..	..	..	..	..
⩚ *Warrawoona.* (505)	State Battery, Marble Bar	5	..	..	..	..	..	..	..	..	..	..	..	..	..
604	British Exploration of Australasia, Ltd.	10	..	..	..	..	..	..	..	..	..	..	..	..	..
M.A. 27	Klondyke Boulder G.M. Co., Ltd. ..	5	..	..	..	..	..	..	..	..	..	..	..	..	..
Yandicoogina. M.A. 26	Salgash Public Crushing Works ..	15	..	..	..	..	..	..	..	..	..	..	..	..	..
	Lady Adelaide Battery	10	..	..	..	..	..	..	..	..	..	4	..	..	..
	Total	**60**	..	..	..	..	..	..	..	..	..	**18**	..	..	**£11,355**
	Nullagine District.														
Eastern Creek. 176L, etc.,	Eastern Creek G.M. Co.	10	..	..	..	..	..	..	..	..	..	4	..	..	..
Middle Creek. 106L	Barton	10	..	..	..	..	..	..	..	1	..	2	..	..	..
Mosquito Ck. (95L) T.L.	(Sugrue)	..	..	..	..	..	..	..	..	..	..	2	..	..	..
20-*Mile Sandy Creek* ⩚9718	State Battery, 20-Mile Sandy Creek..	10	..	..	..	..	..	..	..	..	..	3	..	..	..
	Total	**30**	..	..	..	..	..	..	..	1	..	**11**	..	..	**£4,507**
	WEST PILBARA GOLDFIELD.														
Station Peak. 149	Prince Regent	10	..	..	..	..	..	..	..	..	..	5	..	..	..
Touranna. 155	Tauri Tom Tit	10	..	..	..	..	..	..	..	..	..	..	..	..	..
Weerianna. 151	Porteminna Battery	10	..	..	..	..	..	..	..	..	..	4	..	..	..
	Total	**30**	..	..	..	..	..	..	..	..	..	**9**	..	..	**£4,850**
	PEAK HILL GOLDFIELD.														
1P, etc.	Peak Hill Goldfield, Ltd.	30	..	..	..	..	..	..	..	2	..	6	..	4	..
⩚	State Battery, Mt. Egerton	5	..	..	..	..	..	..	..	..	..	..	..	..	..
⩚10258	State Battery, Ravelstone	5	..	..	..	..	..	..	..	2	..	..	..	..	..
⩚10258	Purcell's Works	..	..	..	..	..	..	..	..	..	..	4	..	..	..
	Total	**40**	..	..	..	..	..	..	..	**4**	..	**10**	..	**4**	**£9,915**

TABLE XXIII.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area.	NAME OF MINE, COMPANY, OR WORKS.	MILLING.										CYANIDING.			Value of all Mining Machinery.
		Batteries.	Other Mills.												
		Number of Heads of Stampers.	Prospecting Mills.	Ball Mills.	Krupp Mills.	Griffin Mills.	Huntington Mills.	Tremain Mills.	Flint Mills.	Other Crushers and Grinding Pans.	Puddlers.	Leaching Vats.	Agitating Vats.	Vacuum and Filter Presses.	
	EAST MURCHISON GOLDFIELD.														
	LAWLERS DISTRICT.														
Bronzewing.															
(1017)	Bronzewing	3	..	..	..	..	..	..	..	..	..	2	..	..	..
Kathleen Valley.															
113	Nil Desperandum	10	..	..	..	..	..	..	..	..	..	..	..	..	..
382	Yellow Aster G.M. Co., N.L.	10	..	..	..	..	..	..	..	..	..	4	..	..	..
Lake Darlot.															
626, etc.	Zangbar	10	..	..	..	..	..	..	..	..	..	6	2	..	..
⩚11723	State Battery, Lake Darlot	10	..	..	..	..	..	..	..	2	..	..	..	..	..
Lawlers.															
M.A., 24	Cinderella Battery	5	..	..	..	..	..	..	..	..	..	5	..	..	..
M.A. 11	Lawlers Public Battery	10	1	..	..	..	..	..	..	..	..	4	..	..	..
58, etc.	Northern Mines, Ltd.	40	..	..	..	..	..	..	..	..	2	6	5	3	..
(908)	Vivien Gem	5	..	..	..	..	..	..	..	..	..	..	..	..	..
Sir Samuel.															
1158, etc.	Bellevue leases	40	..	..	..	..	..	..	..	3	..	..	..	..	..
⩚	State Battery, Sir Samuel	5	..	..	..	..	..	..	..	..	..	3	..	..	..
	Total	**148**	**1**	..	..	..	..	..	..	**5**	**2**	**30**	**7**	**3**	**£42,474**
	WILUNA DISTRICT.														
Collavilla.															
71J, etc.	May Queen Reward, Ltd.	5	..	..	..	..	..	..	..	..	..	..	..	..	..
Wiluna.															
6J, etc.	Gwalia Consolidated, Ltd.	30	..	1	..	..	..	..	..	1	..	13	13	6	..
10J, etc.	Moonlight	10	..	..	..	..	..	..	..	3	..	8	2	..	..
2J, etc.	Wiluna G.Ms., Ltd.	25	..	..	..	..	..	..	..	3	..	9	3	1	..
M.A., 57J	Christensen's Battery	..	3	..	..	..	..	..	..	..	..	..	..	..	..
⩚9909	State Battery, Wiluna	10	..	..	..	..	..	..	..	..	..	4	..	..	..
	Total	**80**	**3**	**1**	..	..	..	..	..	**7**	..	**34**	**18**	**7**	**£88,133**
	BLACK RANGE DISTRICT.														
Birrigrin.															
128B	Pelerin	5	..	..	..	..	..	..	..	..	..	4	..	..	..
M.A., 8B	Reply Public Battery	5	..	..	..	..	..	..	..	..	..	4	..	..	..
Maninga Marley.															
203B	Havilah G.M. Co., N.L.	10	..	..	..	..	..	..	..	..	..	12	..	..	..
53B	Maninga Marley leases	10	..	..	..	..	..	..	..	..	..	5	..	..	..
Montagu.															
135B	Montagu Boulder	10	..	..	..	..	..	..	..	2	..	4	..	..	..
Sandstone.															
4B, etc.	Black Range Mining Co., N.L. ..	20	..	..	..	..	..	..	..	..	..	11	5	32	..
6B, etc.	Oroya Black Range, Ltd.	30	..	..	..	..	..	..	..	6	..	16	5	2	..
⩚5254	State Battery, Black Range ..	10	..	..	..	..	..	..	..	2	..	8	..	..	..
Youanme.															
526B, etc.	Yuanmi G.Ms., Ltd.	20	..	1	1	..	..	..	..	..	..	3	..	1	..
⩚12187	State Battery, Youanme	5	..	..	..	..	..	..	..	..	..	2	..	..	..
	Total	**125**	..	**1**	**1**	..	..	..	..	**10**	..	**69**	**10**	**35**	**£119,080**
	MURCHISON GOLDFIELD.														
	CUE DISTRICT.														
Barrambie.															
1458, etc.	Barrambie Ranges G.M. Co., N.L. ..	10	..	..	..	..	..	..	..	..	..	2	..	..	..
Cuddingwarra.															
(1804)	Emily	3	..	..	..	..	..	..	..	..	..	..	..	..	..
(595)	Victory United	10	..	..	..	..	..	..	..	..	..	6	..	..	..
T.A., 24 etc.	Wright's Plant	..	..	..	..	..	..	..	..	..	..	6	..	..	..
Cue.															
203, etc.	Cue No. 1	20	..	..	..	..	..	..	..	..	..	8	..	..	..
1020	Gem of Cue Extended	15	..	..	..	..	..	..	..	..	..	5	..	..	..
Eelya.															
(1696)	Jasper Queen	5	..	..	..	..	..	..	..	..	..	4	..	..	..
Errolls.															
1743	Great Saddle	10	..	..	..	..	..	..	..	..	..	8	..	..	..
Mindoolah.															
(1609)	Mindoolah Battery..	10	..	..	..	..	..	..	..	..	..	3	..	..	..
Tuckanarra.															
⩚10256	State Battery, Tuckanarra	10	..	..	..	..	..	..	..	..	..	4	..	..	..
	Total	**93**	..	..	..	..	..	..	..	..	..	**46**	..	..	**£30,135**

TABLE XXIII.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area.	Name of Mine, Company, or Works.	Milling.										Cyaniding.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.												
		Number of Heads of Stampers.	Prospecting Mills.	Ball Mills.	Krupp Mills.	Griffin Mills.	Huntington Mills.	Tremain Mills.	Flint Mills.	Other Crushers and Grinding Pans.	Puddlers.	Leaching Vats.	Agitating Vats.	Vacuum and Filter Presses.	
	MURCHISON GOLDFIELD—*contd.*														
	NANNINE DISTRICT.														
Abbotts.															
(171N)	Mt. Vranizan	10	..	..	..	..	..	..	..	..	..	..	..	..	..
Burnakurra.															
509N, etc.	Federal City leases	10	..	..	..	..	..	..	..	..	..	5	..	..	..
408N, etc.	New Alliance leases	25	..	..	..	..	..	..	..	..	..	2	..	..	..
Chesterfield.															
P.A. 639	W. H. Newton	10	..	..	..	..	..	..	..	..	..	4	..	..	..
Gabanintha.															
1179N, etc.	Mountain View leases	5	..	..	..	..	..	..	..	..	..	2	1	..	..
1068N	New Brew	5	..	..	..	..	..	..	..	..	..	..	..	..	..
1016N	Tumbulgum	10	..	..	..	..	..	..	..	..	..	..	..	..	..
Garden Gully.															
928N	Kyarra G.M. N.L.	10	..	..	..	..	..	..	..	2	..	..	..	..	..
Gum Creek.															
953N	Connecticut	5	..	..	..	..	..	..	..	..	..	4	..	..	..
Meekatharra.															
597N, etc.	Commodore G.M. Co., N.L.	10	..	..	..	..	..	..	..	..	..	4	..	..	..
477N, etc.	Fenian leases	15	..	..	..	..	..	..	..	5	1	..	4	1	..
475N, etc.	Ingliston Consols Extended ..	10	..	..	..	..	..	..	..	1	..	5	..	..	..
398N, etc.	Ingliston Extended G.Ms., Ltd. ..	10	..	..	..	..	..	..	..	2	..	5	3	1	..
533N, etc.	Marmont	10	..	..	..	..	..	..	..	..	..	6	..	..	..
⩚9142	State Battery, Meekatharra	5	..	..	..	..	..	..	..	1	..	3	..	..	..
Nannine.															
1039N, etc.	Irymple and Champion South ..	4	..	..	..	..	..	..	..	..	..	..	..	..	..
16N, etc.	Nannine leases	10	..	..	..	..	..	..	..	2	..	4	..	..	..
984N	Welcome Stranger	10	..	..	..	..	..	..	..	..	..	..	..	..	..
⩚10910	State Battery, Nannine	5	..	..	..	..	..	..	..	..	..	5	..	..	..
Quinns.															
622N	Phoenix	5	..	..	..	..	..	..	..	..	..	..	..	..	..
⩚	State Battery, Quinns	5	..	..	..	..	..	..	..	..	..	..	..	..	..
Yaloginda.															
937N	Hornsby	10	..	..	..	..	..	..	..	..	..	..	..	..	..
709N	Rocklee	10	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**209**	..	..	..	..	..	..	..	**13**	**1**	**49**	**8**	**2**	**£99,133**
	DAY DAWN DISTRICT.														
Day Dawn.															
389D, etc.	Creme d'Or leases	5	..	..	..	..	..	..	..	..	..	5	2	..	..
1D, etc.	Great Fingall Consolidated, Ltd. ..	40	..	..	..	..	..	..	..	21	..	18	11	5	..
(320D)	Mt. Fingall	5	..	..	..	..	..	..	..	..	..	..	..	..	..
138D, etc.	Murchison Associated, Ltd.	10	..	..	..	..	..	..	..	..	..	4	2	..	..
	Total	**60**	..	..	..	..	..	..	..	**21**	..	**27**	**15**	**5**	**£207,400**
	MOUNT MAGNET DISTRICT.														
Boogardie.															
696M	Sirdar	5	..	..	..	..	..	..	..	..	..	3	..	..	..
⩚9769	State Battery, Boogardie	10	..	..	..	..	..	..	..	..	..	9	..	..	..
⩚9769	Morning Star Plant	..	..	..	..	..	..	..	..	..	..	6	..	..	..
Lennonville.															
964M	Empress	5	..	..	..	..	..	..	..	1	..	3	..	..	..
1061M	Great Boulder No. 1 Ltd.	..	..	..	..	..	..	..	..	..	1	..	5	1	..
(57M)	Welcome	..	..	..	..	..	..	1	..	..	..	..	..	..	..
(971M)	Wheel of Fortune	..	3	..	..	..	..	..	..	..	..	..	..	..	..
⩚7499	State Battery, Lennonville	10	..	..	..	..	..	..	..	..	..	4	..	..	..
Mt. Magnet.															
(953M)	Britannia	..	..	..	..	..	..	1	..	..	..	..	..	..	..
1032M	Early Bird	5	..	..	..	..	..	..	..	..	..	..	..	..	..
752M, etc.	Great Boulder No. 1, Ltd.	10	..	..	..	..	..	..	..	4	..	..	..	..	..
988M	Morning Star G.Ms., Ltd.	10	..	..	..	..	..	..	..	..	..	6	..	..	..
	Total	**55**	**3**	..	..	..	..	**2**	..	**5**	**1**	**31**	**5**	**1**	**£37,401**

TABLE XXIII.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area.	Name of Mine, Company, or Works.	Milling.										Cyaniding.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.												
		Number of Heads of Stampers.	Prospecting Mills.	Ball Mills.	Krupp Mills.	Griffin Mills.	Huntington Mills.	Tremain Mills.	Flint Mills.	Other Crushers and Grinding Pans.	Puddlers.	Leaching Vats.	Agitating Vats.	Vacuum and Filter Presses.	
	YALGOO GOLDFIELD.														
Field's Find.															
667	Golden Eagle	3	..	..	..	..	..	..	..	..	..	..	..	..	..
414, etc.	Reward G.Ms., Ltd.	20	..	..	..	..	..	..	..	..	..	6	..	..	..
Goodingnow.															
606	Payne's Find Development Co., N.L.	5	..	..	..	..	..	..	..	..	..	..	..	..	..
⩚	State Battery, Payne's Find.. ..	5	..	..	..	..	..	..	..	1	..	3	..	..	..
Gullewa.															
171, etc.	Victory United G.M. Co., N.L. ..	10	..	..	..	..	..	..	..	..	..	..	..	..	..
Pinyalling.															
501, etc.	Westralia United Goldfields, Ltd. ..	10	..	..	..	..	..	..	..	..	..	5	..	..	..
Yalgoo.															
495, etc.	Ivanhoe G.M. Co., N.L.	5	..	..	..	..	..	..	..	..	..	..	..	..	..
(549)	Royal Mint	5	..	..	..	..	..	..	..	..	..	..	..	..	..
Yuin.															
409, etc.	Bullrush Gold Estates, N.L. ..	10	..	..	..	..	..	..	..	..	..	6	..	..	..
	Total	**73**	..	..	..	..	..	..	..	**1**	..	**20**	..	..	**£27,580**
	MT. MARGARET GOLDFIELD.														
	Mt. Morgans District.														
Korong.															
313F	Royal Flush	10	..	..	..	..	..	..	..	..	..	..	..	..	..
Morgans.															
299F	Multi-Millionaire	5	..	..	..	..	..	..	..	..	..	..	..	..	..
29F, etc.	Rowan's Find G.M. Co., N.L... ..	10	..	..	..	..	..	..	..	..	..	..	..	..	..
5F, etc.	Westralia Mt. Morgans Mines, N.L. ..	70	..	..	..	..	..	..	..	..	..	32	10	1	..
Mt. Margaret.															
(174F)	Mt. Margaret Lake View ..	2	..	..	..	..	..	..	..	..	..	..	..	..	..
314F	Mt. Morven	5	..	..	..	..	..	..	..	..	..	3	..	..	..
Murrin Murrin.															
208F	Alix Junior	5	..	..	..	..	..	..	..	1	..	..	..	..	..
194F, etc.	Hills Proprietary, Ltd.	25	..	..	..	..	..	..	..	2	..	6	5	1	..
	Total	**132**	..	..	..	..	..	..	..	**3**	..	**41**	**15**	**2**	**£32,900**
	Mt. Malcolm District.														
Diorite King.															
1179C	Bullfinch West G.M. Co., N.L. ..	5	..	..	..	..	..	..	..	..	..	4	..	..	..
Doyle's Well.															
(1261C)	Bannockburn	5	..	..	..	..	..	..	..	..	..	5	..	..	..
Leonora.															
(218C, etc.)	Gwalia Proprietary, Ltd.	40	..	..	..	..	..	..	..	..	..	12	..	..	..
195C, etc.	Leonora Gold Blocks	10	..	..	..	..	..	..	..	..	..	5	..	..	..
1424C, etc.	Leonora Main Reefs, Ltd.	10	..	..	..	..	..	..	..	..	..	5	..	..	..
1217C	Ping Pong	10	..	..	..	..	..	..	..	..	..	..	..	..	..
190C, etc.	Sons of Gwalia, Ltd.	50	..	..	..	..	..	..	..	21	..	16	16	4	..
198C, etc.	Sous of Gwalia, Ltd. (South)	10	..	..	..	..	..	..	..	4	..	..	4	2	..
⩚7121	State Battery, Leonora	10	..	..	..	..	..	..	..	2	..	5	3	1	..
Malcolm.															
1175C	Malcolm Prospecting Co., N.L. ..	10	..	..	..	..	..	..	..	..	..	2	..	..	..
991C	Richmond Gem	10	..	..	..	..	..	..	..	1	..	4	..	..	..
W.R., 84C	Hill and party	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Mertondale.															
638C, etc.	Mertondale G.M. Syndicate ..	10	..	..	..	..	..	..	..	1	..	8	2	..	..
Mt. Clifford.															
(M.A., 9C)	Mt. Clifford Battery	10	..	..	..	..	..	..	..	..	..	2	..	..	..
1329C	Victory No. 1	5	..	..	..	..	..	..	..	..	..	..	..	..	..
Pig Well.															
⩚9681	Pig Well State Battery	10	..	..	..	..	..	..	..	1	..	4	..	..	..
Randwick.															
987C	Anglo-Saxon..	5	..	..	..	..	..	..	..	..	..	..	..	..	..
978C	Randwick	10	..	..	..	..	..	..	..	..	..	2	..	..	..
Webster's Find.															
(1224C)	Webster's	5	..	..	..	..	..	..	..	..	..	..	..	..	..
Wilson's Patch															
1120C	Great Western	10	..	..	..	..	..	..	..	1	..	6	..	..	..
	Total	**235**	..	..	..	..	..	**1**	..	**31**	..	**80**	**25**	**7**	**£199,494**

TABLE XXIII.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area.	Name of Mine, Company, or Works.	Milling.										Cyaniding.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.												
		Number of Heads of Stampers.	Prospecting Mills.	Ball Mills.	Krupp Mills.	Griffin Mills.	Huntington Mills.	Tremain Mills.	Flint Mills.	Other Crushers and Grinding Pans.	Puddlers.	Leaching Vats.	Agitating Vats.	Vacuum and Filter Presses.	
	MT. MARGARET GOLDFIELD—*continued.*														
	MT. MARGARET DISTRICT.														
Burtville.															
943T, etc.	Mikado G.M. Co., Ltd.	5	..	..	..	..	..	..	..	..	..	2	..	..	..
(1871T)	Rock of Ages	10	..	..	..	..	..	..	..	..	..	..	..	..	..
1644T, etc.	Specimen Hill	5	..	..	..	..	..	..	..	..	..	..	..	..	..
M.A., 17T	Sunrise	8	..	..	..	..	..	..	..	..	..	..	..	..	..
781T	Westralia United Goldfields, Ltd. ..	5	..	..	..	..	..	..	..	..	..	..	..	..	..
⩚8914	State Battery, Burtville	10	..	..	..	..	..	..	..	1	..	3	..	..	..
Erlistoun.															
M.A., 18T	Little Doris	5	..	..	..	..	..	..	..	..	..	..	..	..	..
1875T	Mulga Queen	10	..	..	..	..	..	..	..	..	..	4	..	..	..
1665T	Westralia Tasmania	5	..	..	..	..	..	..	..	..	..	4	..	..	..
Laverton.															
371T, etc.	Augusta G.M. Co., N.L.	10	..	..	..	..	..	..	..	..	..	4	..	..	..
1797T	Craiggimore	10	..	..	..	..	..	..	..	..	1	6	4	..	..
829T, etc.	Ida H. G.M. Co., Ltd.	10	..	..	..	..	..	..	..	1	..	6	..	..	..
806T, etc.	Lancefield G.M. Co., Ltd.	50	..	5	..	..	..	..	..	8	..	..	7	6	..
1840T, etc.	Mary Mac G.M. Co., N.L.	10	..	..	..	..	..	..	..	1	..	7	..	..	..
⩚8386	State Battery Laverton	10	..	..	..	..	..	..	..	1	..	3	..	..	..
	Total	**163**	..	5	..	..	..	..	..	**12**	**1**	**39**	**11**	**6**	**£126,278**
	NORTH COOLGARDIE GOLDFIELD.														
	MENZIES DISTRICT.														
Comet Vale.															
5217Z	Gladsome	10	..	..	..	..	..	..	..	1	..	..	..	..	..
5300Z	Happy Jack	..	..	..	..	..	1	..	..	..	..	..	..	..	..
5211Z, etc.	Sand Queen G.Ms., Ltd.	10	..	..	..	..	..	..	..	2	..	9	..	..	..
Menzies.															
5354Z	Balkis	5	..	..	..	..	..	..	..	..	..	4	..	..	..
T.A., 46Z	(Edmunds & Gidney)	..	..	..	..	..	..	..	..	..	..	3	..	..	..
5372Z	Florence G.Ms., Ltd.	10	..	..	..	..	..	..	..	..	..	3	..	..	..
5302Z	Lady Harriet	5	..	..	..	..	..	..	..	..	..	3	..	..	..
2835Z	Lady Sherry	5	..	..	..	..	..	..	..	..	..	..	..	..	..
4855Z	Lusitania	5	..	..	..	..	..	..	..	..	..	..	..	..	..
4895Z	Maranoa	10	..	..	..	..	..	..	..	1	..	6	..	..	..
4913Z, etc.	Menzies Consolidated G.Ms., Ltd. ..	20	..	..	..	..	..	..	..	..	..	16	3	1	..
2820Z	Menzies Gold Mine	10	..	..	..	..	..	..	..	..	..	4	..	..	..
T.A. 37Z	Menzies Milling Co., Ltd.	15	..	..	..	..	..	..	..	2	..	3	3	1	..
3100Z, etc.	Menzies Mining and Exploration Corporation, Ltd.	10	..	..	..	..	..	..	..	..	..	8	..	1	..
⩚10153	State Battery, Menzies	10	..	..	..	..	..	..	..	1	..	3	3	1	..
Mt. Ida.															
T.A., 41Z	(Cully & Salkeld)	..	..	..	..	..	..	..	..	..	..	5	..	..	..
5243Z, etc.	Mt. Ida Meteor leases	5	..	..	..	..	..	..	..	..	..	5	..	..	..
⩚10173	State Battery, Mt. Ida	5	..	..	..	..	..	..	..	1	..	..	..	..	..
	Total	**135**	..	..	..	..	1	..	..	**8**	..	**72**	**9**	**4**	**£68,248**
	ULARRING DISTRICT.														
Davyhurst.															
854U, etc.	Callion G.M. Co., (W.A.), N.L. ..	10	..	..	..	..	..	..	..	..	..	4	..	..	..
468U, etc.	Golden Pole G.Ms., Ltd.	20	..	..	..	..	..	..	..	..	..	4	3	1	..
613U, etc.	Great Ophir Gold Corporation, N.L. ..	..	..	..	..	..	1	..	..	2	..	12	..	..	..
898U, etc.	Lights of Israel	..	..	..	..	..	1	..	..	..	..	3	..	..	..
438U, etc.	Westralia Waihi G.Ms., N.L.	10	..	..	..	..	..	..	..	3	..	6	..	..	..
Mulline.															
123U	Riverina	10	..	..	..	..	..	..	..	..	..	3	..	..	..
600U	Riverina South	5	..	..	..	..	..	..	..	..	..	4	..	..	..
⩚7250	State Battery, Mulline	20	..	..	..	..	..	..	..	2	..	5	2	1	..
Mulwarrie.															
⩚8045	State Battery, Mulwarrie	10	..	..	..	..	..	..	..	2	..	3	..	..	..
	Total	**85**	..	..	..	..	2	..	..	**9**	..	**44**	**5**	**1**	**£31,277**

TABLE XXIII.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area.	Name of Mine, Company, or Works.	Milling.										Cyaniding.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.												
		Number of Heads of Stampers.	Prospecting Mills.	Ball Mills.	Krupp Mills.	Griffin Mills.	Huntington Mills.	Tremain Mills.	Flint Mills.	Other Crushers and Grinding Pans.	Puddlers.	Leaching Vats.	Agitating Vats.	Vacuum and Filter Presses.	
	NORTH COOLGARDIE GOLDFIELD—*continued.*														
	NIAGARA DISTRICT.														
Desdemona.															
M.A., 48G	Westralian Machinery Corporation, Ltd.	5	..	..	..	..	..	..	..	..	..	..	..	..	..
Kookynie.															
320G	Champion	10	..	..	..	..	..	..	..	..	..	..	..	..	..
26G, etc.	Cosmopolitan Proprietary, Ltd. ..	10	..	..	..	..	..	..	..	2	..	12	..	..	..
Niagara.															
518G, etc.	Eaglehawk Heather	10	..	..	..	..	..	..	..	..	..	4	..	..	..
734G, etc.	Lubra Queen, G.M. Co., N.L. ..	5	..	..	..	..	..	..	..	..	..	..	..	..	..
419G, etc.	Orion Mines, Ltd.	10	..	..	..	..	..	..	..	..	..	6	..	..	..
⩚4797	State Battery, Niagara	10	..	..	..	..	..	..	..	2	..	3	..	..	..
Tampa.															
753G, etc.	Golden Butterfly G.M. Co., N.L. ..	10	..	..	..	..	..	..	..	1	..	5	..	..	..
M.A., 59G	Grafter	5	..	..	..	..	..	..	..	..	..	4	..	..	..
	Total	**75**	..	..	..	..	..	..	..	**5**	..	**34**	..	..	**£24,343**
	YERILLA DISTRICT.														
Edjudina.															
401R, etc.	Edjudina Goldfields, Ltd.	10	..	..	..	..	..	..	..	1	..	3	..	..	..
539R, etc.	Senate	5	..	..	..	..	..	..	..	..	..	..	..	..	..
Linden.															
928R, etc.	Great Carbine	6	..	..	..	..	..	..	..	..	..	..	..	..	..
903R, etc.	Westralia United Goldfields, Ltd. ..	5	..	..	..	..	..	..	..	1	..	2	1	..	..
⩚	State Battery, Linden	10	..	..	..	..	..	..	..	2	..	..	..	..	..
Pinjin.															
⩚10190	State Battery, Pinjin	5	..	..	..	..	..	..	..	1	..	3	..	..	..
Yarri.															
⩚10255	State Battery, Yarri	10	..	..	..	..	..	..	..	1	..	4	..	..	..
Yerilla.															
W.R., 28R	State Battery, Yerilla	5	..	..	..	..	..	..	..	..	..	3	..	..	..
Yunda-mindera.															
931R	Battles Ville	5	..	..	..	..	..	..	..	..	..	..	..	..	..
(541R, etc.)	Golden Treasure leases	10	..	..	..	..	..	..	..	..	..	4	2	..	..
(450R, etc.)	Potosi leases	10	..	..	..	..	1	..	..	..	..	4	..	..	..
	Total	**81**	..	..	..	..	**1**	..	..	**6**	..	**23**	**3**	..	**£25,067**
	BROAD ARROW GOLDFIELD.														
Bardoc.															
T.A., 28W	Vettersburg Cyanide Works ..	..	..	..	..	..	..	..	..	..	..	7	..	..	..
Black Flag.															
1384W	Lady Bountiful	3	..	..	..	..	..	..	..	..	..	..	..	..	..
1384W	Westralian Machinery Corporation ..	10	..	..	..	..	..	..	..	..	..	..	..	..	..
Broad Arrow.															
(1209W)	Dixie	5	..	..	..	..	..	..	..	..	..	..	..	..	..
1391W	Duke	10	..	..	..	..	..	..	..	..	..	..	..	..	..
(75W)	Liberty Extended	10	..	..	..	..	..	..	..	..	..	..	..	..	..
Carnage.															
M.A., 22W	Regan's Carnage Battery ..	10	..	..	..	..	..	..	..	..	..	4	..	..	..
Paddington.															
1639W	Mount Corlic	10	..	..	..	..	..	..	..	..	..	..	..	..	..
W.R., 68W	Northey's Venture Mill	10	..	..	..	..	1	..	..	..	..	5	..	..	..
Siberia.															
1286W	Golden	..	1	..	..	..	..	..	..	..	..	..	..	..	..
1289W	Lady Evelyn	5	..	..	..	..	..	..	..	..	..	..	..	..	..
M.A., 29W	Pole Battery	5	..	..	..	..	..	..	..	..	..	..	..	..	..
M.A., 23W	Slippery Gimlet	10	..	..	..	..	..	..	..	1	..	3	..	..	..
1424W, etc.	Victorious: Associated Northern Blocks (W.A.), Ltd.	..	..	..	..	..	4	..	..	2	..	6	3	2	..
⩚10254	State Battery, Siberia	5	..	..	..	..	..	..	..	..	..	..	4	3	..
	Total	**93**	**1**	..	..	..	**5**	..	..	**3**	..	**28**	**7**	**5**	**£45,106**

TABLE XXIII.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area.	NAME OF MINE, COMPANY, OR WORKS.	MILLING.										CYANIDING.			Value of all Mining Machinery.
		Batteries.	Other Mills												
		Number of Heads of Stampers.	Prospecting Mills.	Ball Mills.	Krupp Mills.	Griffin Mills.	Huntington Mills.	Tremain Mills.	Flint Mills.	Other Crushers and Grinding Pans.	Puddlers.	Leaching Vats.	Agitating Vats.	Vacuum and Filter Presses.	
	NORTH-EAST COOLGARDIE GOLDFIELD.														
	KANOWNA DISTRICT.														
Gindalbie.															
1047x	Eclipse	5	..	..	..	..	..	..	..	..	..	..	..	..	..
(1123x)	Gindalbie	10	..	..	..	..	..	..	..	..	..	..	..	..	..
394x, etc.	Kalgoorlie Foundry, Ltd.	10	..	..	..	..	..	..	..	3	..	12	..	..	..
1174x, etc.	United	5	..	..	..	..	..	..	..	..	..	..	..	..	..
Gordon.															
891x	Sirdar	10	..	..	..	..	..	..	..	..	..	..	..	..	..
Kanowna.															
M.A., 45x	Donnan's Works	..	3	..	..	..	..	..	..	..	..	..	..	..	..
1302x	Golden Valley Cyanide Works	..	..	..	..	..	..	..	..	..	..	..	4	..	..
(918x)	Government Well	3	..	..	..	..	..	..	..	..	..	..	..	..	..
M.A., 19x	Martin's Public Battery	15	..	..	..	..	..	..	..	..	..	8	..	..	..
M.A., 43x	Monmouth Works	..	..	..	..	..	..	..	..	..	..	4	..	..	..
M.A., 39x	Mudlark Works	..	..	..	..	..	..	..	..	..	..	..	..	..	..
12x, etc.	North White Feather G.Ms., Ltd.	60	..	..	..	..	..	..	..	..	..	16	..	..	..
Q.C., 57x	Reidel & Norton's Works	10	..	..	..	..	..	..	..	..	..	6	..	..	..
Mulgarrie.															
1228x	Lady Pratt	10	..	..	..	..	..	..	..	..	..	3	..	..	..
	Total	**138**	**3**	..	..	..	..	..	..	**3**	..	**49**	**4**	..	**£27,220**
	KURNALPI DISTRICT.														
Kurnalpi.															
M.A., 2K	Billy Billy	5	..	..	..	..	..	..	..	..	..	..	..	..	..
(314K)	Lady of the Lake	..	..	..	..	..	..	..	..	..	1	..	..	..	..
Mulgabbie.															
M.A., 3K	Glover's Works	..	1	..	..	..	..	..	..	..	..	..	..	..	..
	Total	5	**1**	..	..	..	..	..	..	..	**1**	..	..	..	**£355**
	EAST COOLGARDIE GOLDFIELD.														
	EAST COOLGARDIE DISTRICT.														
Boorara.															
3908E, etc.	Golden Ridge G.M. Co., Ltd.	20	..	..	..	..	..	..	..	..	..	6	4	1	..
Boulder.															
38E, etc.	Associated G.Ms. of W.A., Ltd.	10	..	..	12	..	..	..	..	20	..	..	6	9	..
49E, etc.	Associated Northern Blocks (W.A.), Ltd.	..	..	3	..	..	..	..	..	8	..	..	5	1	..
352E, etc.	Chaffers G.M. Co., Ltd.	..	..	..	3	..	..	..	..	8	..	..	4	4	..
13E, etc.	Croesus South G.Ms., Ltd.	20	..	..	..	..	..	..	..	..	..	6	..	..	..
(3880E)	Devon Consols Mine	10	..	..	..	..	..	..	..	..	..	..	..	..	..
351E, etc.	Golden Horseshoe Estates Co., Ltd.	170	..	1	..	..	..	..	15	30	1	20	22	20	..
50E, etc.	Great Boulder No. 1, Ltd.	10	..	..	..	..	..	..	..	..	1	6	..	..	..
66E, etc.	Great Boulder Perseverance G.M. Co., Ltd.	..	..	..	8	..	..	..	2	21	..	..	24	13	..
16E, etc.	Great Boulder Proprietary G.Ms., Ltd.	..	1	4	..	13	..	..	..	29	1	..	23	17	..
3643E, etc.	Hainault Gold Mine, Ltd.	40	..	..	..	..	..	..	..	13	..	36	8	2	..
M.A., 4E	Hannans Central Battery	20	..	..	..	..	..	..	..	1	..	14	3	2	..
4317E, etc.	Idaho leases	5	..	..	..	..	..	..	..	..	..	5	..	..	..
946E	Ironsides North	10	..	..	..	..	..	..	..	1	..	7	..	..	..
31E, etc.	Ivanhoe Gold Corporation, Ltd.	100	..	..	..	..	..	..	2	22	..	32	11	9	..
22E, etc.	Kalgurli G.Ms., Ltd.	..	..	9	..	..	..	..	..	22	..	..	16	9	..
16E, etc.	Lake View and Star, Ltd.	75	..	..	1	..	..	..	8	28	..	..	27	18	..
75E	Lake View South, Ltd.	..	..	..	..	..	1	..	..	..	..	6	..	..	..
35E, etc.	New North Boulder G.M., Ltd.	..	..	..	..	..	1	..	..	..	..	4	..	..	..
444E, etc.	North Kalgurli Co., Ltd.	20	..	..	..	..	..	..	..	..	..	9	3	1	..
Boulder.															
410E, etc.	Oroya Links, Ltd.	55	..	2	..	..	..	..	6	3	..	..	13	6	..
1208E, etc.	South Kalgurli G.Ms., Ltd.	..	..	..	4	..	..	..	..	7	..	..	5	7	..
4423E	White Hart Battery	10	..	..	..	..	..	..	..	..	..	5	..	..	..
Feysville.															
Block 50	Hampton Properties, Ltd.	5	..	..	..	..	..	..	..	..	..	..	..	..	..
Kalgoorlie.															
796E, etc.	Bonnie Lass leases (Raven Battery)	10	..	..	..	..	..	..	..	..	..	6	..	..	..
M.A., 5E	Brownhill Consols, Ltd.	20	..	..	..	..	..	..	..	..	..	18	2	2	..
4293E	Golden Dream G.M. Co., N.L.	..	..	..	..	..	1	..	..	..	..	6	..	..	..
1694E, etc.	Golden Zone leases	15	..	..	..	..	..	..	..	2	..	8	..	..	..
1163E, etc.	Hannan's Consols leases	..	..	..	..	..	2	..	..	..	..	10	..	..	..
943E, etc.	Hannan's Proprietary, Ltd.	..	..	..	..	..	3	..	..	..	..	12	..	..	..
97E, etc.	Hannans Reward, Ltd.	20	..	..	..	..	..	..	..	..	..	7	..	..	..
4001E, etc.	Hidden Secret	5	..	1	..	..	..	..	..	..	..	7	..	..	..
M.A., 2E	Kalgoorlie Gold Recovery Co., Ltd.	..	..	1	..	..	..	..	..	..	..	4	5	2	..
4347E	Mystery	..	..	..	..	..	1	..	..	..	..	3	..	..	..
4037E, etc.	Westralia United Goldfields, Ltd.	15	..	..	..	..	..	..	..	..	..	5	..	..	..
	Total	**665**	**1**	**21**	**28**	**13**	**9**	..	**33**	**215**	**3**	**242**	**181**	**123**	**£1,700,485**

TABLE XXIII.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area.	Name of Mine, Company, or Works.	Milling.										Cyaniding.			Value of all Mining Machinery.
		Batteries.	Other Mills.												
		Number of Heads of Stampers.	Prospecting Mills.	Ball Mills.	Krupp Mills.	Griffin Mills.	Huntington Mills.	Tremain Mills.	Flint Mills.	Other Crushers and Grinding Pans.	Puddlers.	Leaching Vats.	Agitating Vats.	Vacuum and Filter Presses.	
	EAST COOLGARDIE GOLDFIELD—*continued.*														
	BULONG DISTRICT.														
Bulong.															
1067Y	Southern Cross	10	..	..	..	..	..	..	..	..	..	5	..	..	..
	Total	**10**	..	..	..	..	..	..	..	..	..	**5**	..	..	**£3,000**
	COOLGARDIE GOLDFIELD.														
	COOLGARDIE DISTRICT.														
Bonnievale.															
(595)	Gem lease	15	..	..	..	..	..	..	..	..	..	2	..	..	..
4313	Vale of Coolgardie	10	..	..	..	..	..	..	..	..	..	5	..	..	..
(144, etc.)	Westralia and East Extension Mines, Ltd.	40	..	..	..	..	..	..	..	1	..	27	2	..	..
Burbanks.															
134, etc.	Burbanks Birthday G.Ms., Ltd.	60	..	..	..	..	..	..	..	..	..	6	..	..	..
2985, etc.	Burbanks Main Lode (1904) Ltd.	20	..	..	..	..	..	..	..	..	..	12	..	..	..
2160	Lady Robinson G.M. Co., N.L.	10	..	..	..	..	..	..	..	..	..	..	..	..	..
Coolgardie.															
(late 336)	Carswells Cyanide Works	..	..	..	..	..	..	..	..	..	..	6	..	..	..
A 9435	Coolgardie Slimes Plant	..	..	..	..	..	..	..	..	..	..	8	..	..	..
(4392)	Garden Gully	10	..	..	..	..	..	..	..	..	..	1	..	..	..
(73, etc.)	Griffiths leases	10	..	..	..	..	..	..	..	..	..	8	..	..	..
T.A., 73	Howells Cyanide Works	..	..	..	..	..	..	..	..	..	..	3	..	..	..
(4297)	King Solomon	10	..	..	..	..	..	..	..	..	..	..	..	..	..
133, etc.	New Bayley's Mines, Ltd.	10	..	..	..	..	..	..	..	..	..	8	..	..	..
4152, etc.	Queen's Cross leases	11	..	..	..	..	..	..	..	..	..	..	..	..	..
(3918)	Redemption	10	..	..	..	..	..	..	..	..	..	..	..	..	..
33, etc.	Tindals Coolgardie G.Ms., N.L.	20	..	..	..	..	..	..	..	..	..	20	..	..	..
(4377)	Trude's Works	10	..	..	..	..	..	..	..	..	..	2	..	..	..
A 9435	State Battery, Coolgardie	10	..	..	..	..	..	..	..	1	..	3	..	..	..
Eundynie.															
4253, etc.	Hidden Secret North	10	..	..	..	..	..	..	..	..	..	6	..	..	..
Gibraltar.															
4418	Reform	5	..	..	..	..	..	..	..	..	..	5	..	..	..
Gnarlbine.															
(4401)	Baroota Wonder	10	..	..	..	..	..	..	..	..	..	..	..	..	..
Higginsville.															
4184	Sons of Erin	10	..	..	..	..	..	..	..	..	..	6	..	..	..
Londonderry.															
(4310)	Grosmont	5	..	..	..	..	..	..	..	2	..	..	..	..	..
Red Hill.															
(4331)	Edquist	..	..	..	..	..	..	..	..	6	..	..	..	..	..
Widgiemooltha.															
M.A., 63	Highgate Works	3	..	..	..	..	1	..	..	..	..	2	..	..	..
3906	Yorkshire Lass	3	..	..	..	..	..	..	..	..	..	2	..	..	..
	Total	**302**	..	..	..	..	**1**	..	..	**10**	..	**132**	**2**	..	**£101,472**
	KUNANALLING DISTRICT.														
Balgarrie.															
M.A., 13s	Stanley Battery	5	..	..	..	..	..	..	..	..	..	9	..	..	..
Carbine.															
33s	Carbine	10	..	..	..	..	..	..	..	2	..	..	..	..	..
841s, etc.	Homeward G.M. Co., Ltd.	..	..	2	..	..	..	..	..	1	..	..	..	..	..
Dunnsville.															
(17s)	North Coolgardie	20	..	..	..	..	..	..	..	..	..	4	..	..	..
Jourdie Hills.															
786s, etc.	Jourdie Enterprise G.M. Syndicate	5	..	..	..	..	..	..	..	..	..	6	..	..	..
369s	Pride of Jourdie	10	..	..	..	..	..	..	..	..	..	4	..	..	..
514s	Pride of Jourdie, North	5	..	..	..	..	..	..	..	..	..	4	..	..	..
Kintore.															
M.A., 14s	Hands Across the Sea	5	..	..	..	..	..	..	..	..	..	5	..	..	..
25-Mile.															
696s	Blue Bell	5	..	..	..	..	..	..	..	..	..	7	..	..	..
580s	Shamrock	5	..	..	..	..	..	..	..	..	..	5	..	..	..
645s	Star of Fremantle	10	..	..	..	..	..	..	..	..	..	4	..	..	..
846s	Swallow	5	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**85**	..	**2**	..	..	..	..	..	**3**	..	**48**	..	..	**£18,355**

TABLE XXIII.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area.	Name of Mine, Company, or Works.	Milling.										Cyaniding.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.												
		Number of Heads of Stampers.	Prospecting Mills.	Ball Mills.	Krupp Mills.	Griffin Mills.	Huntington Mills.	Tremain Mills.	Flint Mills.	Other Crushers and Grinding Pans.	Puddlers.	Leaching Vats.	Agitating Vats.	Vacuum and Filter Presses.	
	YILGARN GOLDFIELD.														
Golden Valley.															
M.A., 11	Violet Battery	5	..	..	..	..	..	..	..	..	..	5	..	..	..
Greenmount.															
503	Greenmount	10	..	..	..	..	..	..	..	..	..	6	..	..	..
550	Sunbeam	5	..	..	..	..	..	..	..	..	..	12	..	..	..
Hope's Hill.															
M.A., 14	Lakeside Battery	10	..	..	..	..	..	..	..	..	..	..	..	..	..
Koolyanobbing.															
M.A., 12	(Hewitt & Moor)	5	..	..	..	..	..	..	..	..	..	..	..	..	..
Marvel Loch.															
768	Howlett's Battery	5	..	..	..	..	..	..	..	..	..	..	..	..	..
490, etc.	Jacoletti G.Ms., Ltd.	10	..	..	..	..	..	..	..	..	..	8	..	..	..
714, etc.	Marvel Loch Mining Co., N.L.	10	..	..	..	..	..	..	..	..	..	6	..	..	..
803, etc.	Mountain Queen, Ltd.	..	..	..	..	..	..	..	..	3	..	..	..	1	..
Mt. Jackson.															
∧	State Battery, Mt. Jackson	10	..	..	..	..	..	..	..	..	..	..	..	..	..
Nevoria.															
719, etc.	Great Victoria	10	..	..	..	..	..	..	..	..	..	..	..	..	..
T.A., 40	Yilgarn G.M. Co.	10	..	..	..	..	..	..	..	..	..	12	..	..	..
Parker's Range.															
508	Australia	5	..	..	..	..	..	..	..	..	..	..	..	..	..
724	Spring Hill	5	..	..	..	..	..	..	..	..	..	3	..	..	..
Southern Cross.															
889	Fraser's G.M. Syndicate	..	..	..	..	..	..	..	..	1	..	6	..	..	..
536	Transvaal	20	..	..	..	..	..	..	..	..	..	..	..	..	..
Weston's.															
2087, etc.	Greenfinch Proprietary G.M. Co., N.L.	5	..	..	..	..	..	..	..	..	..	6	..	..	..
	Total	**125**	..	..	..	..	..	..	..	**4**	..	**64**	..	**1**	**£84,189**
	DUNDAS GOLDFIELD.														
Buldania.															
M.A., 28	Pathway Battery	..	1	..	..	..	..	..	..	..	..	..	..	..	..
Norseman.															
M.A., 36	Break O'Day Cyanide Works	10	..	..	..	..	..	..	..	..	..	4	..	..	..
1173	Cumberland G.M. Co., N.L.	10	..	..	..	..	..	..	..	..	..	6	..	..	..
938, etc.	Hampton Uruguay, Ltd.	10	..	..	..	..	..	..	..	2	..	12	4	1	..
T.A., 24	Jones' Cyaniding Works	..	..	..	..	..	..	..	..	..	..	5	..	..	..
M.A., 33	Lady Mary Battery	10	..	..	..	..	..	..	..	..	..	..	..	..	..
M.A., 31, etc.	Mararoa G.M. Co., N.L.	20	..	..	..	..	..	..	..	2	..	17	4	1	..
914	Oversight	5	..	..	..	..	..	..	..	3	..	..	..	..	..
106, etc.	Princess Royal G.M. Co., N.L.	20	..	..	..	..	..	..	..	..	..	5	3	..	..
1021	Princess Royal, North	10	..	..	..	..	..	..	..	2	..	2	2	..	..
M.A., 18	Rawlings, Bullen & Rumble's Works	10	..	..	..	..	..	..	..	3	..	4	..	..	..
990	Viking No. 1	10	..	..	..	..	..	..	..	..	..	..	..	..	..
821, etc.	Westralia Waihi G.Ms., N.L.	10	..	..	..	..	..	..	..	1	..	..	..	..	..
∧	State Battery, Norseman	10	..	..	..	..	..	..	..	2	..	5	2	1	..
	Total	**135**	..	..	..	..	..	..	..	**15**	..	**60**	**15**	**3**	**£192,525**
	PHILLIPS RIVER GOLDFIELD.														
136, etc.	Flag leases	5	..	..	..	..	..	..	..	..	..	..	..	..	..
79	Gem Battery	5	..	..	..	..	..	..	..	..	..	4	..	..	..
151, etc.	Gem Consolidated leases	5	..	..	..	..	..	..	..	..	..	2	..	..	..
M.L. 52	Harbour View leases	10	..	..	..	..	..	..	..	1	..	..	..	..	..
74	Two Boys	10	..	..	..	..	..	..	..	..	..	4	..	..	..
Mount Purchas.															
W.R., 19	Mt. Purchas Prospecting Plant	..	1	..	..	..	..	..	..	..	..	..	..	..	..
Ravensthorpe.															
M.A. 3, etc.	Gilbert Gold Mines, Ltd.	10	..	..	..	..	..	..	..	..	..	..	..	..	..
153	Maori Queen	6	..	..	..	..	..	..	..	..	..	4	..	..	..
W.R., 1	Ravensthorpe Battery Co., Ltd.	10	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**61**	**1**	..	..	..	..	..	..	**1**	..	**14**	..	..	**£19,109**
	State generally	..	..	..	1	..	..	..	..	1	..	..	..	..	..
	Total	..	..	..	**1**	..	..	..	..	**1**	..	..	..	..	**£58,000**

TABLE XXIII.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Goldfield.	District.	Milling.										Cyaniding.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.												
		Number of Heads of Stampers.	Prospecting Mills.	Ball Mills.	Krupp Mills.	Griffin Mills.	Huntington Mills.	Tremain Mills.	Flint Mills.	Other Crushers and Grinding Pans.	Puddlers.	Leaching Vats.	Agitating Vats.	Vacuum and Filter Presses.	
	GOLD MINING.														
Kimberley		45	..	..	..	..	1	..	..	..	..	..	..	..	5,000
Pilbara	Marble Bar	60	..	..	..	..	..	..	..	..	..	18	..	..	11,355
	Nullagine	30	..	..	..	..	..	..	..	1	..	11	..	..	4,507
West Pilbara		30	..	..	..	..	..	..	..	..	..	9	..	..	4,850
Ashburton		..	..	..	..	..	..	..	..	..	..	..	..	..	..
Gascoyne		..	..	..	..	..	..	..	..	..	..	..	..	..	..
Peak Hill		40	..	..	..	..	..	..	..	4	..	10	..	4	9,915
East Murchison	Lawlers	148	1	..	..	..	..	..	..	5	2	30	7	3	42,474
	Wiluna	80	3	1	..	..	..	..	..	7	..	34	18	7	88,133
	Black Range	125	..	1	1	..	..	..	..	10	..	69	10	35	119,080
	Cue	93	..	..	..	..	..	..	..	..	..	46	..	..	30,135
	Nannine	209	..	..	..	..	..	..	..	13	1	49	8	2	99,133
Murchison	Day Dawn	60	..	..	..	..	..	..	..	21	..	27	15	5	207,400
	Mt. Magnet	55	3	..	..	..	..	2	..	5	1	31	5	1	37,401
Yalgoo		73	..	..	..	..	..	..	..	1	..	20	..	..	27,580
Mt. Margaret	Mt. Morgans	132	..	..	..	..	..	..	..	3	..	41	15	2	32,900
	Mt. Malcolm	235	..	..	..	..	..	1	..	31	..	80	25	7	199,494
	Mt. Margaret	163	..	5	..	..	..	..	..	12	1	39	11	6	126,278
North Coolgardie	Menzies	135	..	..	..	..	1	..	..	8	..	72	9	4	68,248
	Ularring	85	..	..	..	..	2	..	..	9	..	44	5	1	31,277
	Niagara	75	..	..	..	..	..	..	..	5	..	34	..	..	24,343
	Yerilla	81	..	..	..	..	1	..	..	6	..	23	3	..	25,067
Broad Arrow		93	1	..	..	..	5	..	..	3	..	28	7	5	45,106
N. E. Coolgardie	Kanowna	138	3	..	..	..	..	..	..	3	..	49	4	..	27,220
	Kurnalpi	5	1	..	..	..	..	..	..	..	1	..	..	..	355
East Coolgardie	East Coolgardie	665	1	21	28	13	9	..	33	215	3	242	181	123	1,700,485
	Bulong	10	..	..	..	..	..	..	..	..	..	5	..	..	3,000
Coolgardie	Coolgardie	302	..	..	..	..	1	..	..	10	..	132	2	..	101,472
	Kunanalling	85	..	2	..	..	..	..	..	3	..	48	..	..	18,355
Yilgarn		125	..	..	..	..	..	..	..	4	..	64	..	1	84,189
Dundas		135	..	..	..	..	..	..	..	15	..	60	15	3	192,525
Phillips River		61	1	..	..	..	..	..	..	1	..	14	..	..	19,109
State Generally		..	..	..	1	..	..	..	..	1	..	..	..	..	58,000
	Total Gold Mining Machinery	**3,573**	**14**	**30**	**30**	**13**	**20**	**3**	**33**	**396**	**9**	**1,329**	**340**	**209**	**£3,444,386**
	LEAD MINING.														
Northampton M.F.		..	..	..	..	..	..	..	..	..	..	..	..	..	6,705
	Total Lead Mining Machinery	..	..	..	..	..	..	..	..	..	..	..	..	..	**£6,705**
	TIN MINING.														
Pilbara	Marble Bar	..	..	..	..	..	1	..	..	..	..	..	..	..	25,000
Greenbushes Tinfield		5	..	2	..	..	3	..	..	7	..	..	..	..	21,494
	Total Tin Mining Machinery	**5**	..	**2**	..	..	**4**	..	..	**7**	..	..	..	..	**£46,494**
	COPPER MINING.														
Phillips River		..	..	..	..	..	..	..	..	10	..	..	..	..	87,669
West Pilbara		..	..	..	..	..	..	..	..	5	..	..	..	..	86,322
Mt. Margaret	Mt. Morgans	..	..	..	..	..	..	..	..	..	..	..	..	..	2,260
	Total Copper Mining Machinery	..	..	..	..	..	..	..	..	**15**	..	..	..	..	**£176,251**
	COAL MINING.														
Collie River Coalfield		..	..	..	..	..	..	..	..	..	..	..	..	..	53,435
	Total Coal Mining Machinery	..	..	..	..	..	..	..	..	..	..	..	..	..	**£53,435**
Total Machinery other than for Gold Mining		**5**	..	**2**	..	..	**4**	..	..	**22**	..	..	..	..	**£282,885**
Total all Mining Machinery		**3,578**	**14**	**32**	**30**	**13**	**24**	**3**	**33**	**418**	**9**	**1,329**	**340**	**209**	**£3,727,271**

APPENDIX.

ROYAL MINT, PERTH BRANCH.

Subject to the Regulations, any person may deposit gold at the Mint in his own name. Those who cannot attend personally for the purpose may send the gold by an agent or under Police escort.

A circular can be obtained from the Deputy Master of the Mint giving all necesssary information for intending depositors, conditions of the Escort Service, Coining Regulations, etc., etc.

An Escort Service is provided by the Police Department for parcels of all sizes. The consignor pays for the carriage by coach or train, but the escort charges may be collected by the Mint.

Forms for use in connection with gold sent to the Mint by post or under Police escort can be obtained at the Mint.

Charges for Assaying, Refining, and Coinage.

Gross Weight of Deposit in ounces.	Mint Charge.	Gross Weight of Deposit in ounces.	Mint Charge.	Gross Weight of Deposit in ounces.	Mint Charge.
Up to and including—	£ s. d.	Up to and including—	£ s. d.	Up to and including—	£ s. d.
24	0 5 0	400	4 3 4	1,300	10 4 2
30	0 6 3	410	4 5 5	1,400	10 16 8
40	0 8 4	420	4 7 6	1,500	11 9 2
50	0 10 5	430	4 9 7	1,600	12 1 8
60	0 12 6	440	4 11 8	1,700	12 14 2
70	0 14 7	450	4 13 9	1,800	13 6 8
80	0 16 8	460	4 15 10	1,900	13 19 2
90	0 18 9	470	4 17 11	2,000	14 11 8
100	1 0 10	480	5 0 0	2,100	15 4 2
110	1 2 11	490	5 2 1	2,200	15 16 8
120	1 5 0	500	5 4 2	2,300	16 9 2
130	1 7 1	520	5 6 8	2,400	17 1 8
140	1 9 2	540	5 9 2	2,500	17 14 2
150	1 11 3	560	5 11 8	2,600	18 6 8
160	1 13 4	580	5 14 2	2,700	18 19 2
170	1 15 5	600	5 16 8	2,800	19 11 8
180	1 17 6	620	5 19 2	2,900	20 4 2
190	1 19 7	640	6 1 8	3,000	20 16 8
200	2 1 8	660	6 4 2	3,100	21 9 2
210	2 3 9	680	6 6 8	3,200	22 1 8
220	2 5 10	700	6 9 2	3,300	22 14 2
230	2 7 11	720	6 11 8	3,400	23 6 8
240	2 10 0	740	6 14 2	3,500	23 19 2
250	2 12 1	760	6 16 8	3,600	24 11 8
260	2 14 2	780	6 19 2	3,700	25 4 2
270	2 16 3	800	7 1 8	3,800	25 16 8
280	2 18 4	820	7 4 2	3,900	26 9 2
290	3 0 5	840	7 6 8	4,000	27 1 8
300	3 2 6	860	7 9 2	4,100	27 14 2
310	3 4 7	880	7 11 8	4,200	28 6 8
320	3 6 8	900	7 14 2	4,300	28 19 2
330	3 8 9	920	7 16 8	4,400	29 11 8
340	3 10 10	940	7 19 2	4,500	30 4 2
350	3 12 11	960	8 1 8	4,600	30 16 8
360	3 15 0	980	8 4 2	4,700	31 9 2
370	3 17 1	1,000	8 6 8	4,800	32 1 8
380	3 19 2	1,100	8 19 2	4,900	32 14 2
390	4 1 3	1,200	9 11 8	5,000	33 6 8

For every additional 100ozs. the charge is increased by 12s. 6d.

NOTE.—Additional charges (*see* Regulation No. 6) are collected when base metals in a deposit exceed 2 per cent. of its weight.

The following table illustrates the operation of these charges in case of gold of the value of £3 17s. 10½d. an ounce:—

Weight of Deposit.	Rate of Charge per ounce.	Amount of Charge.	Net Value of Deposit.
ozs.	d.	£ s. d.	£ s. d.
50	2·5	0 10 5	194 3 4
100	2·5	1 0 10	388 6 8
600	2·3	5 16 8	2,330 8 4
1,000	2·0	8 6 8	3,885 8 4
5,000	1·6	33 6 8	19,435 8 4
10,000	1·55	64 11 8	38,872 18 4

NOTE.—A proportion of silver in deposits of gold is paid for by the Mint as follows:—

In deposits under 1,000ozs. gross: all silver in excess of 8 per cent. of the weight of the deposit after melting.
„ from 1,000 „ to 5,000 „ „ 6 „ „ „ „
„ „ 5,000 „ „ 10,000 „ „ 5 „ „ „ „
„ „ 10,000 „ upwards „ „ 4 „ „ „ „

The rate at which payment for silver is made is liable to fluctuation.

GOLD ESCORT SERVICE.

RATES.

From 1st June, 1913—Actual Cost, plus 20 per cent.

RATES FOR CARRIAGE OF GOLD ON GOVERNMENT RAILWAYS.

	Distance not over—							
	25 miles.	50 miles.	100 miles.	150 miles.	200 miles.	250 miles.	300 miles.	350 miles.
Gold dust and bullion per 100ozs. ...	s. d. 1 0	s. d. 2 0	s. d. 3 0	s. d. 3 9	s. d. 4 6	s. d. 5 0	s. d. 5 6	s. d. 6 0

6d. per 100ozs. for every additional 50 miles, or part thereof.

NOTE.—A special reduction of 25 per cent. is made for all gold dust or bullion consigned to the Perth Mint.

To find the value per ounce of gold sent from a mine to the Mint.—Divide the standard gold by the weight before melting, and multiply the result by £3 17s. 10½d. For instance, supposing the Mint return to show:—

	Ozs.
Weight before melting	47·41
Standard gold	38·19

The calculation would be as follows:—

4741)3819·0(·805
3792·8
26200
23705
2495

·805 × £3 17s. 10½d. =
·805 × £3·894
·805
19470
311520
£3·134(670)
20
s. 2·680
12
d. 8·160 = £3 2s. 8d., value per ounce of gold as produced from the mine.

J. F. CAMPBELL,
Deputy Master

16th May, 1913.

By Authority: A. CURTIS, Acting Government Printer, Perth.